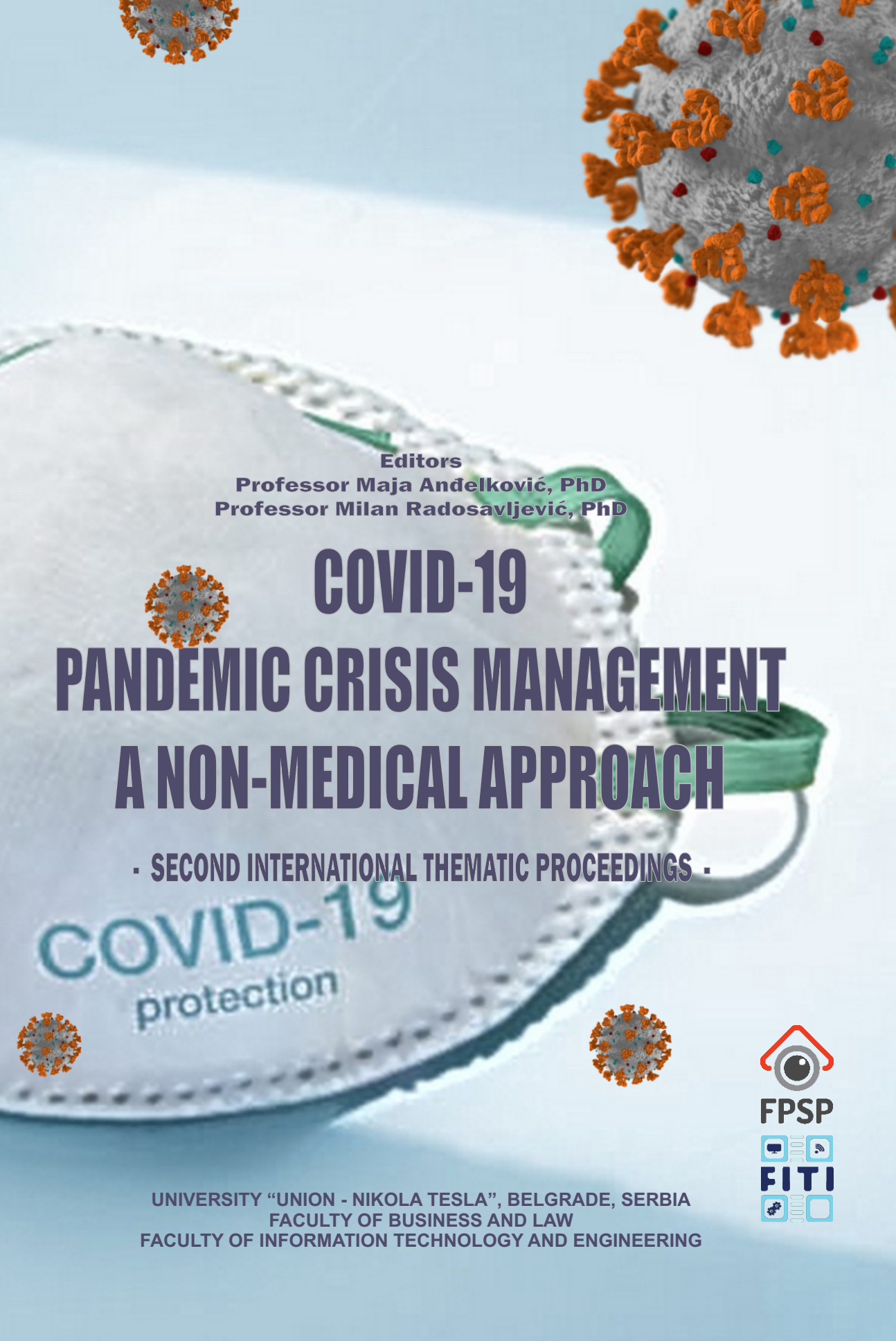

Editors
Professor Maja Anđelković, PhD
Professor Milan Radosavljević, PhD

# COVID-19
# PANDEMIC CRISIS MANAGEMENT
# A NON-MEDICAL APPROACH

· SECOND INTERNATIONAL THEMATIC PROCEEDINGS ·

UNIVERSITY "UNION - NIKOLA TESLA", BELGRADE, SERBIA
FACULTY OF BUSINESS AND LAW
FACULTY OF INFORMATION TECHNOLOGY AND ENGINEERING

Faculty of Business Studies and Law
Faculty of Information Technology and Engineering
University "Union - Nikola Tesla", Belgrade

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Second International Thematic Proceedings

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Belgrade, Serbia, 2022.

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# CONTENT

# FOREWORD

It has been two years since the crisis of the COVID-19 pandemic was announced which has been marked as the biggest crisis in the last hundred years. In the past two years, the world has faced a large number of deaths, infections, burdens on the healthcare system and the closure of the global economy. The healthcare system did not have an answer to the mentioned crisis that surprised the world, although pandemics and viruses as a type of pathogen have been known since a millennium ago.

It has been more than a year since the Faculty of Information Technology and Engineering and the Faculty of Business Studies and Law, which are part of the Union-Nikola Tesla University, published two monographs: the "International Monograph on Covid Pandemic Crisis Management -19". A non-medical approach and a national monograph of the same name have been published as well. What both monographs have in common is that they were written in dramatic times dominated by two words, pandemic and COVID-19, ie in conditions when the fight against the virus awasqualified as a biological war that should be opposed by all national and global potentials. Another characteristic is that both monographs deal with non-medical aspects of the C-19 pandemic, ie: legal, managerial, organizational, economic, psychological, technological engineering, information sciences, religious, customary, cultural and other phenomena. In short, both monographs deal with the problem of the pandemic from the non-medical side. Both monographs are the result of research, analysis, observation and conclusions by experts from various non-medical sciences as well as by domestic and foreign experts.

The need for the creation of this International Thematic Proceednigs entitled: "COVID-19 Pandemic Crisis Management Non-Medical Approach II" is logical and is a continuation of previous research, in a somewhat calmer situation and with a slightly larger amount of knowledge and experience, new scientific information and legislation. It turns out that many things are better seen from a distance, ie after the passage of a certain period of time, but that time is also the best participant in assessing what is objective and what is subjective and to what extent both are represented.

What is indisputable in this International Thematic Monograph as well, and the theses given in previous researches remain even more confirmed, is the fact that the pandemic is not only a medical, but also a non-medical problem. Here, divisions are conditionally taken, because both approaches are directed towards the same goal, and that is to defeat the virus and create conditions for normal life and work of people, but also for the economy. This means that the pandemic is a multi-disciplinary problem, the causes of which are mostly outside the medical profession, and the consequences of the infection are borne by healthcare system. Therefore, it is necessary to study the pandemic with the application of holistic system technology, with the application of the inductive method, where the laws of pandemic management from individual countries would be generalized to the global level, ie to the World Health Organization.

A fact that is indisputable in managing the pandemic crisis is that the medical profession has generally responded to the crisis. These answers were initially accompanied by numerous

unknowns, lack of coping, which is the result of insufficient study and preparation of medical experts to fight the virus. On the other hand, it should be borne in mind that pandemics occur occasionally, that they are temporary and that there is not enough experience with medical and other experts. This significantly affected the investment health, ie investments and technical equipment, because it is often assumed that there will be no pandemic crisis.

It turns out that the non-medical approach to pandemic management is a problem of management and organization as a science and can be addressed by people trained in crisis management. Experience from the latest pandemic indicates the need to develop, even within crisis management, a special branch of specialized science that would deal specifically with the management of health crises caused by mass infection. This could be studied within the medical faculties in the field of health management, as well as in the management faculties dealing with different types of crises.

In managing the pandemic crisis in crisis headquarters in different countries, there were more or less dilemmas to what extent to apply the closure of national economies as a preventive action, and whether to give priority to life and health over the economy. Although there should be no dilemma here, because the lives and health of people are the greatest earthly values, above which there are no greater values, professional pandemic management seeks to achieve the goal of "lives and health and economy". This thesis needs to be further explored in order to answer the question of the extent to which closures, prohibitions, restrictions and other measures can be applied to prevent or reduce mass health infections.

Of course, this International Monograph shows that even after a health pandemic caused by the C-19 virus, there will be a number of other pandemics, individually or integrated, such as: political, economic pandemic, social, psychological, moral and other pandemics. It seems that these pandemics will be longer and more difficult to solve. Since future pandemics belong to the non-medical sphere, this will require that individual non-medical pandemics be addressed. This speaks volumes about the need to look at the pandemic crisis from a non-medical point of view. Domestic and foreign experts from: Russia, Slovenia, Greece, Slovenia and Austria, from relevant scientific institutions participated in the writing of this thematic collection. 11 papers were published in the Proceedings. 30 experts from various fields participated in writing the papers. It is significant that individual works were written in cooperation with domestic and foreign experts, which further improved the quality of works. The thematic collection is open for further research, analysis and review of the given views, conclusions and established laws.

All works have passed software verification and are proven to be authentic, and reports on the above are in the Publisher's archives.

The organizers thank the authors and co-authors of the papers, and the reviewers who made a significant contribution to making this International Thematic Collection available to the scientific and professional public, believing that it will contribute to a more comprehensive view of the pandemic phenomenon in order to better manage the crisis. Second Thematic Conference is supported by Ministry of Education, Science and Technological Development.

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# MANAGEMENT OF CRISIS CAUSED BY COVID-19 PANDEMIC WITH RESPECT FOR HUMAN RIGHTS

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***Abstract:*** *Theoretical background: „In order to mitigate the spread of COVID-19, governments around the world have introduced emergencies, measures restricting individual freedoms, social and economic rights, and global solidarity". These measures closed schools, workplaces and transit systems, canceled public rallies, introduced mandatory house closures and introduced electronic surveillance. Methods: In the literature analysis, the content analysis method and the comparative method were used, which was also used for the analysis of crisis management in different countries of the world. A descriptive method was used in all segments of the work, as well as a case study analysis in the Republic of Serbia. „Results with conclusions: COVID-19 is an unprecedented global threat and human rights should be at the core of the global response". States have not always shown an adequate response to the crisis. The results of the research showed that the digital tools and technologies used during the pandemic monitoring were not always ethically correct and caused public distrust. „Governments should enact laws that are proportionate, necessary and non-discriminatory to the most vulnerable members of society and should ensure that laws mitigate the worst effects of the crisis on vulnerable groups and must be open and transparent." Global solidarity is essential. The terrible scale of this crisis offers an opportunity to radically reconsider the obligation of states to protect the health system and prepare it for the future.*

***Key words:*** *crisis, human rights, pandemic, healthcare system, solidarity, Serbia*

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## INTRODUCTION

Instead of perceiving human rights as restrictions on public health measures, their crucial importance for public health should be recognized through rational, proportionate and responsible building of public trust, and priority should be given to security and protection of vulnerable and marginalized groups.

This paper attempts to answer the question of how human rights are central to three interrelated domains of response to COVID-19:

1. restriction of individual rights to public health protection,
2. exercising the right to health, social security, water, housing and education in the context of the response of the healthcare system and measures of physical removal, and
3. fulfillment of international obligations of cooperation and assistance.

Perceiving human rights at the international level, the authors of this paper attempt to find an answer to how human rights could better support policy responses to COVID-19.

COVID-19 has exposed social and economic inequality, even though human rights are universal, indivisible and interdependent (Vienna Declaration and program of action, 1993). Based on these interrelated rights, it can be concluded that governments should be guided by human rights in what they do, in order to protect those most vulnerable to discrimination and prevent restrictions on certain freedoms in crisis management caused by pandemic. Medical care, public health, social and economic rights as well as global solidarity should be achieved through international cooperation and assistance. (Lugonjić, Arsenijević, 2020)

Due to the fact that the world has become a "global village", crisis situations that occur in any part of the world can no longer be ignored, localized, or approached as a challenge of a local character. Various crisis events, more and more frequently and more and more severely affect both state and political institutions, as well as business, entrepreneurial subjects and individuals. When the World Health Organization formalized the COVID-19 pandemic in March 2020, the challenge that was initially treated as "Chinese" and then as "Italian" soon became global (Mann, Grodin, 1999). In a very short period of time, the local challenge took on the dimensions of a global challenge that completely changed the economic, political and social aspects of human civilization, again leading us to the conclusion that "following incredible and unpredictable events, human history does not follow a pattern." (Vienna Declaration andprogramme of action, 1993). For that reason, the COVID-19 pandemic cannot be

viewed separately only as a health, economic, social or educational crisis, but, given the impact in each of these social aspects, it must be viewed as a combination of all of them.

## 1. THE NOTION OF CRISIS

Events that happen suddenly and without announcement are called crises. Each individual perceives a crisis event and reacts to it in a different way. The choice of reaction to the crisis event itself usually leads in two opposite directions: towards the solution and from the solution. Crisis events are one or more consecutive unforeseen events that negatively affect an individual or the environment. Some crisis situations can have a fire effect. (Orčić, Orčić, Arsenijević, 2020) They appear imperceptibly in some part of society or organization. If nothing is done or if it is not responded to immediately, they can take on unstoppable proportions with huge consequences. Töpfer states that the crisis can generally be defined as an emerging risk. It has been noticed and evaluated before or was not noticed at all, and thus it appeared completely suddenly. (Siracusa principles, 1984)

A crisis is an unplanned, unwanted event with an uncertain outcome that can jeopardize or completely disable the planned process. The symptoms of a crisis can be different. The causes of the crisis can be various such as market crashes like the oil crisis, recession, wars, migration, and many others. Although the causes are different, in the literature they are divided into external and internal. (Joles, 2020)

Pandemics cause prolonged economic damage. Based on these conclusions, we can assume that the effects of the COVID-19 epidemic could persist for a long time to come. It is also pointed out that the end result of a crisis event is conditioned by the way of individual experience and behavior of an individual in relation to the crisis event, not only in the short term but also in the long run.

Some experts estimate that the direct demographic and therefore long-term socio-economic effects of the COVID-19 pandemic will be "very uneven, not only in Europe and the world, but also within individual countries, depending on epidemiological factors and strategy to combat economic crisis caused by the pandemic. (Kaplan, Frais, McFall, 2014) This is especially important considering that analyzes based on previous pandemics have shown that certain long-term economic consequences of pandemics can last for decades or even generations. (Government Gazette, 65:2020)

If the current unwanted crisis event is viewed in a broader historical context, it can be concluded that various crisis events as well as pandemics of global proportions have occurred periodically since the existence of human civilization. We can almost conclude: crisis events are an unavoidable part of the human race. Depending on the severity of the disease itself, the duration of the pandemic, the degree of development of human civilization or individual states, as well as the strategies applied in the fight against the disease and its direct effects, pandemics have shaped future directions of human civilization.

## 2. MANAGEMENT OF CRISIS EVENT

Every crisis takes its course and brings with it also a part of the solution. So, every challenge also carries a potential chance. Almost every crisis that humanity has gone through has carried the germ of radical solutions as well as the potential for a new beginning. A crisis event, although sometimes with the enormous damage it causes, can ultimately result in a positive effect. The effect of a new beginning. New ideas, new higher values initiated by the event itself. It is important to note the fact that each participant in the event perceives it in his own way in accordance with his preferences, ie "intellectual DNA record".

Crisis management is necessary for a successful exit from any crisis situation. Whether it is a crisis caused by human failures or technological failures, conflicts between individuals or groups, misjudgments and decisions, or simply rumors that spread uncontrollably and create panic, an immediate, quick and effective response is needed to prevented the escalation of an unforeseen adverse event. (Orčić, Orčić, Arsenijević, 2020)

It is important to emphasize that there is no ideal way to manage crisis events. The effect of the chosen activity for the purpose of preventive or reactive action as well as resolving the crisis event is as unpredictable as the event itself. However, individual experiences and reactions or management of the crisis process are all conditioned by intellectual DNA.

## 3. RESTRICTION OF RIGHTS THROUGH THE IMPLEMENTATION OF LAWS IN EMERGENCY PROCEDURE

„International human rights obligations do not end in global pandemics. However, many governments have introduced laws restricting travel rights, banning public gatherings, and expanding the use of force against people who do not respect isolation." (Siracusa principles, 1984)

The International Agreement on Civil and Political Rights sets out the principles according to which the right of an individual to the protection of public health is ensured without restriction or harm. Restrictions on rights must be necessary, proportionate and limited in time, and not arbitrary and discriminatory. (Siracusa principles, 1984)

„The UN Secretary General spoke on several occasions about the importance of respecting human rights, and about the fact that states can respect human rights and the rule of law in their response through the implementation of measures that are proportionate to immediate threats. It is crucial to consider how this human rights balancing act can be used to assess and direct policy responses to public health closures and surveillance." (Guterres, 2020)

### 3.1. Restrictions on freedom of movement

„New emergency laws have come into force in many countries, requiring almost all individuals to remain within limited geographical areas or in their homes. In China, in the Wuhan area and Hubei province, about 60 million people were confined solely to their homes." (Joles, 2020) „Other countries, including India, France, Italy, New Zealand, South Africa, Poland, Serbia, as well as many other countries, have implemented country-wide locking, with the exception of doctors, nurses, pharmacists, traders, government officials and food suppliers." (Kaplan, Frais, McFall, 2014) Governments have enforced this restriction on freedom of movement restrictively, including prison sanctions, large fines, and the like.

Restriction of movement, partially or completely, is repeated with the appearance of new virus attacks. (Government Gazette, 65:2020)

Restriction of movement in such situations is a public health necessity in response to COVID-19, but some of the states use unnecessary and disproportionate

force to implement this measure (e.g. India, Uganda). (Human Rights Watch, 2020; Kwalimwa, 2020)

Other countries have imposed explicit human rights violations in their response to the pandemic, declaring a state of emergency without a clear time limit (Hungary, Serbia). (Quinn, 2020) This has allowed the authorities to have more direct influence on human rights. For example, in Serbia, groups of pensioners, due to a complete ban on movement, autistic children and people with disabilities, as well as many other marginalized groups were affected. (Gonzalez Cabrera, 2020; Human Right Watch, 2020) Russia and Myanmar have introduced long-term prison sentences, imprisoned large numbers of people, and thus increased the prison population, leading to the rapid spread of COVID-19 due to prison overcrowding and poor health care. (Rainsford, 2020)

Migrants and refugees were also affected by the measure. Thailand, for example, has banned the return of its citizens working abroad during a pandemic. (Ganguly, 2020; Mutyambai, 2020)

„Human rights principles provide a clear framework for assessing the legitimacy of such measures. Many human rights may be derogated from or restricted to protect public health, but some, such as the right to life, cannot." (European Convention on HR; International Covenant on CPR, 2020; General Comment, 29: 2020) Sanctions for breaches of the movement ban should be proportionate to the national threat from COVID-19 and should not be inappropriate. „For example, the High Court in Kenya ruled that curfew was illegal, as well as the excessive use of force in its imposition, finding that the police were responsible for violating the right to life and dignity of people who allegedly violated curfew." This case is significant because it emphasizes the importance of judicial review of restrictions on rights. (Mutyambai, 2020)

In order to ensure that the measures adopted are not discriminatory and violent, governments must create their policies transparently, engaging vulnerable groups, which will ensure human rights and cooperation in emergencies.

### 3.2. Restriction of privacy through public health surveillance

„In urgent responses to public health, some states have drafted or relaxed data protection laws in order to monitor those infected to the extent of social exclusion and to facilitate disease surveillance." (Digital tools for COVID 19, 2020; Ensuring data privacy, 2020) Israel, for example, used the emergency law to track the location

of smartphones, using the national security agency to track potentially infected people. (Fihim, Kim, Hendrix, 2020) Korea has published detailed data on infected people through private applications, alerting users to their proximity, which has led to discrimination against the elderly. „In China, all citizens had to install software on their phones to predict health status, monitor and share locations with the police, which determined whether people could enter public spaces." (China code APP, 2020)

„In promoting contact tracking through digital tools, governments may exacerbate inequalities because many people do not have modern smartphones that support contact search technology." (Beaunoyer, Dupere, Guitton, 2020) Thus, when data collected through these applications and other technologies are used to inform decision makers, they may leave out vulnerable groups in policy making. A good example of this is Argentina. The Argentine government has adopted the CuidAR COVID-19 application to facilitate contact search. However, they did not take into account the fact that many people live in informal settlements, that they do not have smartphones, and that these settlements are the most endangered by COVID-19. (Rodriguez-Ferrand, 2020; Silver, 2019; Argentina, 2020)

Enhanced surveillance in health emergencies can be useful in support of social alienation and information efforts for epidemiological research on the contacts of an infected person in response to an epidemic. „Nevertheless, the spread of surveillance technology beyond traditional public health mechanisms increases tensions between individual rights and collective interests." (Ni Aolain, 2018) „Without adequate safeguards or at least a reduction in the impact on individual human rights (privacy, freedom of movement), oversight poses a risk to human rights. In accordance with the principle of proportionality of human rights law, all COVID-19 surveillance tools must prove their epidemiological necessity, must be proportionate and limited in time. Tools that collect a lot of data without compromising an individual's identity can meet human rights requirements. The governments of Canada, Iceland and Italy have given people the opportunity to give their consent to use the data collection application for research purposes." (Un special Rapporteur, 2019) It is also very important that governments ensure unnecessary extension of the use of these applications, as well as supervision of private companies so as not to use this measure to make a profit, and that after the pandemic, this measure will be abolished. (Farha, 2020)

„The above examples of restricting human rights in emergencies suggest several important moments in the realization of human rights principles within public health:

- governments must give priority to protecting the most vulnerable people in society;
- initiatives such as distancing and self-isolation will disproportionately affect vulnerable people, including the homeless, migrants, temporary workers and the like." (Yamin, Habibi, 2020)
- before restricting freedoms, states must be transparent in communicating with science;
- governments must enable public participation in order to build citizens' trust and reconcile restrictions on rights with accountability; (Miljković, Arsenijevic, Trnavac, 2018)
- Governments should ensure that the use of force and coercive measures, such as fines and imprisonment, are restricted in order to implement public health objectives.

## 4. FULFILLING THE RIGHT TO HEALTH CARE

„In addition to respecting individual freedoms, states have an obligation to provide adequate medical care in response to COVID-19 based on the right to human health and basic determinants of health, including work, social security, housing, food, water, and sanitation.

As early as 1946, the WHO recognized that the enjoyment of the highest attainable standard of health is one of the basic rights of every human being." (Yates, 2020) „Subsequently, the right to health is elaborated among other human rights in various international and regional documents. The International Agreement on Economic, Social and Cultural Rights (ICESER) codifies this right as the highest attainable standard of physical and mental health, which means creating the opportunity to ensure access to acceptable and quality health care and to provide a basis for public health, including water, food , housing, education, gender equality." (Gage, Bauhoff, 2020; UN, 2020)

„COVID-19 has shown that in many countries the health system is unable to withstand a prolonged health crisis. Many countries, including the United Kingdom, Italy, Spain, and the United States, are struggling to respond adequately due to years of health savings. As a result, efforts are being made to provide appropriate diagnostic tests and personal protective equipment to prevent disease transmission." (Siegfried, 2020; Puras, Mesquita, Cabla, 2020)

„There have been violations of human rights in the field of health, in health care institutions especially towards marginalized groups, such as migrants, displaced persons, racial and ethnic minorities, the elderly, and HIV-positive people. The UN High Commissioner for Refugees has identified thousands of migrants who are at risk of further spread of the infection and other diseases because they are without health care." (Siegfried, 2020) „Bosnian authorities, for example, transferred thousands of migrants to a remote camp, 25km from the Croatian border, without access to health care." (Payne, 2020)

„In order to respect the right to health, states must ensure access to appropriate COVID-19 diagnostic facilities and emergency health care through health policies, programs, and practices." (Payne, 2020)

However, many countries have not been able to operationalize the right to health, have not provided adequate personal health equipment, diagnostic tests, contact search and health service.

„South Africa has introduced a mass free testing program available to all citizens. Countries such as Spain and the United Kingdom have "nationalized" private hospitals to ensure that all citizens have equal access to treatment. However, in countries like the United States, those who do not have health insurance are denied access to treatment or face a ban on using the basic treatment fee against COVID-19, which causes high mortality." (NHS, 2020; Shadmi, Chen, Dourado, 2020; ILO Monitor, 2020; Meier, Evans, Phelan, 2020; Alon, Doepke, Olmstead Rumsey, 2020)

### 4.1. Rights relating to the basic determinants of health

"In addition to the right to health in health facilities, economic and social rights affect public health during periods of physical distancing, including the right to housing, social security, employment, food, and water. Widespread social exclusion highlights existing vulnerabilities within economic systems:

- a large number of people are employed in the service and production sectors that are not subject to social exclusion;
- job insecurity is a threat to continuous income, which leads to social insecurity." (Wenham, Smith, Morgan, 2020; Gajdobranski, Krmpot, Latković, 2020)

Social exclusion disproportionately affects vulnerable groups, causing them health damage, deepening poverty and the like.

„Women around the world have felt inequality under the influence of COVID-19. Many of them have lost their jobs, have to take care of their families and stay at home, which is based on discriminatory policies and gender norms.National lockdowns are especially important for women who are at risk of domestic violence and cannot shy away from bullies. Domestic violence increased worldwide during the pandemic." (BBC News, 2020; Službeni glasnik RS 82:2020)

The prevailing political response was to save the economy and individual institutions, in order to enable citizens to respect distancing and merely satisfy their existential needs. Companies have received economic assistance, cheap central bank loans, tax laws have been amended and social security payments have been increased to support employees. Some governments have compensated workers' wages to allow the closure of businesses, as long as necessary. „Spain specifically mentioned constitutional rights when it allocated funds under the "social shield" package, which included a moratorium on mortgages and utilities to people unable to pay, such as the elderly, people with disabilities or people on low incomes. Incentive packages in France, Denmark, the United Kingdom and India did not explicitly mention social rights, nor did they address the plight of vulnerable groups." (BBC News, 2020)

## 5. INTERNATIONAL OBLIGATIONS: THE OBLIGATION TO PROTECT HUMAN RIGHTS AND ASSIST THE VULNERABLE

„In order to face the global threat - the COVID-19 pandemic, humanity will need a transition to global solidarity and shared responsibility. International assistance and cooperation can provide access to food, basic supplies of water and medicine. Medical assistance and support is a human rights imperative that will be crucial in overcoming this pandemic." (Sekalala, Forman, Habibi, Mason Meier, 2020)

„Low-income countries will face obstacles to mitigating COVID-19, while many rich countries pass isolationist laws and ignore the global emergency. The United Kingdom has passed laws that prevent the export of basic medicines, the EU has limited the export of hospital supplies, and the United States has limited the departure of medical staff." (Sekalala, Forman, Habibi, Mason Meier, 2020) International sanctions against Iran, one of the countries hardest hit by this pandemic, have exacerbated the lack of medical supplies and humanitarian aid.

„The Declaration of Human Rights has long recognized the obligation of rich countries to help the poor. By adopting the Universal Declaration of Human Rights, states

have recognized that international cooperation is necessary in the realization of human rights. Through ICESCR, states have committed themselves to international cooperation for the progressive realization of social and economic rights, including the right to health. This commitment is reflected in helping other nations prevent disease." (https://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx)

Failure to provide assistance to countries in need, deprivation of necessary medical supplies and other necessities, would be very bad for pandemic control. „COVID-19 has shown that all countries are equally vulnerable to the spread of infectious diseases. Recognizing this, some rich countries have made it possible to address the poor directly for help through the United Nations, through the Global Humanitarian Plan for COVID-19." (https://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx)

„The International Monetary Fund, in cooperation with the WHO, offered to suspend debt collection, in order to support global health." At the initiative of Costa Rica, the WHO launched a voluntary fund for intellectual property, for the exchange of technology and knowledge about COVID-19. Several poor countries have gathered around the "People's Vaccine" initiative to ensure that future vaccines are available to all. (https://ourworldindata.org/covid-vaccinations)

## 6. CRISIS MANAGEMENT AND SOLIDARITY IN THE EU DURING THE COVID-19 PANDEMIC

„In this time of crisis, countries, regions and cities across the European Union are helping EU citizens and all those most in need: by donating protective equipment (masks), providing medical teams, cross-border treatment of patients and repatriation of EU citizens." (https://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx) This is the best example of European solidarity.

„The European Commission provides assistance through the Emergency Response Coordination Center, such as coordinating and co-financing the delivery of personal protective equipment and other assistance, organizing flights for the return of citizens from outside Europe and transporting medical teams between countries." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

„The European Union, through the Union Civil Protection Mechanism, helps coordinate and finance the delivery of medical equipment and related supplies (protective masks, disinfectants and other products) to countries in Europe and elsewhere in the world seeking assistance." Let us mention several examples:

(https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

At the beginning of April, European medical teams were sent to Italy, which consisted of doctors and nurses and technicians from Romania and Norway, respectively. The teams were mobilized under the Union Civil Protection Mechanism and coordinated by the EU Emergency Coordination Center.

In early August, an Italian emergency medical team was sent to Azerbaijan, and between June and July, emergency medical teams from Italy, Germany and Lithuania were sent to Armenia.

"The European Union, through the Union Civil Protection Mechanism, helps coordinate and finance the delivery of medical equipment and related supplies (protective masks, disinfectants and other products) to countries in Europe and elsewhere in the world where assistance is needed." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

On April 7 and 8, teams of doctors and nurses and technicians from Romania and Norway were sent to Milan and Bergamo. The teams were mobilized and funded under the Union Civil Protection Mechanism, and coordination was taken over by the EU Emergency Coordination Center. "Austria also offered more than 3,000 liters of disinfectants, and Italy activated the European Union's Copernicus satellite system for mapping health facilities and monitoring activities and public spaces. Several EU member states sent protective equipment (masks, medical overalls, ventilators) to Italy and admitted Italian patients for treatment." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

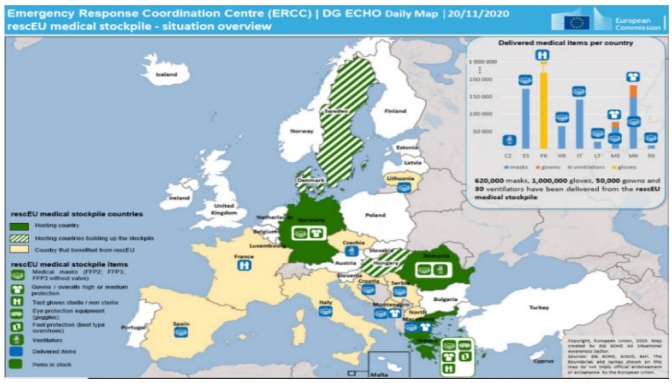


Figure 1: ERCC response to the COVID-19 crisis
Source: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity

„On March 19, the European Commission established the strategic capabilities of rescEU - a common European stockpile of emergency medical equipment, such as ventilators, protective masks, gloves and laboratory equipment, to help EU countries fight the coronavirus pandemic. The commission finances 100% of the capacity (including ordering, maintenance and delivery costs). They are hosted in several Member States and stocks are regularly replenished. Germany and Romania were the first member states to host rescEU stocks, joined in September by Denmark, Greece, Hungary and Sweden. Host countries are responsible for procuring equipment with the support of the Commission." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

„The Emergency Coordination Center manages the distribution of equipment and ensures that it reaches where it is most needed. On June 2, the Commission proposed to strengthen the rescEU mechanism by 2 billion euros in the period 2021-2027, in order to increase the capacity of the European Union to respond in the event of a new cross-border emergency. Additional financial resources will be used to stockpile strategic medical equipment for emergencies, forest fires, chemical, biological, radiological or nuclear accidents, and other major emergencies. The total budget of the Union Mechanism for Civil Protection will amount to 3.1 billion euros. The Emergency Coordination Center manages the distribution of equipment and ensures that it quickly reaches where it is needed. The Commission assists Member States in coordinating assistance and consular repatriation operations for EU citizens from countries around the world." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

„When a Member State activates the Union Civil Protection Mechanism, the Commission's Emergency Coordination Center will coordinate all actions with the European External Action Service and the Member States. The Commission can co-finance up to 75% of transport costs. EU non-citizens can also benefit from this assistance."(https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

Since the start of the pandemic, evacuation flights organized by member states have transported more than half a million people to Europe. In addition, more than 82,000 EU citizens from around the world have returned home through the Union's civil protection mechanism.(https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

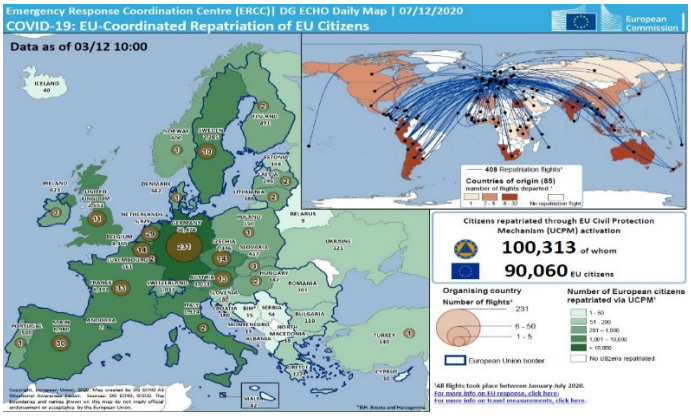


Figure 2: Coordination of the ERCC repatriation of EU citizens
Source: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity

### 6.1. Assistance to non-EU countries

Europe continues to play a leading role in the world as a credible partner in development and humanitarian aid. The EU has mobilized more than 38.5 billion euros worldwide to fight coronavirus. "The EU response is based on the approach of the Europe Team and brings together the resources of the EU, its Member States and financial institutions, including the European Investment Bank and the European Bank for Reconstruction and Development, with the aim of supporting all partner countries. The funds are used to respond to emergencies and consequent humanitarian needs, to strengthen the health, water / municipal and food systems, and to mitigate the economic and social consequences of a coronavirus pandemic around the world. On April 8, the European Commission announced support of approximately 15.6 billion euros in the efforts of partner countries in combating the pandemic." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

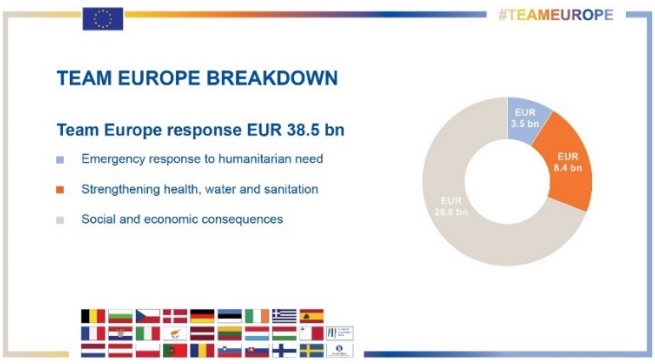


Figure 3. Team Europe Breakdown
Source: https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity_sl#resceu

On 12 November, the Commission concluded ten guarantee agreements with partner institutions worth € 990 million, an important step by Team Europe in promoting investment in Africa and the EU's neighborhood. "The agreements complement the European Fund for Sustainable Development - the financial part of the External Investment Plan. The agreements are expected to mobilize 10 billion euros in total investment, aimed at boosting economic recovery and strengthening the resilience of African and neighboring countries. The financial support is intended to improve health care, provide loans to small and medium enterprises, expand the renewable energy sector, promote green energy solutions and develop green infrastructure and industry."(https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

The commission announced on November 24 that, as part of the EU's global response to the coronavirus pandemic, half of the 38.5 billion euros had been paid for emergency crisis care, basic health services, economic recovery and long-term and short-term measures. social support. "As part of the European team's approach, which brings together the resources of the EU, its member states, the European Investment Bank and the European Bank for Reconstruction and Development, a breakthrough has been achieved in three key areas: emergency response and humanitarian needs, strengthening health care, access to clean water and sewerage and addressing the social and economic consequences of the crisis." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

"On December 1, the EU launched a new € 20 million response program from the Europe team to support the preparedness and response capacity of Southeast Asian (ASEAN) partners: Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore. Thailand and Vietnam. The program aims to strengthen their health systems and support awareness-raising activities to help people living in rural and remote areas by transmitting COVID-19 risks, symptoms, and preventative measures."(https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

"On December 15, as part of Team Europe's accession, € 500 million was awarded to support the global vaccination initiative COVAX, which aims to provide one billion doses of coronavirus vaccine to low- and middle-income countries in Africa, Asia, the Caribbean and the Pacific. on the south. and Europe's eastern neighborhood. The Commission has allocated 100m euros, and the European Investment Bank 400m euros for the participation of low- and middle-income countries in the COVAKS mechanism. Rapidly approved funds were provided by the European Fund for Sustainable Development." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

The initiative will provide access to a safe and effective coronavirus vaccine for at-risk and vulnerable populations and field workers in low- and middle-income countries through the COVAX multilateral mechanism, while enabling self-funded vaccines to be purchased for economies, including the European Union.

"The coronavirus pandemic has caused an unprecedented humanitarian crisis in some of the most critical areas in the world. The EU was among the first to respond in February 2020 to the World Health Organization's plan to respond to the coronavirus in order to meet the most urgent needs of already sensitive countries."

€ 30 million has been earmarked for responding to the most urgent needs in about 10 countries already affected by the humanitarian crisis. In addition, the European Commission announced on May 19 that it would provide an additional 50 million euros in humanitarian aid. "The new funds will help vulnerable people at risk of a major humanitarian crisis, especially in the Sahel and Lake Chad, the Central African Republic, the African Great Lakes region, East Africa, Syria, Yemen, Palestine and Venezuela, and the Rohingya people."

Assistance will be provided to the humanitarian needs of vulnerable groups and ensure that humanitarian actors continue to have the opportunity to work their lives saving lives. "The funds will provide access to health services, protective equipment, water and sanitation. They will be deployed through non-governmental

organizations, international organizations, United Nations agencies and the Red Cross and Red Crescent. Here are some examples of EU-funded humanitarian aid for vulnerable groups."

"In the fight against the coronavirus pandemic, the European Commission has published practical guidelines on how to adhere to EU sanctions when providing humanitarian aid, so that humanitarian and medical aid reaches the people who need it, even when sanctions exist."

"On 12 May, the Commission published comprehensive practical guidelines for providing assistance to Syria, explaining responsibilities and procedures for providing assistance." The purpose of these guidelines is to facilitate the activities of humanitarian actors in Syria, direct equipment and help in the fight against the pandemic. They target all actors involved in the delivery of humanitarian aid (EU Member State sanctioning authorities, public and private service providers, such as donors, NGOs, banks) and who must respect existing EU sanctions when providing assistance.

"The Commission expanded the guidelines on October 13 and November 16, which now include separate chapters on Iran, Venezuela and Nicaragua." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

The coronavirus pandemic has posed critical logistical challenges for the humanitarian community. The lack of commercial flights has led to a backlog of emergency care, while needs in many critical areas continue to increase exponentially.

The European Union launched the EU Humanitarian Air Bridge on May 8 to help fight the global coronavirus pandemic, an interim initiative based on a range of air transport services to deliver humanitarian aid and basic means of responding to coronavirus to the most vulnerable countries most affected by air traffic. "Flights over the air bridge transport basic medical equipment, humanitarian cargo and personnel and assist in repatriation flights organized by EU member states. Flights provide an influx of humanitarian aid and facilitate the movement of humanitarian personnel to and from the most vulnerable countries. All flights are funded by the European Union and are performed in cooperation with Member States, humanitarian organizations and recipient countries."

To date, several tons of medical equipment and medical supplies have been delivered by plane, and medical and humanitarian personnel have been transported to critical areas in Africa, Asia and Latin America.

"As part of the global response to the coronavirus pandemic, the European Commission supports the Eastern Partner countries and announced the redistribution of 140 million euros for the most urgent needs of Armenia, Azerbaijan, Belarus, Georgia, Moldova and Ukraine. The commission will also redirect the use of existing instruments worth up to 700 million euros to help countries during a coronavirus pandemic." These funds are intended to cover the procurement of medical devices and protective equipment, as well as support to companies and employment.

In the face of the coronavirus pandemic, Ukraine has sought the help of the European Union through the Union Civil Protection Mechanism. Slovakia, Estonia and Poland offered protective masks, disinfectants, blankets and other supplies, and the EU coordinated and co-financed the delivery of this aid to Ukraine. In response to an additional request for help, Denmark sent 50 fans to Ukraine on December 11. "The EU Civil Protection Mechanism also coordinated and co-financed the delivery of disinfectants and personal protective equipment from Estonia and Denmark to Georgia. Moldova received gloves, blankets and disinfectants provided by Austria and Poland under the Civil Protection Union Mechanism, and Albania also received gloves and disinfectants from Austria" (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

On April 22, the commission presented a proposal for macro-financial assistance in the amount of 3 billion euros for ten countries in the region and beyond: Albania, Bosnia and Herzegovina, Georgia, Jordan, Kosovo, Moldova, Montenegro, Northern Macedonia, Tunisia and Ukraine. "The proposed assistance is in addition to Team Europe's € 15.6 billion strategy to support partner countries in tackling the coronavirus pandemic. The € 3 billion aid aims to limit the economic consequences of the coronavirus crisis in partner countries. The assistance will be used to implement structural reforms to strengthen economic governance and transparency and to improve the conditions for sustainable growth."

On September 29, the EU and Georgia signed two financing agreements worth 129 million euros to help Georgia manage coronavirus outbreaks and related economic consequences. Georgia received a 75m-euro grant under the agreement to improve resilience to COVID-19 in support of an economic plan to prevent a crisis and help recover from a pandemic. The EU4 Integrated Territorial Development Program has been awarded € 54 million in grants, especially for the economic development of regions outside the capital.

"On December 9, the commission paid 600 million euros to Ukraine under a coronavirus-related macro-financial assistance program based on an agreed memorandum of understanding. With the help of the EU, it wants to contribute to the macro-financial stability of Ukraine and enable its national authorities to dedicate more resources to mitigating the socio-economic consequences of the coronavirus pandemic."

"On August 18, the European Investment Fund and Raiffeisen Bank dd Bosnia and Herzegovina signed a guarantee agreement to increase the bank's creditworthiness. The agreement will help support Bosnia and Herzegovina's economic recovery, as it will provide a new 12m euros with improved lending conditions available to companies in the country. The guarantee, which will be provided under the European Program for the Competitiveness of Enterprises and Small and Medium-sized Enterprises (COSME), is part of the loan guarantee scheme for economic support in response to coronavirus." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

"Bosnia and Herzegovina received tents and other accommodation products, gloves, disinfectants and hygiene items provided by Slovenia and Austria under the Union Civil Protection Mechanism."

On July 19, a team of Lithuanian health workers mobilized through the Union Civil Protection Mechanism was deployed to Armenia. A team made up of volunteers and members of the Lithuanian Coronavirus Crisis Management Team helped their Armenian counterparts fight the coronavirus. To provide further assistance, an emergency medical team of 10 doctors and nurses from Italy was sent on a mission to Armenia on June 26 through the Union Civil Protection Mechanism. The EU coordinated and co-financed the transport of medical teams to Armenia.

On March 30, the European Commission announced emergency aid in the amount of up to 38 million euros for emergency medical measures due to the outbreak of coronavirus for the countries of the Western Balkans. "374 million euros were reallocated from the Instrument for Pre-Accession Assistance for the socio-economic recovery of the region. The countries of the Western Balkans will receive assistance to cover the immediate needs for medical devices and personal protective equipment, such as fans, laboratory equipment, protective masks, goggles, robes and protective clothing, and will support their recovery."

On July 2, the European Commission amended a regulation supporting countries and regions eligible for the Instrument for Pre-Accession Assistance for Cross-Border Cooperation. The instrument modification will provide flexible and

efficient ongoing support to growing needs in sensitive sectors, such as health and tourism, in response to coronavirus and coronavirus plus investment initiatives. Adapted and more flexible rules contribute to the EU's global response to the coronavirus pandemic organized by the European Commission. This response includes a package from the European team, which provides 800 million euros for the Western Balkans and Turkey.

On June 10, an additional 55 million euros were mobilized from the EU Regional Trust Fund to respond to the crisis in Syria to help fight the coronavirus pandemic for Syrian refugees and vulnerable people in Jordan and Lebanon. These additional funds are part of the EU's global response to the coronavirus pandemic. 20.1 million euros are planned for Jordan, and 34.6 million euros for Lebanon. These countries receive the largest number of refugees in terms of population in the world. "The funds will provide critical and targeted support in key areas such as health, water, sanitation and hygiene. The total assistance from the EU Trust Fund, which has been granted since 2015, amounts to 2.2 billion euros, which is twice the initial target value." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity)

## 7. REPUBLIC OF SERBIA IN COVID - 19 SYSTEM

The Government of the Republic of Serbia has adopted three decrees, which form the legal framework for the implementation of state aid measures of 5.1 billion euros. There followed the implementation of the Economic Support Program in order to reduce the negative effects caused by the Covid - 19 virus pandemic. (https://ras.gov.rs/vlada-usvojila-uredbe-za-sprovodenje-ekonomskih-mera-podrske-privredi)

The government has adopted a regulation on private sector assistance and financial assistance to citizens in order to alleviate the coronavirus pandemic. Similar measures have been introduced in other countries: part of the employees' salaries will be covered, more favorable loans, constant monitoring to assess the progress of the project. Germany and Sweden have shown that they are very efficient and the money was transferred a few days after the measures were adopted.

The Serbian government also adopted a provision on a one-time financial aid of 100 euros. Therefore, employees with higher incomes have greater opportunities to work from home. People with low income, for fear of losing their job because they are unable (due to the nature of the job) to work from home, report for work even

with flu symptoms. That causes the potential transmission of the virus and it endagers the health of other people.

The knowledge so far in the world regarding the appearance of COVID 19 in the health system shows a symptomatic situation, which in fact we all poorly understand.

The Republic of Serbia is part of the European Union and should accept the proposed measures. It should also adopt the measures implemented by other countries, ie. those which already had preparatory economic and health measures for their population.

COVID-19 protection measures include contact restrictions, social distance as well as digital surveillance. Digital trekking in the EU was already in the process of being accepted. The German Commissioner for the Protection of Citizens' Privacy said a big "No". At the beginning of the pandemic, the British government did not approve the use of video surveillance and face recognition cameras in certain locations. It is now limitedly approved, from the security measures of its citizens in order to preserve the health of the nation.

Unfortunately, there is no guarantee that the information collected will be used for appropriate purposes due to the new circumstances of the pandemic or that this information will be updated accordingly. Discussions regarding the confidentiality of data can be seen in the culture of certain EU countries, but also in Asia. In China, Japan, but in Asia in general, not only doctors but also IT experts are fighting against the virus, where digital surveillance is not viewed with criticism, because the state is viewed with confidence and society is perceived as a collective.

Human life exists from the conception onwards and differs from other living beings by its genetic code. By birth, personal rights are expanded, with new powers and thus all personal rights arise. Personal rights are subjective and based on personal goods:

- the right to life
- the right to health and the preservation of health
- physical and mental integrity, identity, name.

Restriction of personal rights may be adopted without the consent of the citizens of the Republic of Serbia for the purpose of safety of citizens by declaring an epidemic.

Health surveillance should be a measure that expects its citizens to be responsible and aware. Not that the IT sector or the police ever control it. Electronic registration in the Republic of Serbia is on the website www.e-zdravlje.gov.rs.rs for both travelers and returnees to the country. It is important that the information is in the system and

that the territorial epidemiologist can react. The police will not control anyone, which was not the essence of this measure. Although at the beginning of the epidemic we had disagreements with the new measures. We had a case of close contact between the police and migrants, as well as non-compliance with restrictions on movement.

One of the identified problems arises between doctors and patients in a new situation:

- recognition of unwanted attitudes (mutual),
- recognition of the way of concluding (zadobijanje izgubljenog poverenja), (Krasulja, Ivannikov, Arsenijević, 2020; Erjavec, Arsenijević, Štarc, 2018))
- we should not punish doctors and health workers due to new changes in the previous way of working (which has worked so far). (Lugonjić, Pappas, Sobolieva, 2020)

In these extraordinary circumstances for us, we are not sufficiently informed or, better said, informed about the quality of the health institution that should have already been established by the work permit itself. Indicators of quality for the institution that is monitored as a whole as well as the branches of medicine (internal medicine, surgery, pediatrics, gynecology with obstetrics) as well as Emergency Medicine are:

- percentage of successful patient care (length of waiting for admission, length of hospital treatment),
- borrowing protocols (in writing) for the care of patients in this case of infectious,
- patient safety - his identification and belonging to the risk group and reduce all this to a minimum.

The thing that we still lack, although it has already been regulated by law, is the existence of the Counseling Center for Voluntary and Confidential Testing (DPST).

The main task of managers in the health system is to reduce the pressure from the individual doctor in the process of new changes. The new role of the manager is to reduce confusion between learned, recognized values and implemented ideas. And to launch new ideas and apply them. (Arsenijević, Jovanović, Radosavljević, 2017)

The entire process of maintaining quality and its improvement is under the constant control of the Institute of Public Health „dr Milan Jovanović Batut“. (www.e-zdravlje.gov.rs)

The Crisis Team should be an expert team formed by:

- Doctor of Medicine, epidemiology specialist who is the team coordinator,
- Specialist infectologists, pediatricians, general practitioners, internal medicine ... The team should consist of people of profession and trust.

In the end, we have the obligation of immunization, which is already set as a problem in poor communication, reflected in the distrust of our citizens.

In crisis situations, the problems that exist in a society crystallize. In the coming months, we need to think about how to build resilience to the new health scourge and ask ourselves where we have made mistakes in the reforms of the last twenty years and left a significant part of the population without built immunity to economic troubles. (Žarković, 2020)

## CONCLUSION

The world is facing an unprecedented crisis. It is based on a global emergency in public health that is not often seen, demanding a global response with far-reaching consequences for economic, social and political life. Saving lives is a priority.

After the COVID-19 pandemic, there followed a rapid development and application of digital technology for pandemic management. However, these tools should be guaranteed to be scientifically and ethically sound to ensure broad public confidence and adoption. Typological analysis and established frameworks in public health and big data ethics can help governments and other actors identify the complex ethical and legal frameworks in which these digital tools will operate.

Moreover, the indivisibility of human rights, which the pandemic makes clear, also underscores the need for better coordination among communities in the fight for human rights.

Governments must be open and transparent and ensure the participation of all actors to provide for accountability in decision-making.

„Finally, global solidarity is essential and must be integrated into human rights: cross-border funding must be increased and every vaccine must be globally available. COVID-19 points out that human rights are crucial to effective public and global health." (https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity) The dire scale of this crisis offers an opportunity for a radical re-examination of state obligations in the protection of health systems and their preparation for the future through learning from a crisis situation.

**REFERENCES:**


1. Alon T, Doepke M, Olmstead-Rumsey J. (2020) "The impact of COVID-19 on gender equality". National Bureau of Economic Research.
2. Arsenijević, O. Radosavljević, M. Jovanović, L. (2017) "Formulisanje strategije preduzeća na bazi ugrađene održivosti", Jugoslovensko društvo za širenje i primenu nauke i prakse u zaštiti životne sredine - Ecologica, vol. 24, no. 87, pp. 549 - 554,
3. BBC News.(2020) Malawi's cash handouts and the row about a coronavirus lockdown, 2020. https://www. bbc. com/ news/ world- africa - 52471276
4. Commission on Human Rights. (1984) Siracusa principles on the limitationand Derogation provisions in the International covenant on civil andpolitical rights. New York
5. Constitution of the world Health organization, 1946 July 22, 14 UNTS 185. International Covenant on Economic, Social and Cultural Rights, Article 12(1) and 12(2). UN Office of the High Commissioner for Human Rights, 1976. Available: https://www. ohchr. org/ en/ professionalinterest/ pages/ cescr. aspx
6. European Court of Human Rights. (2020) European Convention on Human Rights, Article 15(2). Available: https://www. echr. coe. int/ Documents/ Convention_ ENG. pdf
7. Erjavec, K, Arsenijevic, O, Starc, J, "Satisfaction with managers' use of communication channels and its effect on employee-organisation relationships", Journal For East European Management Studies, Nomos Verlagsgesellschaft Mbh &Amp; Co Kg, vol. 23, no. 4, pp. 559 - 578, issn: 0949-6181, doi: 10.5771/0949-6181-2018-4-559, Baden-Baden
8. Fahim K, Kim MJ, Hendrix S. (2020) Cellphone monitoring is spreading with the coronavirus. so is an uneasy tolerance of surveillance, 2020. Available: https://www. washingtonpost. com/ world/ cellphonemonitoring- is- spreading-with- the- coronavirus- so- is- an- uneasytolerance- of- surveillance/ 2020/ 05/ 02/ 56f14466- 7b55- 11ea- a311- adb1344719a9_ story. html
9. Farha L. (2020) COVID-19 guidance note protection for those living in homelessness, 2020. Available: http:// unhousingrapp. org/ user/ pages/ 07. press- room/ Guidance% 20Note% 20Homelessness% 20Actual% 20Final% 202% 20April% 202020[2].pdf
10. Gage A, Bauhoff S. (2020) Health systems in low-income countries will struggle to protect health workers from COVID-19. center for global development.

Available: https://www. cgdev. org/ blog/ healthsystems- low- income-countries- will- struggle- protect- health- workerscovid

11. Gajdobranski, A. Krmpot, V. Latković, D. (2020) "Agriculture during the pandemic and expectations in the postperiod", Covid – 19 Pandemic Crisis Management a Non.Medical Approach, Faculty of Business Studies nad Law, University "Union – Nikola Tesla", Belgrade
12. Ganguly M. (2020) Nepal Abandons migrant workers in fight against, General Comment No. 29: states of emergency (article 4), 2001. Available: http:// docstore. ohchr. org/ SelfServices/ FilesHandler. ashx? enc= 6QkG1d% 2fPP RiCA qhKb 7yhs jYoi CfMK oIRv 2FVa VzRk MjTnjRO% 2bfu d3cP VrcM 9YR0 iix4 9nlF OsUP O4oTG7R%2fo7TSsorhtwUUG% 2by2 Ptsl Yr5B ldM8 DN9s hT8B 8NpbsC% 2b7b ODxK R6zd ESeX KjiLnNU% 2bgQ% 3d% 3d
13. Gonzalez Cabrera C. (2020) Panama's Gender-Based Quarantine Ensnares Trans Woman, 2020. Available: https://www. hrw. org/ news/ 2020/ 04/ 02/ panamas- gender- based- quarantine- ensnares- trans- woman
14. Government Gazette No 65 of 30 March 2020. Nsw legislation, 2020. Available: https:// gazette. legislation. nsw. gov. au/ so/ download. w3p? id= Gazette_ 2020_ 2020- 65. pdf
15. Guterres A. (2020) We are all in this together: human rights and COVID-19 response and recovery, 2020. Available: https://www. un. org/ en/ un-coronavirus- communications- team/ we- are- all- together- humanrights-and-covid- 19- response- and
16. Holpuch A. (2020) Profit over people, cost over care: America's broken healthcare exposed by virus, 2020. Available: https://www. theguardian. com/ us- news/ 2020/ apr/ 16/ profit- over- people- costover- care- americas- broken-healthcare- exposed- by- Leonhardt M. Uninsured Americans could be facing nearly $75,000 in medical bills if hospitalized for coronavirus, 2020. Available: https://www. cnbc. com/ 2020/ 04/ 01/ covid- 19- hospital- bills- couldcost-uninsured- americans- up- to- 75000. html
17. Human Rights Watch. India: COVID-19 Lockdown puts poor at risk, 2020. Available: https://www. hrw. org/ news/ 2020/ 03/ 27/ india- covid- 19-lockdown- puts- poor- risk
18. Human Rights Watch. Myanmar: hundreds Jailed for Covid-19 violations, 2020. Available: https://www. hrw. org/ news/ 2020/ 05/ 28/ myanmar- hundreds-jailed- covid- 19- violations
19. ILO Monitor, (2020) COVID-19 and the world of work - Fifth edition, 2020. Available: https://www. ilo. org/ wcmsp5/ groups/ public/- dgreports/- dcomm/ documents/ briefingnote/ wcms_ 749399.

20. International Covenant on Civil and Political Rights, Article 4(2), 1976. Available: https://www. ohchr. org/ EN/ ProfessionalInterest/ Pages/ CCPR. 2020.
21. Joles B. (2020) Voices from Hubei, two weeks into coronavirus lockdown, 2020. Available: https://www. aljazeera. com/ news/ 2020/ 02/ voiceshubei- weeks-lockdown- 200207075046551. html
22. Krasulja, N. Ivannikov, N. Arsenijević, O. (2020) "Organizational culture and behavior in the COVID 19 pandevic on the example of Serbia", Covid – 19 Pandemic Crisis Management a Non.Medical Approach, Faculty of Business Studies nad Law, University "Union – Nikola Tesla", Belgrade
23. Kwalimwa D. (2020) Uganda: police shoot two on Bodaboda for defying Museveni COVID-19 order, 2020. Available: https:// allafrica. com/ stories/ 202003300087. html
24. Law Society of Kenya v Hillary Mutyambai,, Inspector General National Policy Service & 4 others. Petition 120 of 2020 (Covid 025), 2020. Available: http:// kenyalaw. org/ caselaw/ cases/ view/ 192748/
25. Lugonjić, M. Pappas, M. Sobolieva, T. (2020) "The importance of non-verbal communication in healthcare institutions during the COVID-19 pandemic", Covid – 19 Pandemic Crisis Management a Non.Medical Approach, Faculty of Business Studies nad Law, University "Union – Nikola Tesla", Belgrade
26. Lugonjić, M. Arsenijević, O. (2020) "COVID 19 i ljudska prava" TKR, Institut "Mihajlo Pupin", Beograd
27. Mann JM, Gruskin S, Grodin MA (1999) Health and human rights: a reader. New York: Routledge, 1999: 11–18.
28. Nhs strikes major deal to expand Hospital capacity to battle coronavirus, 2020. Available: https://www. england. nhs. uk/ 2020/03/ nhs- strikes- major- deal- to-expand- hospital- capacity- to- battlecoronavirus
29. Miljković, Lj. Arsenijević, O. Trnavac, D. (2018) Political Communication with Population through Social Media, Baština, Институт за српску културу Приштина - Лепосавић, no. 45, pp. 121 - 135.
30. OECD. (2020) Ensuring data privacy as we battle COVID-19, 2020. Available: https://www. oecd. org/ coronavirus/ policy- responses/ ensuring- data- privacy-as- we- battle- covid- 19- 36c2f31e/
31. Orčić, D. Orčić, S. Arsenijević, O. (2020) "COVID 19 izazov ili šansa inovativnom modelovanju preduzetništva u dobu znanja", TKR, Institut "Mihajlo Pupin", Beograd
32. Payne A. (2020) Spain has nationalized all of its private hospitals as the country goes into coronavirus lockdown, 2020. Available: https:// www. businessinsider.

com/ coronavirus- spain- nationalises- privatehospitals- emergency- covid- 19- lockdown- 2020-3

33. Pūras D, de Mesquita JB, Cabal L. (2020) The right to health must guide responses to COVID-19. Lancet 2020;395:1888–90.
34. Quinley C. (2020) Thais left stranded overseas SLAM coronavirus policy confusion, 2020. Available: https://www. aljazeera. com/ news/ 2020/ 04/ thais- left- stranded- overseas- slam- coronavirus- policy- confusion- 200416072630213. html
35. Quinn C. (2020) Hungary's Orban Given Power to Rule By Decree With No End Date. Available: https:// foreignpolicy. com/ 2020/ 03/ 31/ hungarysorban- given- power- to- rule- by- decree- with- no- end- date/
36. Rainsford S. (2020) Russia includes jail terms to enforce crackdown, 2020. Available: https://www. bbc. com/ news/ world- europe- 52109892
37. Rodriguez-Ferrand G. (2020) Argentina. In: Regulating electronic means to fight the spread of COVID-19. New York: Law Library of Congress, 2020: 5–10. https://www. loc. gov/ law/ help/ coronavirus- apps/ coronavirus- apps. pdf
38. Shadmi E, Chen Y, Dourado I. (2020) Health equity and COVID-19: global perspectives. Int J Equity Health 2020;19:104.
39. Siegfried K. (2020) UNHCR refugee Brief—27 March 2020, 2020. Available: https://www. unhcr. org/ refugeebrief/ the- refugee- brief- 27- march- 2020/
40. Silver L. (2020) Smartphone Ownership Is Growing Rapidly Around the World, but Not Always Equally. Pew Research Center's Global Attitudes Project, 2019. Available: https://www. pewresearch. org/ global/ 2019/ 02/ 05/ smartphone- ownership- is- growing- rapidlyaround- the- world- but- not- always- equally/ Službeni glasnik RS br 82/2017
41. United Nations Comprehensive Response to COVID-19. Saving lives, protecting societies, recovering better, 2020. Available: https:// www. un. org/ sites/ un2. un. org/ files/ un_ comprehensive_ response_ to_ covid- 19_ june_ 2020. pdf
42. Wenham C, Smith J, Morgan R. (2020) COVID-19: the gendered impacts of the outbreak. Lancet 2020;395:846–8 McMurtry A. Spain announces a $220B stimulus package, 2020. Available: https://www. aa. com. tr/ en/ europe/ spain- announces- a- 220b- stimulus- package/ 1769513 International Monetary Fund. Policy responses to COVID-19.Available: https://www. imf. org/ en/ Topics/ imf- and- covid19/ Policy-Responses- to- COVID- 19
43. World Conference on Human Rights. (1993) Vienna Declaration andprogramme of action. United nations General assembly. un doc A/CONF 157/2312; 1993.

44. Yates R. (2020) In the COVID-19 era, healthcare should be universal and free, 2020. Available: https://www. chathamhouse. org/ expert/ comment/ covid- 19- era- healthcare- should- be- universal- and- free
45. Žarković, J. (2020) „Eknomski imunitet na korona virus“, Koreni, http://www.koreni.rs/ekonomski-imunitet-na-korona-virus/
46. https://ec.europa.eu/info/live-work-travel-eu/coronavirus-response/crisis-management-and-solidarity
47. www.e-zdravlje.gov.rs
48. https://ourworldindata.org/covid-vaccinations
49. https://www.ohchr.org/EN/ProfessionalInterest/Pages/CESCR.aspx

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# OPPOSITION TO THE COVID-19 EPIDEMIC IN THE REPUBLIC OF SERBIA: STRATEGY, RESULTS AND MEDIA

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*Abstract: Exactly one year has passed since the appearance of the corona virus in Serbia. The period of one year of confrontation with the COVID-19 epidemic, pictorially observed, has the appearance of a sinusoid, when it comes to the number of infected and deceased. On the other hand, the media image of the fight against the coronavirus in Serbia is very uneven. While on the one hand all aspects of opposing the virus are glorified and almost praised, on the other hand these results are underestimated and brought into doubt, to the level of conspiracy theory.*

*The purpose of this paper is to try to present in an objective way three aspects of opposing the coronavirus in Serbia: the strategy of combating the coronavirus; the results achieved in the fight against the virus, and media coverage of the coronavirus. The method of content analysis was primarily used in the preparation of the paper. Also, for comparison with other countries, a comparative method was applied. The results obtained in the research indicate the conclusion that Serbia is relatively successful in fighting the corona virus.*

*Keywords: COVID-19 epidemic, Serbia, strategy, results, media.*

## INTRODUCTION

The topic of this paper is given within the project implemented by the Faculty of Business Studies and Law and the Faculty of Information Technology and Engineering, UNION-Nikola Tesla University in Belgrade, entitled "COVID-19 pandemic crisis management, non-medical approach". Practically, this is the second paper within the mentioned project. The first paper included a theoretical-practical approach to comparing the coronary virus pandemic (epidemic) and crisis management in general, primarily during the state of emergency in Serbia (Forca, Dostić, 2020). This paper covers a period of one year from the appearance of the coronavirus in Serbia and focuses on the strategy of opposing the coronavirus, the results achieved and media reporting.

In accordance with the above, the main goal of the paper is to determine the existence of a strategy for countering the coronavirus that was established during the state of emergency (National Assembly, April 28, 2020), and what results were achieved and how the media in Serbia reported. Therefore, the paper raises three basic questions:

- Is a comprehensive strategy for combating the COVID-19 epidemic being implemented in Serbia,
- What results have been achieved in countering the COVID-19 epidemic and
- How do the media in Serbia report on the opposition to the COVID-19 epidemic?

In the search for answers to the mentioned research questions, the basic hypothesis from which the research was started was set, which is complex and reads: In Serbia, there is no document called the strategy of opposing the coronavirus relatively successful confrontation with the COVID-19 epidemic, which was reported by the media in various, even diametrically opposed ways, up to the level of conspiracy theory.

In order to achieve the established goal and prove the set research hypothesis, content analysis methods and a comparative method were mainly used. The time period covered by the research is limited to the interval 05.03.2020. - 05.03.2021. years.

## 1. RESEARCH RESULTS

The results of the research, primarily, are presented as a kind of answers to the three research questions.

### 1.1. COVID-19 epidemic response strategy

In her speech at the first session of the National Assembly during the state of emergency in Serbia (April 28, 2020), Prime Minister Ana Brnabić pointed out that Serbia's goal in opposing the COVID-19 epidemic was to prevent the so-called Italian and British scenarios. In that sense, a strategy has been established whose practical statement is formulated in the following way: Preventing the exponential spread of the corona virus and creating conditions for the health system to optimally resist the infection (Forca, Dostić, 2020). According to the Prime Minister, this strategy had two primary goals and was implemented in four phases (Table 1).

**Table 1.** Objectives and phases of the COVID-19 epidemic response strategy

| MAIN GOALS OF STRATEGY | PHASE OF STRATEGY APPLICATION |
|---|---|
| To protect our health system so that at all times there is sufficient capacity, resources, protective equipment, medicines, personnel, doctors, medical teams, or everything necessary to fight for people's lives and counter the epidemic COVID-19<br>To protect elderly citizens, the most vulnerable category of the population, from this virus, therefore, all older than 65 years, as well as the chronically ill | 1. PHASE 1: preparations for the epidemic<br>2. PHASE 2: preventing the exponential spread of infection<br>3. PHASE 3: attack on the crown virus<br>4. PHASE 4: preparations for a complete reduction of the epidemic and a possible second wave |

Source: Author

Since our first research question is focused on the integrity of the strategy for opposing coronavirus, and for the most precise answer, it is necessary to look at what is actually done in practice, as well as how the theory sees (understands) the strategy. We'll start with the latter.

It is difficult to unambiguously answer the question of what strategy is and how it is understood in theory. This is also due to the fact that according to some research, there are about 70 different definitions of strategy in circulation (Djuričin et.all, 2010). On the other hand, some theorists claim that the concept of strategy is so fragmented and that it is applied in all spheres of human activity, that it is necessary

to introduce the science of strategy, which would be called strategology (Ocic, 2014: 11).

It is generally known that the term strategy appears in the military sphere, and then expands to the state in the domain of war, only to be displaced in the middle of the last century in the so-called civil structures, ie in the theory of management and business, which significantly complicates its definition (Forca, 2017: 10). In order to establish an unambiguous attitude towards the strategy, we will use two approaches.

Writing about strategy in the field of management and business, professor Milisavljević says: "... strategy is the science and skill of using ways to achieve goals and that strategy is a rational reaction of companies to events in the environment in which they perform their business activity. It is oriented towards the choice of the area of business activity and the allocation of factors of production in order to create and maintain the competitive advantage of the company in the environment "(Milisavljević, Todorović, 1991: 7). At the same time, Milisavljević makes a distinction between politics and strategy and says: "Policy (attitudes, principles, principles or criteria) is adopted to ensure the direction of decision-making (making everyday decisions) on achieving goals." Policy decisions provide consistency, economy and unity of development of the most difficult problems that arise in the business of the company. They guide the decision-making that emerges in the company's business and that can be well programmed. Strategy is a way of achieving goals and each new goal requires a strategy to be achieved. These are decisions that are not structured and that cannot be programmed "(Milisavljević, 2012: 8).

The second approach, theoretically grounded and tested in practice, is advocated by Professor of the American College of Defense Art Lake, who understands strategy as a way (Ways) to achieve established goals (Ends), using limited resources (Means) and taking risks (Risks) (Figure 1).

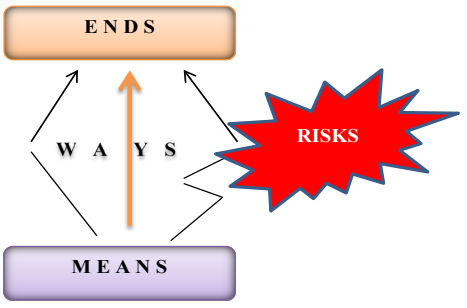



Figure 1. Strategy according to Art Lake
(Source: Forca Božidar, 2019)

Therefore, from the views of Milisavljević and Lake, we can conclude that strategy is a way to achieve the goals set by politics. This is also the basic difference between policy and strategy: policy sets goals, and strategy seeks a way to achieve them.

A special question, when it comes to strategy, is - does the strategy have to exist as a written document? In principle, the answer is YES. However, there are other views that indicate that the strategy does not have to be formulated in a written document, ie to be recognized in political decisions and actions in practice (Kovač, 2003).

Now let's go back to confronting the COVID-19 epidemic and, in short, analyze what all the authorities have done. This is because strategy implementation is the most difficult phase of strategic management (Forca, et.all, 2019). The fact is that the measures of the authorities in Serbia, primarily, were aimed at the health system, ie its training and equipment to cope with the coronavirus epidemic, not allowing it to reach a situation where it cannot accept all infected, as well as provide them with necessary medical care. However, the fact is that the government's measures were directed at other spheres of human activity in the context of the COVID-19 epidemic, such as: economy, social and security spheres.

The measures taken by the government were not shaped into a document called a strategy, but took the form of documents issued by the competent levels of government, such as decrees, decisions, conclusions, instructions, regulations and other documents. In that sense, only during the state of emergency, the Government, with the co-signature of the President of the Republic, passed 44 documents regulating various issues in the country (https://www.paragraf.rs/svi-propisi-uputstva-za-sprecavanje-sirenja-korona-virusa -covid-19.html, 02.03.2021). Thus, it can be stated that the government in Serbia has practically applied a polystrategy in the field of health, economy, social and security level, which, in the material sense, is accepted in the documents of the Government and other state bodies. This poly-strategy (44 documents mentioned) refers to the time of the state of emergency (15.03-05.05.2020), but also in the time after the state of emergency was lifted, the authorities continued to regulate the overall life and work in the country in the conditions of the COVID-19 epidemic, which has not yet stopped.

In accordance with the above, we have answered the first research question, as well as confirmed the first part of the general hypothesis. We will additionally check this statement in next question - the results.

### 1.2. Results

Considering that we pointed out that the government in Serbia has applied a kind of poly-strategy in counteracting the COVID-19 epidemic, let's try to present the key results of that strategy in the field of health, economy and society.

#### *1.2.1. Health sector*

Using a period of three months from the appearance of the corona virus in China to the first infected person in Serbia, numerous activities have been undertaken in the country, primarily aimed at strengthening the capacity of the health system. This is, above all, related to determining the so-called. kovid hospitals and equipping health institutions with certain medications and specialized equipment, primarily respirators and specialized tests. These activities have contributed to the stabilization of the health system to the extent that it can accept all infected persons.

It is indicative that data on the number of procured funds, and especially the cost price, rarely appear in public. Thus, three days before the declaration of the state of emergency (March 12, 2020), in an emergency address to the nation, the President of the Republic pointed out that Serbia has 1,008 respirators. As the reason why this information was secret, the president pointed out: "Because I wanted to procure much more, because the German government, like many other governments, made the decision not to export respirators anymore." Because they keep it for their market. And I wanted to present that otherwise we have much less, so that we can take more respirators on various pages "(https://rs.n1info.com/vesti/a577740-broj-respiratora-u-srbiji-od-drzavne- secrets-to-answer-and-announcements-of-new-purchases /, 05.03.2021). A few days after the declaration of the state of emergency (March 28, 2020), the Prime Minister pointed out that Serbia procured another 480 respirators (https://mediaportal.rs/2020/03/29/srbija-nabavila-jos-480-respiratora/, February 5). 2021). Finally, in the exposition at the session of the National Assembly on April 28, 2020, the Prime Minister pointed out that Serbia ordered 3,967 respirators (National Assembly, April 28, 2020), and that there are 745 available in the system. Although the numbers about the number of respirators do not agree[2], the fact is that during the state of emergency, there was no problem with that type of equipment.

[2] The statement of the President of the Republic that "we have 1,008 respirators" was followed by his statements about the Chinese gift of a hundred respirators - clinical, and then 200 revolving respirators, also from China. Finally, the president's statement follows that Serbia bought as many as 2,200 respirators. In total, there are about 4,000 respirators. (https://www.danas.rs/dijalog/pisma-citalaca/sta-je-istina-o-respiratorima/) (02.03.2021).

Namely, the number of persons on a respirator during the state of emergency did not exceed 100. Such a statement about a sufficient number of respirators can be considered for the period after the state of emergency. Thus, at the end of July 2020, when the so-called the second wave of the epidemic, the Prime Minister stated that there are about 400 respirators in hospitals, and that another 1,500 are available ("free") in the country, of which about 1,030 are in warehouses (https://www.aa.com). tr / ba / balkan / brnabi% C4% 87-u-srbiji-slobodno-oko-1500-respiratora / 1920883, 02.03.2021).

The second wave of the COVID-19 epidemic, by all numbers (infected and deceased) was much more drastic than the first. Data on total and largest maximum figures until March 2, 2021. years are listed in Table 2. Despite the non-unique data on the number of respirators, the fact is that their total number far exceeded current needs even in the most difficult days.

**Table 2.** Some figures of the COVID-19 epidemic

| CATEGORY | NUMBER | NOTE |
|---|---|---|
| Total number of infected | 466.885 | To the 02.03.2021 |
| Total number of deaths | 4.475 | To the 02.03.2021 |
| The largest number of new patients on a daily basis | 7.999 | 1.12.2020 |
| The largest number on the respirator on a daily basis | 353 | 17.12.2020 |
| Most deaths in one day | 69 | 4.12.2020 |
| Total number tested | 2.970.536 | To the 02.03.2021 |
| Most tested in one day | 22.837 | 1.12.2020 |
| Average daily tested | 8.229 | To the 02.03.2021 |
| The largest number of simultaneous hospitalizations | 9.731 | 27.12.2020 |

Source: https://rs.n1info.com/vesti/a671271-koronavirus-srbija-u-brojkama/ 02.03.2021

Infection control tests are especially important during the COVID-19 epidemic. Various types of tests are in circulation, the most famous of which are PCR and the so-called rapid tests[3]. On the situation at the end of April 2020, the Prime Minister

[3] The Agency for Medicines and Medical Devices of Serbia registered a total of 113 tests intended for the diagnosis of the disease "COVID-19", of which 22 tests were registered as fast ("rapid test") antigen tests (method of determination by immunochromatography or

pointed out: "In the beginning we could process between 300 and 400 PCR tests, today we can do a little more than 5,000 PCR tests, a little more than 5,500 PCR tests plus 1,000 to 1,500 tests a day, fast" ( National Assembly, 28.04.2020). Speaking about tests and testing for the corona virus, at the end of July 2020, the President of the Republic pointed out that the goal of the state is to test as many citizens as possible and that Serbia is at the top of Europe, ie that only four European countries Of Serbia (https://www.istinomer.rs/izjava/samo-cetiri-zemlje-u-evropi-testiraju-vise-od-srbije/, 02.03.2021). By the way, in March, Serbia was ranked 81st in the world in terms of the number of people tested per million inhabitants and the last of the countries in the region. In May, the situation significantly improved ("offensive in testing") and Serbia reached the eighth place in terms of the number of tested in Europe, and first in the Western Balkans region. From August onwards, the situation is changing significantly and Serbia leads in the number of tested per 1000 inhabitants (Figure 2). In the wider region, the number of tested per thousand inhabitants is higher only in Slovenia and Hungary than in Serbia.

A special concern of the strategy in the health sector was to provide 6000-10,000 beds for patients. That projection turned out to be cortical, if we keep in mind the fact that in December 2020, there were 9,731 hospitalized in one day. Certainly, the health capacity of Serbia was insufficient for the above projection of beds, so it was done in two ways: 1) general and specialized hospitals were modified into kovid hospitals and 2) various facilities (sports halls, spas, resorts, schools, dormitories and others) are temporarily adapted for the so-called. temporary kovid hospital.

immunofluorescence). We further clarify that in the method of determination by immunofluorescence, it is necessary to read the results on the analyzer, while in the method of determination by immunochromatography the reading is performed directly on a cassette or tape, depending on the type of test. (https://www.alims.gov.rs/latin/2020/12/18/vazno-obavestenje-vezano-za-brze-testove-na-covid-19/, 02.03.2021).

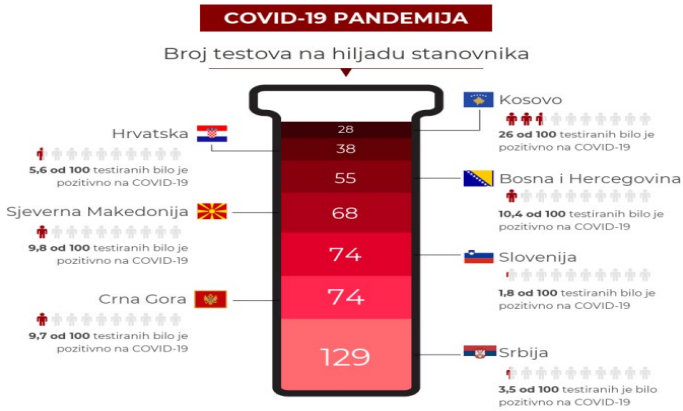



Figure 2. Number of tested per thousand inhabitants in the countries of the Western Balkans
(Source: https://balkans.aljazeera.net/interactives/2020/8/29/korona-u-regiji-ko-najvise-testira, 03/02/2021)

In addition to the above, within four months, two completely new covid hospitals were built in Serbia, one in Batajnica and one in Krusevac. The hospital line in Batajnica has 930 beds, of which 680 in semi-intensive and 250 in intensive care. There are 439 beds in Kruševac, of which 150 are in intensive care. Both hospitals are equipped with state-of-the-art equipment and respirators. Thus, the European average is 541 beds per 100,000 inhabitants, which Serbia exceeded from 567 beds to the same number of inhabitants (https://www.bbc.com/serbian/cyr/srbija-55150392, 02.03.2021).

A special aspect of the results in coronary virus resistance, which is partly shown in Table 2, is the number of infected and dead. Although it is very ungrateful to bid on the number of dead, we will compare the numbers in Serbia and the countries of the Western Balkans region and beyond. Although the numbers are a variable category, it should be pointed out that on February 3, 2021, a total of 470,941 people fell ill in Serbia, of which 4,491 people died. The mortality rate is 0.095%. On the same day, 115,854,953 people fell ill and 2,573,494 people died in the world. The mortality rate is 2.22%. (Kurir, 03/03/2021). For comparison, Table 3 provides data for the most developed countries and countries in our region.

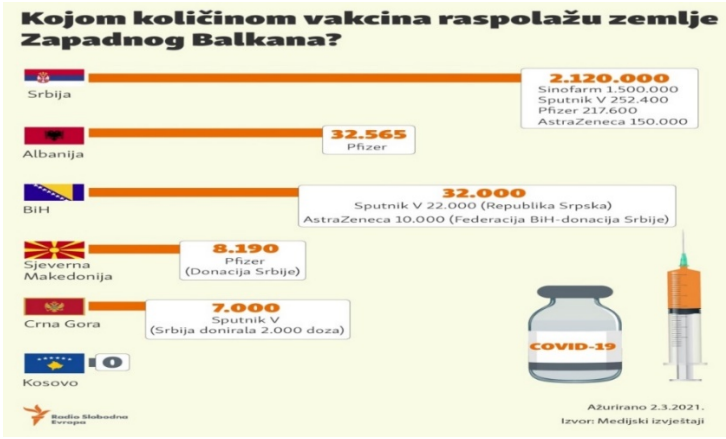
Table 3. Consequences of the COVID-19 pandemic

| COUNTRY | ILL | PASSED OUT | MORTALITY RATE ( %) |
|---|---|---|---|
| USA | 29,456,377 | 531,652 | 1,80 |
| India | 11,156,920 | 157,471 | 1,41 |
| Brazil | 10,722,221 | 259,402 | 2,41 |
| Russia | 4,290,135 | 87,823 | 2,04 |
| United Kingdom | 4,194,785 | 123,783 | 2,95 |
| France | 3,810,316 | 87,542 | 2,29 |
| Spain | 3,136,321 | 70,247 | 2,23 |
| Italy | 2,976,274 | 98,635 | 3,31 |
| Hungary | 446,178 | 15,476 | 3,46 |
| Romania | 812,318 | 20,586 | 2,53 |
| Bulgaria | 253,183 | 10,413 | 4,11 |
| North Macedonia | 97.052 | 2.989 | 3,08 |
| Albania | 109,674 | 1,856 | 1,69 |
| Montenegro | 77,493 | 1,031 | 1,33 |
| Bosnia & Herzegovina | 133,982 | 5,174 | 3,86 |
| Croatia | 244,872 | 5,564 | 2,27 |

Source: Kurir, 03.03.2021

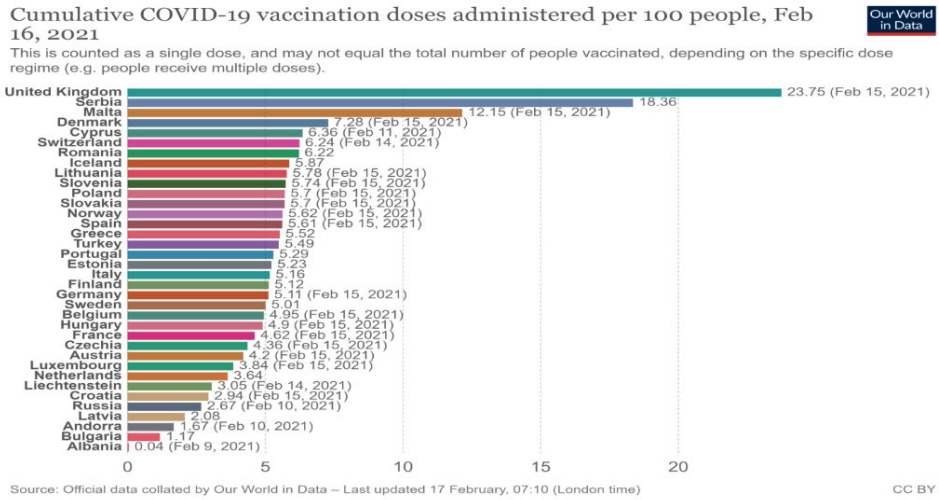
From the data listed in the previous table, it is possible to draw different quantitative conclusions. The fact is that the mortality rate from coronavirus, from the mentioned countries, is the lowest in Serbia (0.095%), and the highest in Bulgaria (4.11%). About 50% of the countries listed in the previous table have a mortality rate higher than the world average (2.20%). The data on the mortality rate is especially important if we keep in mind that there is a large number of infected people in Serbia (only Romania is ahead of Serbia in the region). Thus, it indicates the readiness and efficiency of the health system to resist the corona virus. Unfortunately, there are not a small number of health workers who became ill and died from the corona virus.

Possession of the vaccine and immunization of citizens is a special issue for which Serbia has extremely positive results, ie among the best in Europe and the world. Serbia is the first country in the region to start immunizing the population, and the second was the only one. Graph 1 shows the type of vaccines available in the Western Balkans on March 3, 2021. It should be borne in mind that Serbia has contracted the purchase of 11 million vaccines, and the figure on the chart does not include data on 500,000 vaccines arriving on March 5, 2021 from China and vaccines that the EU should donate to Serbia in March under the CIVAX program.




Graph 1. Types of vaccines in the region
Source: https://www.slobodnaevropa.org/a/vakcine-covid-korona-virus/31123565.html, 03/02/2021)

Serbia ranks second in Europe in the number of vaccinated persons per 100 inhabitants (Graph 2).




Graph 2. Number of vaccinated per 100 inhabitants
Source: https://www.istinomer.rs/izjava/ubedljivo-smo-najbolji-najvise-vakcinisanih-u-evropi-najmanje-zarazenih-u-regionu/, 03/02/2021

### *1.2.2. Economic sector*

It is an indisputable fact that the pandemic and epidemic of COVID-19, in addition to the impact on human health, had the greatest negative effect on the economies of all countries in the world. Also, the fact is that the countries of the world have reacted differently and achieved different effects in an effort to minimize this negative impact. Therefore, in this part of the paper, we will look at some key measures that the state of Serbia has taken to support the economic sector.

The first data refer to the whole of 2020, which according to the data of the National Bank are shown in Table 4.

Table 4. Program of economic measures to reduce the negative effects caused by the COVID-19 pandemic and support the Serbian economy

| GROUP | MEASURES |
|---|---|
| FIRST<br>Tax policy measures | 1. Postponement of payment of taxes on salaries and contributions for the private sector (during the state of emergency), with subsequent repayment of the incurred obligation in installments (starting at the earliest from 2021)<br>2. Postponement of payment of profit tax advance in T22020.<br>3. Exemption of donors from the obligation to pay |
| SECOND<br>Direct assistance to the private sector | 4. Payment of aid in the amount of 3 minimum wages to entrepreneurs who are taxed at a flat rate and pay real income tax, such as imicro, small and medium enterprises in the private sector<br>5. Payment of assistance to large companies in the private sector in the amount of 50% of the net minimum wage for employees whose decision determined the termination of work |
| THIRD<br>Measures to preserve liquidity | 6. Financial support to the economy through the Development Fund of the Republic of Serbia<br>7. Guarantee scheme for economic support |
| FOURTH<br>Other measures | 8. Moratorium on dividend payment until the end of 2020, except for public companies<br>9. Measures to increase salaries and other direct financial assistance<br>10. Direct assistance to all adult citizens of Serbia in the amount of 100 euros in dinars |
| FIFTH<br>Additional package of measures, July-August 2020 | 1. Payment of aid in the amount of 60% of the minimum wage to entrepreneurs, micro, small and medium enterprises<br>2. Postponement of payment of taxes and contributions for one month<br>3. Direct support to the hotel sector - 350 € bed, 150 € per job |

Source: National Bank of Serbia, January 2021

Serbia has invested 5.8 billion euros in the presented measures, and it is one of the six other countries in the world that have made more than 10% of the gross national income (GDP) for that (China, USA, Germany, Australia, Great Britain and France). At the same time, the fact is that in 2020, Serbia had the smallest decline in gross national income (-1.1%) of all European countries.

Undoubtedly, from the abbreviated overview of economic measures during the coronavirus epidemic in 2020, one can conclude rational, efficient, effective and fruitful action of the country's political system, which unequivocally reduced harmful consequences and prevented drastic economic decline. To this should be added a new package of measures in 2021, announced by the President of the Republic, the Prime Minister and the Minister of Finance, and which will amount to around 2.5 billion euros.

The new package of 2.5 billion euros for 2021, in principle, includes:

- Three times 50% of the minimum wage for entrepreneurs, for all employees (1,550,000 people) will start in April, and a decision will soon be made for large companies,
- The transport sector will receive 600 euros per bus
- All adult citizens (who apply for it) will receive 60 euros (30 euros in May and 30 euros in November), and pensioners another 50 euros (110 euros in total). (Kurir, January 26, 2021).

### *1.2.3. Social sector*

During the state of emergency, non-medical measures were taken to suppress the spread of the virus, on the one hand, and to ensure the normal functioning of all functions of the state and society, on the other hand. These measures include: restriction of movement and the so-called. Police hour; ensuring the enrollment of children in kindergarten and school (through the service: e-Government, e-Kindergarten, e-Enrollment); realization of small matura; transition to online teaching through various platforms (RTS3, RTS "Planet") and other Internet models; recommendation to work from home, wherever possible; recommendation to citizens regarding self-isolation measures and prevention of mass gatherings of citizens; limiting food price increases and sanctioning those who do not adhere to these measures; providing sufficient masks and gloves; the export of medicines and

medical equipment is prohibited; the operation of cafes, restaurants and other catering facilities is limited; borders are closed and travel is restricted.

After the state of emergency was lifted, non-medical measures took on a situation-by-situation aspect. Although a state of emergency has not been reintroduced, a state of emergency has been imposed in the regions, municipalities and cities.

It can be stated that social life, as well as all citizen services in the course of the fight against the coronavirus so far, was in line with the basic goal of protecting the health and lives of citizens and that it took place without major disturbances. The fact that the population did not lack protective masks and gloves, as well as basic foodstuffs and other necessities in any period of the epidemic, can be especially emphasized.

From the presented analysis of the results in counteracting the COVID-19 epidemic, we can draw two conclusions: 1) the strategy we talked about in the first question, obviously, was implemented in other sectors not only health, although the explanation of its goal and measures 2) It is unequivocal that significant positive results have been achieved in all these sectors, which puts Serbia in an even better position than the countries of the region, but also some of the most developed countries in the world. In this way, we answered another research question and part of the basic hypothesis.

### 1.3. The media

The coverage of the coronary virus pandemic and epidemic by all types of media (print, electronic, social networks) is very diverse. In principle, these reports can, conditionally, be reduced to information of a positive, neutral and negative character. There are analyzes of the media image during the state of emergency, while for the whole of 2020 they do not exist. Therefore, we will focus on the reporting of print and TV media for the period 26.02-06.05.2020, according to the research of the OSCE Mission to the Republic of Serbia. (https://www.osce.org/files/f/documents/4/e/457648.pdf, 02.03.2021).

#### *1.3.1. Printed media*

The print media included dailies with the largest circulation in Serbia, such as Informer, Politika, Kurir, Blic, Večernje novosti and Danas.

In thematic terms, the media mostly reported on the situation in Serbia caused by the coronavirus epidemic, and this thematic approach accounts for 17% of all texts. Then follow the texts that dealt with specific measures of the state aimed at preserving the health of the population during the analyzed period (introduction of a state of emergency, curfew, restriction of movement, etc.), a total of 15% of the texts. The fight against coronavirus, ie the topic that included the broadest approaches in the fight against coronavirus at the level of society, was noted in 12% of the texts. News from around the world follows (7%), and 6% of the texts are dedicated to political life and economy in the context of a pandemic. That is, the attention of most media was primarily focused on confronting political and social actors with the coronavirus and the consequences of the pandemic (OSCE, 2020: 5).

The genre of texts published in these daily newspapers is shown in Table 5).

**Table 5**. Genre of texts in daily newspapers (in%)

| MEDIA | Analitics | Stories about people | Informative | Interview | Comment | Total |
|---|---|---|---|---|---|---|
| Blic | 4 | 6 | 70 | 16 | 4 | 100% |
| Danas | 13 | 2 | 49 | 24 | 12 | 100% |
| Informer | 3 | 8 | 82 | 4 | 3 | 100% |
| Kurir | 3 | 6 | 68 | 19 | 4 | 100% |
| Politika | 18 | 1 | 67 | 10 | 5 | 100% |
| Večernje novosti | 5 | 3 | 73 | 15 | 3 | 100% |
| Total | 9 | 4 | 67 | 15 | 5 | 100% |

Source: OSCE, 2020:10

The newspaper's approach to reporting is also different, as shown in Table 6.

**Table 6.** Distribution of texts in relation to the approach to reporting

| | Blic | Danas | Informer | Kurir | Politika | Večernje novosti | Total |
|---|---|---|---|---|---|---|---|
| Informing about the corona v. | 213 | 237 | 113 | 197 | 332 | 219 | 1.311 |
| The politicization of the pandemic | 2 | 38 | 27 | 33 | 25 | 25 | 150 |
| Interesting facts/bizarrenes | 4 | 9 | 21 | 20 | 4 | 9 | 67 |
| .Spreading fear and panic | 3 | 2 | 27 | 11 | 1 | 5 | 49 |
| Media conflicts | 0 | 9 | 2 | 8 | 0 | 0 | 19 |
| Reducing the seriousness of the situation | 1 | 0 | 6 | 1 | 3 | 2 | 13 |
| Total | 223 | 295 | 196 | 270 | 365 | 260 | 1609 |

Source, OSCE, 2020:11

The media politicized the topic of coronavirus in 9% of the texts. This practice was most present in the dailies Informer (14% of the analyzed articles in this daily) and Danas (13%), followed by Kurir (12%), Večernji novosti (10%) and Politika (7%), which is implied a political contextualization of the coronavirus challenge. Almost 40% of these texts do not have a clear reason, but were created as a consequence of the interest of the editorial office itself. In Danas, out of 38 texts that politicized the

consequences of the coronavirus, 17 have no clear reason (45%), while in Informer, a third of the politicizing texts have no reason. However, almost half of these texts published in the Informer were in no way based on the facts presented in the text (48%). A similar approach was noted in Kurir, where about a third of the texts were not grounded in the presented facts, in Večernji novosti in 24% and in Politika in 12% of politicizing texts. On the other hand, Danas based most of these texts on the facts explained in the text (92%). (OSCE, 2020: 12).

Particularly indicative is the way in which daily newspapers spread daily panic over coronavirus in the period from March 5 to April 15, when 49 articles (3%) were published on the front pages in which the media took this approach. From one to 7 texts a day can be considered content that spreads panic, with more than half of these articles published in the Informer (27). As many as 84% of articles have a clear reason, and the information most often came from official sources (26 texts), foreign - 18 and health workers - 9, who were named alone or together with other types of sources in these texts (OSCE, 2020,12 ).

From February 28 to May 5, texts were published on the front pages of Kurir, Informer and Danas in which the perspective of media conflicts is visible. This practically means that the media were active participants in the conflict in which they represented their views. The approach that was most noticeable at the very beginning of the pandemic was to reduce the seriousness of the situation, when the media reported without critical review the statements of officials and experts that coronavirus is "the funniest virus in the world", "exists only on Facebook" and that citizens can "go to shopping in Italy "(a total of 12 front pages of Informer, Kurir, Politika, Večernji novosti and Blic).

The selection of sources indicates the way in which the media approach reporting, ie what the media content they publish is based on. The most represented sources in the analyzed texts were official sources - members of the Crisis Staff, the President of Serbia, the Prime Minister, ministries and other institutions directly responsible for the fight against coronavirus. In 259 texts, these sources were the only type of source on which the entire text was based, while in another 354 texts they were one of the sources. In texts in which there were several types of sources, scholars were the source alongside health workers (47 texts), social actors (31), foreign (18), political power (18), media (17), analysts (13) and unnamed sources (11). A total of 38% of all analyzed texts originated or contain the views of officials - in most media, official sources are represented in 37% to 45% 40 of all published texts, and the lowest representation of official sources is in Danas (21%). In addition, sources from different levels of government are represented in another 10% of the texts of all

dailies. On the other hand, opposition political actors are the source in a total of 93 texts, of which 55 in Danas. It is indicative to find that only one type of source has been identified in the 951 text. For example, in Politika, as many as 60 texts are based on citing only official sources, while in Danas there are only 9 such texts. In Blic, health workers are the only source in 27 texts, and unnamed sources in Kurir are the only source in 11 texts. Particularly interesting is the attitude towards the opposition, which is the exclusive source in Danas in 29 articles, while Informer and Večernje novosti did not conceive of any text in that way (OSCE, 2020: 17).

In 83 texts published or announced on the front pages, the culprit for the pandemic is directly indicated, which is shown in Table 7.

**Table 7.** Distribution of "those responsible for the epidemic"

| | Citizens | Authorities | Other social actors | "Gastarbeiters" | Opposition | Total |
|---|---|---|---|---|---|---|
| Blic | 3 | 0 | 3 | 2 | 0 | 8 |
| Danas | 0 | 17 | 0 | 0 | 0 | 17 |
| Informer | 8 | 0 | 4 | 2 | 2 | 16 |
| Kurir | 13 | 0 | 2 | 2 | 6 | 23 |
| Politika | 6 | 0 | 3 | 3 | 0 | 12 |
| Večernje novosti | 4 | 0 | 1 | 2 | 0 | 7 |
| Total | 34 | 17 | 13 | 11 | 8 | 83 |

Source OSCE, 2020:20

Among all categories of actors, the most represented are the President of the Republic and the Government of Serbia (731 appearances). The President of Serbia, Aleksandar Vučić, is the most present actor (286 appearances), three times more frequent than the next one, the Prime Minister of Serbia, Ana Brnabić (93). During the analyzed period, Aleksandar Vučić was present on the front pages almost every day in the context of the fight against coronavirus and most often his role in the text was active (65% of articles), as well as the role of the Prime Minister of Serbia (70%). daily attendance was significantly lower.

Medical experts, who made up the Crisis Staff or informed the public about aspects of the pandemic, were present in 601 appearances. The expert who was a key actor in most of the texts is Dr. Predrag Kon (126), and in most of the articles he had an active role to inform (90% of the articles). He had a passive role in 12 texts, of which he was praised in 6, while in one he was the subject of criticism. The media

defined themselves in a positive context in 4 texts. The next actress according to her participation is Dr. Darija Kisić Tepavčević, represented in 90 texts, of which she actively informs the audience in 88% of articles, then she was mentioned in 11 texts, criticized in 2, and her work was praised in 4 texts. According to her, the media expressed the value context in 7 texts, 6 positively and 1 negatively. The actor who is most criticized is Dr. Branimir Nestorović, who is the subject of criticism in 6 texts, and the negative attitude of the media towards him is expressed in 5 (OSCE, 2020: 23).

### *1.3.2. TV stations*

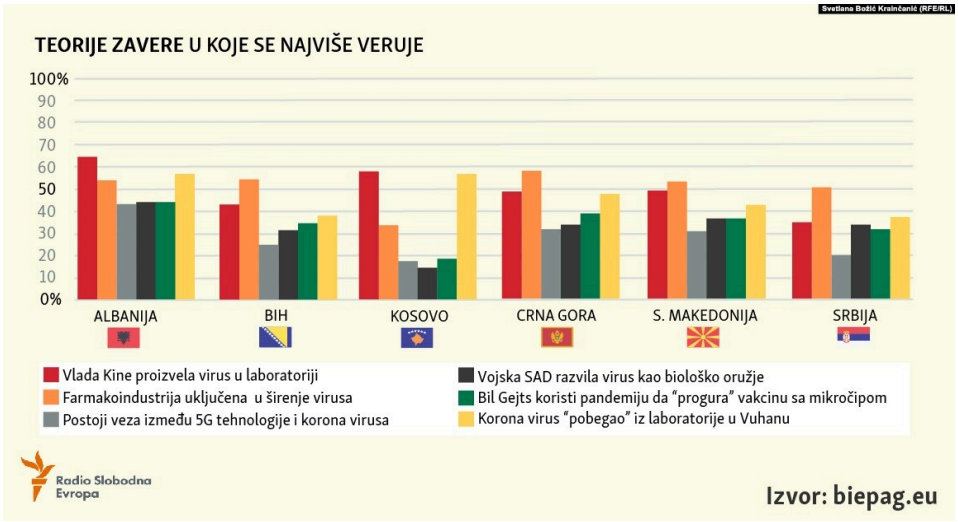
TV media are one of the most represented media for informing about the corona virus, not only in Serbia, but also in the region and beyond. More than half of the citizens of Serbia were informed about the course of the coronavirus pandemic, data on the number of infected people and restrictive measures through the websites of state institutions. Of that number, 12 percent were informed through this channel on a daily basis. The leading ways of informing about the health situation are television (50 percent of respondents were regularly informed) and social networks (51 percent were informed every day or every week), according to the latest research of the Center for Free Elections and Democracy (CeSID, December 21, 2020).

This analysis will include three TV media: RTS, TV "Pink" and TV N1. The interpretation of the pandemic on these TV stations includes 376 items and, for the most part, ranged within the medical framework (60% of items), the next in terms of representation was the political framework (25%), then the context of everyday life during the pandemic (13%), legal (2%) and media conflict framework (1%). In the representation of genres, informative (RTS-98.39%; TV “Pink” -97.56% and N1-82.95%) prevailed, while analytics was less represented, except for N1 (RTS-1.61%, TV “Pink” -1.63% AND N1-16.28%). (OSCE, 2020: 26).

Media content was based on information obtained from official sources in 82%, ie 307 articles, and the participation of official sources is approximately in all analyzed articles. Most articles that rely exclusively on information from the state (Government of the Republic of Serbia, President and members of the Crisis Staff) were recorded on TV Pink (79), with another 24 articles where there is information provided by other actors. RTS relies only on official sources in 52 reports, while in another 49 there are other types of sources. TV N1 selected sources in a similar way - 48 items are based on official ones, while several types of sources are noted in another 55 items. Additionally, the website of the Ministry of Health Covid19.rs was the source in 49 attachments.

In 25 articles broadcast on the analyzed televisions, ie in 7% of all published articles, the media directly identified the „culprits for the spread of the pandemic“: citizens (18), returnees from the diaspora (1), opposition (1) and other social actors (5) . For the spread of coronavirus, the analyzed TV stations blamed the citizens for indiscipline and irresponsible behavior, RTS75 and Pink in 8 items each, and N1 in 276. Returnees from the diaspora were presented in one RTS report as responsible for spreading the coronavirus in Serbia, while in one TV show, opposition actors were presented in that way. Other social actors have been identified as the culprits for the spread of the coronavirus, mostly in TV Pink (3) 78 and in one RTS and one H1. (OSCE, 2020: 34).

Not only in Serbia, but also in the countries of the region[4], there is information in the media that has the character of a "conspiracy theory" (Graph 3).




Graph 3. Conspiracy theory in the media in the Western Balkans
Source: https://www.slobodnaevropa.org/a/covid-19-i-teorije-zavere-na-zapadnom-balkanu/30994279.html, 03/03/2021

When it comes to only the media in Serbia, the press, TV, and especially social networks, during the epidemic there is a different approach to issues that can be classified as "conspiracy theory", such as: 1) the actual number of deaths caused by death COVID-19, 2) method of procurement and cost of medical equipment,

[4] In this paper, Kosovo and Metohija is not considered a state, but data on certain issues from Kosovo are given for the reason that they are listed in the sources from which they were taken.

especially respirators and tests 3) silence of the authorities on the number of deceased health workers from COVID-19, 4) method of procurement and reliability of vaccines from China (Sinofarm). It can be said that some other issues were mentioned, polarized the public in Serbia to such an extent that health workers also formed the association "United Against Covid" (UPK), which drew from the initial 350 signatories to several thousand. (https://ujednani-protiv-kovida.net/o-nama/, 03.03.2021).

In accordance with the above, when it comes to the media, a partial answer to the research question was given and part of the basic hypothesis was confirmed.

## 2. DISCUSSION OF RESEARCH RESULTS

The limited scope of the text meant that a more comprehensive approach could not be applied in the research. However, the data obtained also provide acceptable answers to the research questions posed and confirm the established hypothesis. In accordance with the presented research data, in the commentary on the research results we can state:

- Serbia, like any other country in the world, was not prepared to effectively oppose such a scale of pandemic and epidemic caused by the corona virus. The fact is that the period of three months until the appearance of the first infected person in Serbia (March 2020) was used, above all, to stabilize the health system, but also to organize the state and society to counter the plague,
- It is evident that the government in Serbia over time has established a kind of strategy to counter the pandemic and epidemic COVID-19, which is not shaped as a complete document, but is primarily expressed in political decisions and measures of government (Government, President and line ministries),
- Although the strategy of combating the coronavirus virus is primarily focused on the health sector, the fact is that it affects both the economic and societal level,
- The results that Serbia has achieved in opposing the corona virus, logically, are most obvious in the health sector. Although the scale of the epidemic in Serbia has taken drastic forms, and the danger has not yet been eliminated, the fact is that the health system has survived and there has been no stronger destabilization. It has been unequivocally shown

that the mortality rate in Serbia is significantly lower than the mortality rate in much more developed countries. Also, the health resources of Serbia have been significantly improved by the construction of new covid hospitals, and the immunization with various types of nailzia vaccine is appreciated and even praised by many countries,

- State intervention in the economic sphere could not completely eliminate the negative consequences of the COVID-19 pandemic. However, the fact is that the Government's economic measures have yielded positive results in surviving the system in the face of the epidemic, as well as preventing a more drastic drop in GNI and population standards. After the fall of the GNI, Serbia has the best results in Europe,
- At the societal level, Serbia has implemented a number of measures that have affected the organized life and work of all state systems and social organizations, especially in education, supplying citizens with all kinds of necessities, as well as other aspects,
- The media image in Serbia is an integral part of the polarization of our society. The fact is that state bodies, political parties and the media have contributed to that. Namely, when there is no real information, it is quite logical that misinformation "circulates". On the other hand, the political struggles of opposing groups in other spheres have spilled over into the domain of opposing the corona virus, for which the media have been used to a significant extent,
- When it comes to the media in Serbia, the fact is that the EU[5], but also some research centers (Figure 2), estimate that the freedom of the media in our country is declining, but that this is not the case only in our country.
- The fact is that, when it comes to the media, the research focuses on data related to the state of emergency (March-May 2020), and not on the year as the time range of the research. In this sense, the relevance of the research results is questionable, but a trend can be recognized.

[5] It is known that every year the European Commission submits a Report on Serbia's progress towards the Union. The report for 2020, among other things, contains views on the insufficient freedom of the media in our country.

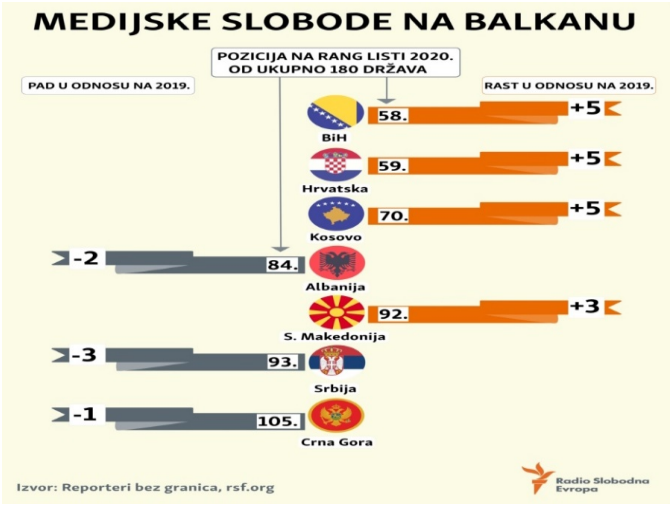



Figure 2. Media freedoms in the Balkans
Source: https://www.slobodnaevropa.org/a/covid-19-i-teorije-zavere-na-zapadnom-balkanu/30994279.html, 03.03.2021

## CONCLUSION

The COVID-19 pandemic and epidemic are not over. On the contrary, although various types of vaccines have been produced and are in circulation, a new wave is underway that brings an increase in both the number of infected and the mortality of the population. The whole world, including Serbia, is facing such a situation.

The paper analyzes the period of one year of the COVID-19 pandemic and epidemic, according to the identified research questions. In that sense, and in accordance with the previous paragraph, it is ungrateful to talk about the final results of a process that has no end in sight. Therefore, observing the affected period (05.03.2020-05.03.2021) the following conclusions can be drawn:

- The health sector of Serbia has been relatively successfully resisting the COVID-19 epidemic for a year now, which is a consequence of effective government measures and efforts made by health workers,
- In parallel with interventions in the domain of the health sector, state bodies take measures and activities to prevent the destabilization of the economic system and the functioning of all state and social functions. The results in these activities of the state have a positive trend, which means not optimizing growth, but minimizing the decline in all

performance in evidently emergency conditions such as the pandemic and epidemic COVID-19,

- The media picture of opposing the COVID - 19 pandemic and epidemic in Serbia is diverse. This implies the division of the media observation of the situation and process, as part of the general division in our society.

Serbia has not overcome the danger posed by the COVID-19 pandemic and epidemic. In the opposition to the corona virus, obviously, there are positive results, but also some open questions that do not have an explicit answer for now. Obviously, it takes time and joint effort to objectively analyze both good moves and omissions, not because of looking for the "culprit" or awarding medals, but because of the truth and the pledge for the future.

**REFERENCES:**


1. CeSID, 21.12.2020; https://novaekonomija.rs/vesti-iz-zemlje/gra%C4%91ani-se-o-pandemiji-naj%C4%8De%C5%A1%C4%87e-informisali-putem-televizije-i-dru%C5%A1tvenih-mre%C5%BEa.
2. Djuričin, N.D., Janošević, V.S., Kaličanin, M.S., (2010), Menadžment i strategija, Ekonomski fakultet, Beograd.
3. Forca, Božidar, (2019), Sistemi bezbednosti, skripta, Fakultet za poslovne studije i pravo, Beograd.
4. Forca, Božidar, (2017), Od strategije do strategolgije, Zbornik radova sa nacionalnog naučnog skupa „Savremeni problemi strategije i strategijskog menadžmenta“, Fakultet za poslovne studije i pravo, Beograd.
5. Forca Božidar, Dostić Siniša, (2020), Crisis Management on the Example of Corona Virus, u: COVID-19 Pandemic Crisis Management / editors Maja Anđelković, Milan Radosavljević. - Beograd : University "Union - Nikola Tesla", Faculty of Information Technology and Engineering : University "Union - Nikola Tesla", Faculty for business studies and law, 2020. - str. 47-81.
6. Forca, Božidar, Dostić, Siniša, (2021), Suprostavljanje epidemiji korona virusa u Republici Srbiji, Baština, Leposavić.
7. Forca, Božidar, Šešum, Nataša, Dedić, Velimir, (2019), Teorijski i normativni pristup implementaciji strategije, Savremeni problemi i moguća rešenja strategije i strategijskog menadzmenta-Monografija, Fakultet za poslovne studije i pravo Univerziteta “UNI0N-Nikola Tesla”, Beograd, strana 135-158.
8. Kovač, Mitar, (2003), Strategijska i doktrinarna dokumenta nacionalne bezbednosti – Teorijske osnove, Svet knjige, Beograd.
9. Kurir, 03.03.2021., kurir.rs.
10. Kurir, 26.01.2021., kurir.rs.

11. Milisavljević, Miloš, Todorović, Jovan, (1991), Strategijsko upravljanje, Ekonomski fakultet, Beograd.
12. Milisavljević,Miloš, (2012), Strategijski menadžment: analiza, izbor, promena, Ekonomski fakultet, Beograd.
13. Narodna skupština, 28.04.2020; https://www.google.com/search?q=Stenograf+sa+sednice+Narodne+skupstine+28.04.2020&oq=Stenograf+sa+sednice+Narodne+skupstine+28.04.2020&aqs=chrome..69i57.12598j0j7&sourceid=chrome&ie=UTF-8.
14. Ocić, Časlav, (2014), Strategija razvoja:zamisli i ostvarenja, Zbornik sa naučnog skupa "Moguće strategije razvoja Srbije", SANU, Beograd.
15. OSCE (2020), https://www.osce.org/files/f/documents/4/e/457648.pdf.
16. https://www.slobodnaevropa.org/a/covid-19-i-teorije-zavere-na-zapadnom-balkanu/30994279.html.
17. https://www.paragraf.rs/svi-propisi-uputstva-za-sprecavanje-sirenja-korona-virusa-covid-19.html.
18. https://rs.n1info.com/vesti/a577740-broj-respiratora-u-srbiji-od-drzavne-tajne-do-odgovora-i-najave-kupovine-novih/.
19. https://mediaportal.rs/2020/03/29/srbija-nabavila-jos-480-respiratora/.
20. https://www.aa.com.tr/ba/balkan/brnabi%C4%87-u-srbiji-slobodno-oko-1500-respiratora/1920883.
21. https://rs.n1info.com/vesti/a671271-koronavirus-srbija-u-brojkama/.
22. https://www.istinomer.rs/izjava/samo-cetiri-zemlje-u-evropi-testiraju-vise-od-srbije/.
23. https://www.alims.gov.rs/latin/2020/12/18/vazno-obavestenje-vezano-za-brze-testove-na-covid-19/.
24. https://balkans.aljazeera.net/interactives/2020/8/29/korona-u-regiji-ko-najvise-testira,
25. https://www.bbc.com/serbian/cyr/srbija-55150392.
26. https://www.slobodnaevropa.org/a/vakcine-covid-korona-virus/31123565.html.
27. https://www.istinomer.rs/izjava/ubedljivo-smo-najbolji-najvise-vakcinisanih-u-evropi-najmanje-zarazenih-u-regionu/.
28. https://www.slobodnaevropa.org/a/covid-19-i-teorije-zavere-na-zapadnom-balkanu/30994279.html.
29. https://ujedinjeni-protiv-kovida.net/o-nama/.

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# CONSUMER BEHAVIOR OF GEN Y AND GEN Z DURING THE COVID-19 PANDEMIC

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***Abstract:*** *The paper focuses on different aspect of consumer behavior of Gen Y and Gen Z during the COVID-19 pandemic and also on how this pandemic will influence further behavior both regarding consumers and companies. All indicators so far show that in the coming period, there will be a turnaround in consumer behavior, with new opportunities for businesses (e.g. contactless economy, teleworking, e-commerce and renovated logistics). As a must, marketing activities adapt to the needs and lifestyle of the new generation. Marketing tools that require from companies themselves to have a disruptive way of thinking in order to efficiently and effectively approach new generations are the result of considering and analyzing how the new generations consume products and media. As they themselves grew up in the digital and visual age they expect different forms of marketing. Some of the best ways for companies to follow theese needs is creating authentic messages and live content, livestreaming, personalization of content, cooperation with influencers, constant innovation and co-creations.*

***Key words:*** *Millennials (Gen Y), Gen Z, behavior, brands, product, digital,*

## INTRODUCTION

The influence of VUCA (Volatility, Uncertainty, Complexity, Ambiguity) world and COVID-19 pandemic on consumers from one side, and micro, small and medium enterprises (MSMEs) sector from other side, have been significant. Research focused on the problem of doing business in times of crisis of this magnitude became more intensive only with the beginning of the COVID-19 pandemic.

All indicators so far show that in the coming period, and in the VUCA world, there will be a turnaround in consumer behavior, with new opportunities for businesses (contactless economy, teleworking, e-commerce and renovated logistics). (Mamula Nikolić, Perčić & Nećak, 2020) This inevitably entails the readiness and ability of companies to introduce innovation, open and interdisciplinary cooperation (Crowdsourcing), (Von Krogh, Kucukkeles, & Ben-Menahem, 2020), as well as to respond quickly to the needs of end users. As one of the ways of reactions of small producers/providers after the introduction of quarantine and closure of physical shops and markets, e-markets have appeared (e.g. FB market, Small food producers in Serbia on Facebook) - pages on social networks that connect producers and consumers, which are even without intermediaries and their commissions.The lockdown initiated the "shop local" behavior. (Mamula Nikolić, Perčić & Nećak, 2020)

Due to the closure of state borders and constant uncertainty, the priority is to rely on local business, i.e. doing business localization. Learning from forced experimentation and investing in risk reduction technologies can help companies become smarter and more flexible, and to better position themselves by changing their business model in the shortest possible time. (Vlašić et al., 2020, p.14) The crisis has led to drastic changes in the interaction of organizations with consumers - from the transition to digital teaching, through the licensing of Amazon's Just Walk Out technology (Luo, & Galasso, 2020), all the way to cultural institutions that have found the means to create, perform and connect with their audiences through online platforms.

Acording to research done in April 2020, respondents in Serbia believe that in the next four weeks from the moment of filling in the questionnaire there will be: (Mamula Nikolić, Perčić & Nećak, 2020)

- increase in purchase of:
    - food and non-alcoholic beverages (according to the forecast of 29% of respondents), which is the highest projected percentage regarding

planned consumption, and can be explained by increased consumer concerns about sufficient food and beverages;
    - household chemicals (25%), which is explained by the greater need of consumers for disinfection and keeping homes clean;
    - products for personal hygiene and facial care (18%), due to the also greater need to prevent the risk of disease;
- reduction in purchase of:
    - clothing and footwear (51%), because most of the time at the beginning of the crisis was spent at home and due to the expectation of reduced income and giving priority to priorities;
    - fuels (40%);
    - personal care services (39%);
    - technical devices and accessories for technical devices (34%);
    - fast food and food delivery (24%), which is explained by the increased need for healthy food. (Mamula & Ćoso, 2015; Perić, Mamula Nikolić & Delić, 2021)

Learning from forced experiment and investing in risk reduction technologies can help organizations become smarter and more flexible. (Perčić, Mamula Nikolić, 2020) Thus, for example, before the new crisis, companies considered investing time and resources in experiment of working from home too big cost, but crisis of COVID-19 left many without other options. There is massive investing in IT equipment and systems so employees can work from home. It is believed that flexible arrangements of working from home will become permanent policy of many organizations even after the crisis (Luo & Galasso, 2020). Workers who prefer working from home can achieve increased productivity, shorter commuting time and lower rate of job quitting, because they are generally happier (Luo & Galasso, 2020). Similar considerations apply to business travel that has been replaced by videoconferencing.

## 1. THE NEW GENERATIONS

Being born and raised in a digital world, the Millennial generation is often called "Digital natives": they "think and process information fundamentally differently from their predecessors" (Prensky, 2001, p. 1), they are "used to receiving information really fast and they like to parallel process and multi-task" (Prensky, 2001, p. 3), they have blended their online life with their offline life (Sullivan, 2015). The development of IT leads to the faster development of generations and each generation represents the characteristics of its period. Each country has a specific

Generation Y, but due to the globalization, social media, influence of the Western culture and the speed of changes worldwide, they have become more similar to each other unlike the older generations. (Stein, 2013; Mamula Nikolić, Popović-Pantić & Muller, 2020) This generation is highly educated and technologically connected comparing to the prior generations, although there are differences in attitude, values, behaviour, lifestyle and ethnic diversity. (Taylor & Keeter, 2010) They are also called "digital natives," "net geners," "netizens," "homo zappiens" as members of the first generation growing up surrounded by digital media. (Prensky 2001, Tapscott 1999, Veen 2006). Their lifestyle differs from "digital immigrants" who learned to "do technology" later in life. (Mamula Nikolić, Sanja Popović-Pantić & Muller, 2020)

Millennials or Generation Y is very curious and eager to gain new knowledge and experiences and to take active part in the world around them. They quickly accept new technologies and the Internet which they use on everyday basis. They are active in social networks and blogs and they use applications and gadgets. Despite the fact that they were born and grew up in the times of crisis in the country, they have become young people with a lot of energy and ideas that are fond of digital way of communication. (Mamula Nikolić, Sanja Popović-Pantić & Muller, 2020)

Millennials advantage is their outstanding knowledge and use of technology, which is why they work considerably faster and more productively than their older colleagues. They also have a better approach to issues and practical solutions, as well as clearly defined goals. The formula of how to address the Millennials indicates that the approach, as well as the content, needs to be entertaining, informative, and educational. (Mamula Nikolić, Sanja Popović-Pantić & Muller, 2020)

The greatest effect is achieved by using personalized and usable messages targeted at resolving imponderable questions and ambiguities which evoke emotions and step out of standard frameworks offering a "broader picture". (Mamula & Ćoso 2015) All these characteristics encourage and enable Millennials to be much more innovative than previous generations thus creating opportunities for faster development of country. Innovation as one of the main drivers of economic growth initiates competitiveness and brings completely new view and approach to marketing way of thinking. (Mamula Nikolić, Sanja Popović-Pantić & Muller, 2020)

According to the GlobalWebIndex research (2018) top five online activities of GenZ are mostly related to mobile phones, and include the following: visiting/us-ing social network (95%), using a chat or instant mes-saging service (92%), watching a video clip or visiting a video-sharing sites (91%), visiting or using a search engine (90%), visiting an online retail sites or stores (79%). GenZ is becoming more tech-

savvy and more privacy-aware. For instance, 60% say they're con-cerned about how their personal data is being used by companies and 53% say they prefer to be anonymous when online. (Perić, Mamula Nikolić & Delić, 2021)

Wood (2013) states four trends that characterize GenZ as consumers: a focus on innovation, an insistence on convenience, an underlying desire for security, a tendency toward escapism. Unlike previous generations, GenZ members have always had and will have instant access to a wealth of information on a variety of topics. GenZ quickly shares its opinion with all its virtual friends not only about the experience with brands but also with com-panies. They usually express themselves very easily about things they don't like through social media. (Perić, Mamula Nikolić & Delić, 2021) There are few things marketers have to have in mind when advertising to GenZ. They want to be communicated with visually and with short, bite-sized content. This is a generation that knows how to search and find exactly what they want, so when expectations aren't met, they don't give a second chance. Their limited attention span means brands can never stop working for their business and, since they don't like being sold to, marketers need to find ways to deliver relevant, engaging and immedi-ately beneficial experiences (Trifecta Research, 2015).

Because they primarily communicate via Instagram and Snapchat, TikTok, most of GenZ communicate and expresses themselves visually, not verbally, they express themselves through emoticons, images and video clips. They easily select and process virtual data and this fact will really help them in their work later, while for employers it will be a great advantage. (Perić, Mamula Nikolić & Delić, 2021)

On one issue, GenZ continues in the foot-steps of GenY: it uses inventive solutions such as „gig economy", circular economy, „shared economy" or economy of sharing, e-learning, m-learning, nano- learning (Mamula, Ćoso, 2015; Mamula Nikolić, Sanja Popović-Pantić & Muller, 2020)

## 2. TRENDS DURING THE COVID 19 PANDEMIC WITH A FOCUS ON BEHAVIOR OF THE NEW GENERATION

During the Covid-19 pandemic, online shopping increased, but shopping will continue to take place in stores. Retailers should review the layout of products on store shelves as well as working hours to make purchases safe and fast. They should also optimize sales space for a different type of customer, especially for those who buy less often and spend less, but buy more, and keep the focus on the assortment because the household need for basic and health products is increasing, and for non-priority

categories is declining. More and more people are buying domestic brands. As consumer preferences change rapidly, consumer-oriented companies should accelerate market feedback by regularly collecting information from consumers and anticipating changing trends. Figures 1 and 2 show the strong frequency of the Internet use in various areas.


Figure 1: Consumers have seen changes in every aspect of their lives
(Source: Fabius, Kohli, Veranen, and Timelin, McKinsey & Company (September 2020))

Some organizations completely reoriented their business to working from home. For example, employees in companies Google, Facebook, Twitter, Siemens, are approved to work from home for indefinite period of time, if that suits them better. All Google employees, both full-time and part-time employees, about 200,000 of them, will work from home at least until July 2021. Main motive for that is to help workers who must take care about children, because functioning of kindergartens and schools around the world is uncertain (Copeland & Grant, 2020). And when it comes to educational institutions, especially primary and secondary schools, they have adapted their work system to working from home, through e-learning. However, many modern higher education institutions in the world have this way of distance learning developed, and they readily met changes caused by pandemic. E-learning development has always been a pursuit for understanding of the way in which

students learn and how to provide them with attractive materials. (Perčić, Mamula Nikolić, 2020) E-learning courses are supposed to be easy to navigate and ready for implementation via exercises, case studies, knowledge checks, scenarios, simulations and interactive games. (Mamula & Ćoso, 2015)

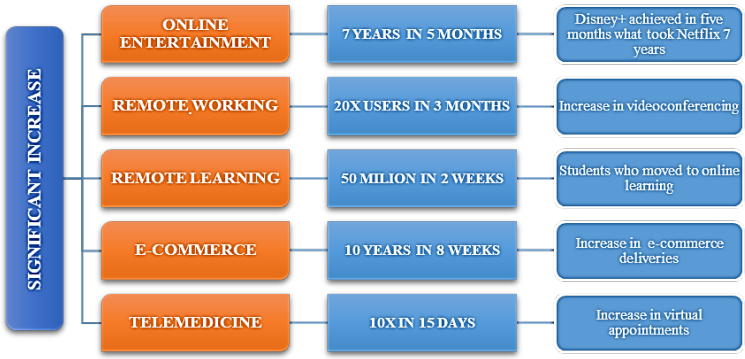


Figure 2.Global COVID-19-driven digital adoption rates have covered decades in days
Source: Fabius, Kohli, Veranen, and Timelin, McKinsey & Company (September 2020)

Every organization and its culture are distinctive, just as the circumstances of each individual employee. While some enjoyed the new work experience, others could hardly wait to return to the offices. (Perčić, Mamula Nikolić, 2020) "Experimental" work from home has opened up some new options for many organizations, such as: access to new talents with fewer location constraints, adopting innovative processes to increase employees` productivity, creating an even stronger organizational culture, as well as significant reduction of costs of real estate in function of business premises. Various researches confirm that a significant number of employees enjoy working from home, that they feel less stressed, and that they are motivated and more productive. (Perčić, Mamula Nikolić, 2020)

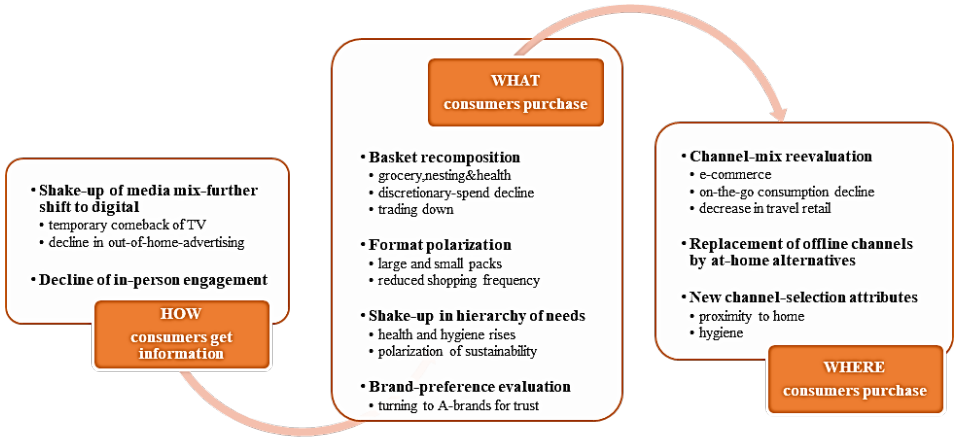


Figure 3: Companies will need to adjust quickly to changing consumer behaviour until COVID-19 is under control
Source: Fabius, Kohli, Veranen, and Timelin, McKinsey & Company (September 2020)

The COVID-19 pandemic has created an even stronger sense of individual responsibility. Nearly three-quarters of surveyed respondents say the pandemic has made them more empathetic to the needs of others and that they intend to take action to make a positive impact on their communities. (Deloitte 2020)

Behaviors driven by personal values, such as sustainability or a desire for personal interaction, can vary in the degree of long-term adoption in different countries and regions, depending on local infrastructure and other conditions.

During the COVID-19 pandemic, behavior of consumers and employees changed and online shopping, distance learning and distance work proved to be a necessity. One of the reasons is that the proponents and actors of these activities are members of the new generation (GenY and GenZ) who have been digitally active since their birth. They feel comfortable in that form of communication and work.

## 3. RESEARCH METHODOLOGY

The research was conducted on current secondary data and research covering the topic of Behavior of the new generation during the COVID-19 pandemic in the period from April 2020 to January 2021. The target group that most quickly reacted to digital transformation and online shopping during the COVID-19 pandemic is the younger generation (GenY and GenZ), which is why it is the subject of our research.

In the first part, the focus was on researching trends in consumer behavior, and in the second part on the target group of the new generation.

## 4. BEHAVIOR OF THE NEW GENERATION DURING THE COVID-19 PANDEMIC

As customers, members of the new generation are specific in their consumer and purchasing behavior. Even when it comes to luxury goods GenY has a different approach. (Paunović, Dressler, Mamula Nikolić, Popović-Pantić, 2020) GenY and GenZ build their relationship with a brand on its influence on the environment as much as on its likeability. The social responsibility of companies and brands has a great influence on whether the members of the new generation will show them loyalty or not. In addition, new generations will prefer to stick to those companies that do not ask for too much personal data (Deloitte, 2019). This view also comes from the fact that the new generation tends to buy online, or at least to check before buying the opinion of others about the brand on forums or social networks.

It is not only the work environment that has gone through changes due to the arrival of members of the new generation in the work environment. Digital technologies have changed all aspects of the life of new generation, including their consumer habits. Considering that half of the capable for work population is from this generation, they are shaping the market today with their purchasing decisions. Their preferences regarding what they will put in their consumer basket significantly affect the supply and demand of almost all goods and services.

Members of the new generation have grown up and they are growing up in a society in which the number of available media is constantly increasing. For every piece of information they want to find, there are many sources available to them. A Goldman Sachs study (2015) showed that as many as 57% of them compare prices online while they are still in store. Before they arrive at the checkout, they can compare the price of the same product in several competing retail chains in a few clicks. Based on that, they will decide where it pays off to buy that product. For the first time, consumers do not have only the information that companies provide them. Members of the new generation can easily check, exchange and compare this information. Being informed gives them the bargaining power of consumers that no generation before them has had. Research has shown that members of the new generation are the most relaxed and make decisions most easily when shopping online. It is possible that they are influenced by the paradox of choice, and that they

are calmest when they have enough time behind the screen to think about the next investment.

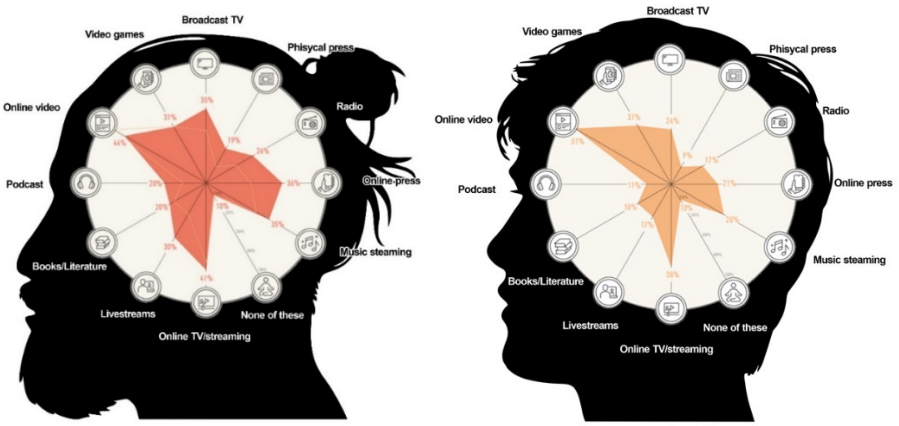


Figure 4: Media consumption during COVID-19 – GenY and GenZ
Source: https://www.visualcapitalist.com/media-consumption-covid-19/(18.8.2020)

From the very beginning of the pandemic, research about the moods and habits of young people followed the changes that came along. One of the first and most prominent changes is the increased presence in the digital world. (Girls With Impact, 2020) This change was expected because this is how young people fulfilled their daily free time. Additional free time and quarantine have led to increased viewing of online videos in all forms, listening to music and playing video games. (GWI4, 2020) Many platforms that provide this type of service have gained many new users, the most prominent being YouTube / YouTube Premium. Netflix, Facebook, Instagram, TikTok, Streaming music, Hulu, Amazon Prime, Disney +. (YPulse, Mar 2020) Even though social networking apps like Snapchat and Facebook are enjoying increasing popularity, the interface and algorithms of TikTok and Instagram provide content that is consistent, interesting, and ever-changing, making it much more interesting to new generations. (Wu , 2020)

The most outstanding changes:

- The virtual dimension has become an integral part of their daily work / teaching life, and has led to the improvement of habits such as online entertainment, shopping and food delivery. McKinsey & Company researches show that it is more consumed digital content, digital news coverage (Allas, Chinn, Sjatil & Zimmerman, 2020), young people buy more online (McKinsey & Company, 2020), they find it easier to opt for new

brands and focus on domestic products. (McKinsey & Company, 2020) About 40 to 60% of surveyed consumers, who have adopted new digital solutions, intend to continue to apply them. When it comes to online shopping in the USA, it has been proven that members of GenY and GenZ, and those with higher incomes, have largely switched to this type of shopping. (McKinsey & Company, 2020) This finding suggests the need to adopt e-commerce as an integral part of doing business even after the crisis period has passed. (Diebner, Silliman, Ungerman & Vancauwenberghe, 2020) Customers, especially from the younger generations (GenY and GenZ) are no longer just passive consumers of what is offered - they often buy from those companies that have proven to be socially responsible (64%). (Diebner, Silliman, Ungerman & Vancauwenberghe, 2020) The same elements to which attention is today paid when attracting young talents through creating an employer brand (Mamula Nikolić & Nećak, 2020) influence also the formation of attitudes towards shopping among customers, so focusing on customer experience is a strategy which should be adopted during the period of recession. ( Diebner, Silliman, Ungerman & Vancauwenberghe, 2020)

- There is an increased focus on health, well-being and sustainability. They are increasingly inclined to accept a healthy routine and adopt more ethical choices. According to a Deloitte survey (Deloitte, 2020), 39% of them are concerned about mental and physical health. Despite the pandemic, 35% of them are still interested in the natural environment. Moreover, according to a GlobalWebIndex survey (GWI2, 2020), 64% of GenZ and 63% of GenY are willing to pay more for an "environmentally friendly" product. Brands that emphasize health and well-being could prevail among younger consumers.
- Shopping is more thoughtful by focusing on the most important things. GenZ and GenY pay attention more than ever to what they buy. They limit their costs to the really necessary ones, delaying large investments. They take a more moderate, less impulsive stand and spend money more carefully. As young people will be more cautious in spending, they will increasingly seek greater value in products and services. Brands should review their pricing strategies or find ways to add value to existing products.
- Young consumers value social and environmental issues highly, and during the pandemic their expectations concerning brands only increased. At the beginning of the COVID-19 pandemic, few brands reacted responsibly and addressed their consumers regarding how to behave with regard to the pandemic, thus gaining or further strengthening trust. From adapting physical facilities to the pandemic and highlighting online stores through

various discounts, to increased Internet activity through campaigns related to the current situation, they would send support in the form of a message that we are all in this together. The Kantar survey, which included 35,000 respondents, showed that 80% of respondents want to see companies and brands think about their employees, 78% of respondents think that companies and brands should help them cope with everyday life in unexpected conditions, 75% of respondents think that companies and brands need to inform consumers about what measures they are taking in a crisis. (Kantar, 2020) Respondents expect from brands explicit evidence of support for consumers, leaders, and organizations active in a pandemic crisis. Adapting the way of advertising brands has met a very positive attitude of young people, where 46% strongly approve and support the coronavirus-focused way of marketing. (GWI4, 2020) They have most strongly supported advertising that contains practical tips and information for easier coping with new circumstances (64%) as well as contacting customers via e-mail to inform them about the measures taken during the pandemic (45%). (GWI-W2, 2020) Respect for the current situation through various activities of the brands encounters positive reactions and attracts the attention of young people who more and more want and seek authentic contact.

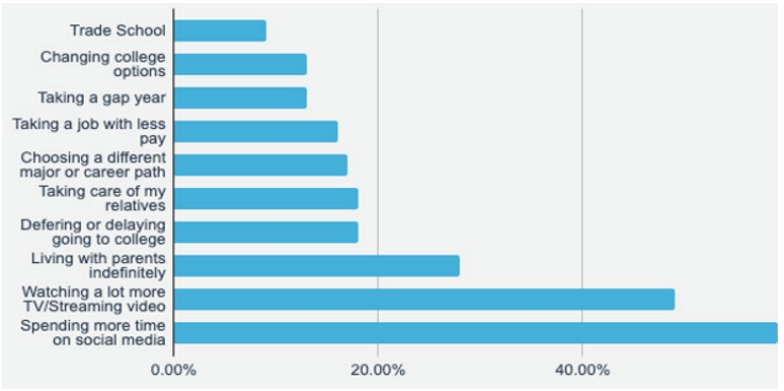


Figure 5. Influence of Covid-19 on GenZ
Source: Girls With Impact,2020

## 5. CHANGES IN THE AREAS OF EDUCATION AND WORK

Months of living in the new reality have significantly influenced the views of young people on the issue of education and work. The new situation has caused unpleasant changes in everyday life. Many young people strive to lay the foundations of their careers in the rapidly evolving economic, cultural and political fields. Most GenZ are still in the education system while most GenY are in the early stages of their careers. GenZ has struggled with school closures and changes in way of schooling, and GenY is facing the stress of working from home, while caring for its families and trying to educate children at home. Uncertainty, instability and self-doubt were common themes in the lives of young people during 2020, as their education and career plans changed significantly.

For a large number of students, the changes taking place in colleges due to the pandemic have raised important questions about the value of online education. Two-thirds of students believe that schools do not provide good support for starting their careers. The pandemic creates big challenges for students in their professional development. Approximately 1 in 5 current students says that COVID-19 significantly worsened their career research opportunities, and 45% experienced a mild negative impact. (Strada, 2020)

Many students are unsure of the value of their education. Among current students, only half believe that their education will be worth the cost. The value of education and career connections are closely linked. A survey conducted by SimpsonScarborough (SimpsonScarborough, 2020) found that 40% of new freshmen say they are likely / very likely to change their mind about the colleges they chose to attend. Changes in the economy have led many to adjust their decisions regarding future careers.

In June 2020, the Pew Research Center (Kochhar, 2020) found that the USA unemployment rate had risen during three months of a pandemic more than during two years of the Great Recession. At the same time, a study by the University of Tempe, conducted on 38,000 individuals, showed that two out of three students who were employed before the pandemic now feel great economic insecurity. Insecurity stems from job losses, reduced working hours, and wage cuts (The Hope Center, 2020).

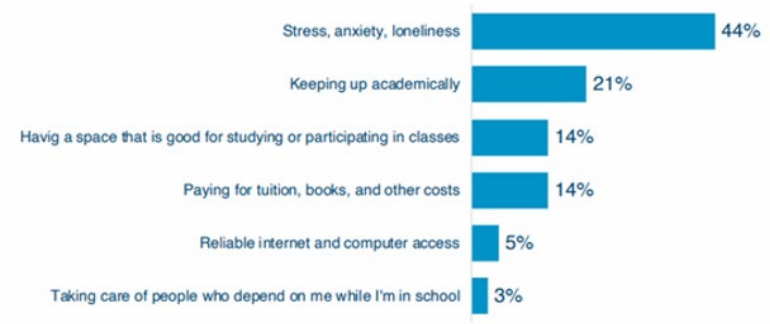


Figure 6. The biggest challenges for young people
Source:Strada- College Pulse survey, September 2020

## 6. MENTAL STATE AND SOCIAL ACTIVITIES

Economic difficulties are not the only challenges facing these generations. Switching to virtual reality was not a big problem at the beginning, but it caused significant changes over time. Although GenZ and GenY are known as the first generations to digitally build friendships, the importance of personal communication has become apparent with the shift to longer stays at home. One of the biggest challenges young people face is stress, anxiety, and loneliness (Strada, 2020) Compared to all other generations, GenZ is most concerned about their mental state (GWI8, 2020).

Social media has played an important role in combating undesirable mental states, which intensified during the pandemic. They also carry the most responsibility towards those who are concerned about their mental health (40%) and even lag behind health workers and governments when it comes to providing more support. This could be a result of the fact that social platforms are widely used as sources of news, which unfortunately has to some extent heightened irrational fear.

The purpose and strategy of brand positioning begins with insight of the person, not insight of the category. Brands should connect their purpose with consumer values and human needs. How has COVID-19 changed the emotional imperatives that influence brand choice? It is important to recognize the importance of investing in the community instead in the profit. It is of vital importance for brands to meet customers "where they live". After a short time of adaptation, many activities that moved to the virtual world accelerated and initiated a more active life of young people at the moment when the changes were biggest. One of the most important messages that was supposed to reach them on an emotional level, is that we are all in this new

and insecure world together. Creation of a sense of belonging is very important for GenZ and GenY, because they are young people who need support.

In addition to mental health, the social injustices that have taken place in the world have led to an increase in concerns about justice, values and respect for diversity in society. There has been a significant increase in the number of people concerned about racism due to the #BlackLivesMatter protests and online campaigns. After these events, the activity of young people on networks on issues of various forms of injustice has increased. Acceptance of diversity and inclusion for young people means more than racial or ethnic identities themselves. (Tallo, 2020)

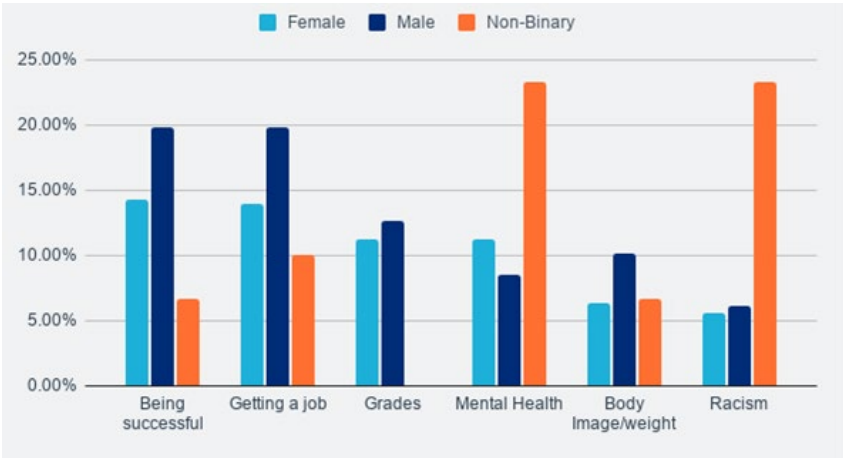


Figure 7. Main Concerns for GenZ
Source: Girls With Impact, 2020

The fierce outrage of younger consumers is contrasted with the views shown by GenX and Boomers. Of these, only 39% prefer brands that officially and clearly oppose racism, compared to 73% of Gen Z and Gen Y. The majority (52%) of Gen Z say the Black Lives Matter movement has had a big impact on their worldview. (Morning Consult, 2020)

Young people spontaneously pursue online activism, changing the way they support ideas and showing that digital activity can make a difference. For years, GenZ and GenY have directly challenged stereotypes that they are apathetic and disinterested, by organizing and participating in big global protests in order to share their beliefs and passions about climate change, gun control, sexual and racial injustice. Also, many demonstrations in the streets, which marked the previous year, were organized by these generations. In the USA, many young people have stated that

live protests and the risk they carry during a pandemic are very important because racism is still "alive and well" in their country. The Ypulse survey (Ypulse 2020) showed that 55% of young people took part in the Black Lives Matter protests or at least spread awareness about the problem, while 72% believe that the hashtag movement has the power to change the world. For young people, coming to the protest speaks as much as supporting it through social networks. GenZ and GenY have completely changed activism, bringing it to where they maybe feel most comfortable, and that is online. They used the power of social networks and digital connections to create serious changes. Although some still believe that digital activism (so-called "slacktivism") is lazy, a survey of trends from 2015 showed that 62% of young people believe that their voice is more effective when it is online and find various ways to implement it. In addition to #BlackLivesMatter, there were online protests with the hashtag #DigitalStrike and #ClimateStrikeOnline, which drew attention to the urgency of climate change. In addition to standard social networks, mass Zoom meetings were organized. Another YPulse study (YPulse, Apr 2020) found that 71% of GenZ and GenY agreed that climate change was an immediate threat. The current state of the pandemic has not changed their position on the urgency of this problem.

These generations also use hashtags to invite brands and pressure them to get involved. Movements such as #15PercentPledge and #PullUpOrShutUp were used to demand certain changes from industries and companies. Millennials in Achieve research showed that they do not trust the government that it will correct injustices in the country. Instead, 70% put more faith in themselves to create the kind of change they want to see, with one-third believing it could have a big impact and another third a moderate one. (Achieve, 2020)

GenZ led numerous demonstrations, such as the protest against arms March for Our Lives and the climate change movement. As many as 62% of the nearly 39,000 respondents said they were willing to be arrested during a peaceful protest in support of racial equality. (Hoffower, 2020) As a result of their views, they sign petitions, volunteer for a purpose, connect to social media platforms and act in their circles as ways to encourage change. Their struggles have a wide range of interests, from issues of education, health and employment, to issues of economics and politics. The situation brought by the pandemic only intensified the activism of the youth even more.

## CONCLUSION

New generations get informed about products and services with the help of digital technologies and mostly buy online. All these habits affect how organizations communicate with these generations today. GenY's consumer habits have changed both in Serbia and in the world. Products and services are not the only elements of the sales chain that have had to be adapted. As a must, marketing activities also adapt to the needs and lifestyle of the new generation. Above all, the focus and budget are shifting from offline marketing to online activities.

Marketing tools that require from companies themselves to have a disruptive way of thinking in order to efficiently and effectively approach new generations are the result of considering and analyzing how the new generations consume products and media. As they themselves grew up in the digital and visual age with technological devices, they expect different forms of marketing too. One of the best ways to create authentic messages is to create live content. Some of the interesting ways in which brands can influence this target group are also (Pruit, 2017):

Livestreaming on social networks and similar platforms. Members of this generation have set a new era of live content that changes the way of entertainment, and members of generation Z themselves follow it and create it. According to Ypuls research, most GenZs "live stream" with their friends every day or create live content for the platforms in which they are included, and three out of four said that they for sure watch live content of influencers and brands they follow on social networks for an hour. For them, being live means being authentic and creative, it is the way they manage to keep an interest in the content they want to follow.

Personalization of content – memebers of new genarations do not want to spend a lot of time on searching for interesting content. They want the media they use to offer it based on their searches done in the past. The best example of this is Netflix's recommendation of movies and series based on previously watched content (Because you watched) or Twitch, a platform through which viewers can watch other people play games live - which is one of the newer trends used on domestic YouTube scene in Serbia too. Fot this reason they don't have on/line security issue.

Strategic marketing with the help of influencers - Influencers in the service of marketing are a lesson already learned that a large number of brands successfully apply. However, with the influence of new social networks, the approach to marketing through influencers will also change. In order to successfully communicate with the new generation, brands will need to look for influencers compatible to them

comparing the age and the most popular social network for counsumers of certain age.

Constant innovation - loyalty is not a common behaviour for theese generations. As they quickly lose focus and attention unless they are soon offered something new, better than the previous one, they will go to the competitors without thinking. Precisely for that reason, the brands are under pressure to constantly research and innovate.

Collaborations and co-creations - members of this generation expect companies to involve them in their creative processes: research, product development and innovation, as well as marketing in general. Allow them to be part of your team and they will be able to give you in return.

In order for companies and brands to succeed in creating a campaign that will truly secure and attract the attention of members of this generation, they must adhere to several strategic principles in all fields and channels of communication.

The rules we need to follow when creating campaigns that target this generation are (Pruit, 2017):

- Be simple and have "digestible" content;
- Focusing on extensive visual communication with a diverse target group;
- Be userfriendly (especually with control over settings);
- Inspire changes and social endeavors;
- Feed their curiosity and if possible encouraging entrepreneurial spirit;
- Connect them with each other by content and go live as much as possible;
- Be educational and give didactic content.

With changes in consumer behavior, enterprises should adapt to different consumer preferences (health and hygiene are at the top of the priority list) and explore ways in which consumers get their information, what and where they buy and how they experience a product or service and what consumer experience they have (customer experience & journey).

Medium and small enterprises with a strategic marketing orientation, aware of customer needs in a turbulent environment, are more able to be innovative and have more chances to be competitive, to survive and to be successful. Doing business during the pandemic has opened new opportunities for business renewal through e-commerce. Based on the insight into the results of the research, which confirms that consumers` adoption of new technologies is accelerated, it is recommended to improve e-commerce in Serbia. The processes of innovation and digital

transformation as a whole have been significantly accelerated, and they represent a condition for work and opportunity of MSMEs in Serbia, in the future new normal. (Mamula Nikolić, Perčić & Nećak, 2020)

The limitation of the work is that there is no data and analysis of the behavior of the new generation in Serbia, so the recommendation is to do an analysis of the impact of COVID-19 on the behavior of the new generation during 2021.

**REFERENCES:**


1. Achieve (2020). Research Shows Millennials See Activism in Different Way Than Previous Generations, https://www.achievecauses.com/research-shows-millennials-see-activism-in-different-way-than-previous-generations
2. Allas, T., Chinn, D., Sjatil, P. E. &d Zimmerman, W. (2020) Well-being in Europe: Addressing the high cost of COVID-19 on life satisfaction. McKinsey & Company. Retrieved from https://www.mckinsey.com/~/media/McKinsey/Featured%20Insights/Europe/Well%20being%20in%20Europe%20Addressing%20the%20high%20cost%20of%20COVID%2019%20on%20life%20satisfaction/Well-being-in-Europe-Addressing-the-high-cost-of-COVID-19-on-life-satisfaction.pdf
3. Anderson, M. & Jiang. J. (2018). Teens, Social Media & Technology 2018. Pew Research Center. Retrieved fromhttps://www.pewresearch.org/internet/2018/05/31/teens-social-media-technology-2018/
4. Deloitte. (2020). The Deloitte Global Millennial Survey 2020. Delloite. Retrieved from https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html
5. Deloitte. (2019). Insights A Generation Disrupted—2019 Deloitte Global Millennial Survey. Deloitte. Retrieved from https://www2.deloitte.com/global/en/pages/about-deloitte/articles/millennialsurvey.html.
6. Diebner, R., Silliman, E., Ungerman, K. & Vancauwenberghe, M. (2020, April 2). Adapting customer experience in the time of coronavirus. McKinsey & Company. Retrieved from https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/adapting-customer-experience-in-the-time-of-coronavirus
7. Fabius, V., Kohli, S., Björn T. & Moulvad Veranen, S. (2020). How COVID-19 is changing consumer behavior—now and forever. McKinsey & Company. Retrieved from https://www.mckinsey.com/business-functions/marketing-and-sales/our-insights/meet-the-next-normal-consumer

8. Girls with impact (2020). What is inside the minds of GenZ during Covid?,Report 20'-21'. https://www.girlswithimpact.org/news/press-release-whats-inside-the-minds-of-genz-during-covid
9. GlobalWebIndex research (2018).
10. Goldman Saks research (2015) https://www.goldmansachs.com/insights/pages/macroeconomic-insights-folder/what-if-i-told-you/report.pdf
11. GWI8 (April 2020). Health, Coronavirus Research, Series 8; https://covid-consumer.com/wp-content/uploads/2020/05/GWI-Coronavirus-Research-Health-Release-8-23-April-2020.pdf
12. GWI4 (April 2020). Media Consumption and Sport, Coronavirus Research, Series 4; https://www.globalwebindex.com/hubfs/1.%20Coronavirus%20Research%20PDFs/GWI%20coronavirus%20findings%20April%202020%20-%20Media%20Consumption%20(Release%204).pdf
13. GWI2 (April 2020). Multi-market research, Coronavirus Research, Wave 2; https://www.globalwebindex.com/hubfs/1.%20Coronavirus%20Research%20PDFs/GWI%20coronavirus%20findings%20April%202020%20-%20Multi-Market%20Research%20(Release%205).pdf
14. Hoffower, H. (December 2020). Meet post-pandemic Gen Z, the most unemployed generation, now in danger of repeating millennials' struggles, https://www.businessinsider.com/how-pandemic-protests-politics-affected-gen-z-most-unemployed-recession-2020-12#while-gen-z-has-grappled-with-how-the-government-has-handled-social-injustice-issues-its-pushed-the-generation-to-the-front-lines-of-activism-9
15. Kantar Research 2020. https://iabeurope.eu/wp-content/uploads/2020/05/Kantar_Covid-19-Barometer_IAB-Europe-Webinar-Presentation_Final.pdf
16. Kochhar, R, (2020). Unemployment rose higher in three months of COVID-19 than it did in two years of the Great Recession, Pew Research Center, https://www.pewresearch.org/fact-tank/2020/06/11/unemployment-rose-higher-in-three-months-of-covid-19-than-it-did-in-two-years-of-the-great-recession/
17. Luo, H. & Galasso, A. - Harvard Business School (2020). The One Good ThingCaused by COVID-19: Innovation. https://hbswk.hbs.edu/item/the-one-good-thing-caused-by-covid-19-innovation (1.07.2020).
18. Mamula Nikolić, T., Perčić, K. & Nećak, M. (2020). How to guide MSMEs through challenging times: a survey on consumer behavior habits in COVID-19 crisis. The XII International Scientific Conference Emerging Trends in Business

Economics: Towards Competitiveness, Digitalization and Financial Innovationand.
19. Mamula Nikolić, T., Popović-Pantić, S, & Muller I. (2020). The Impact of ICT and Digitalization on Consumer Purchase Behaviour of Millennials as emerging Economic and Social Force–the Case of Serbia. Lechman, E. & Popowska, M. (Eds.).Society and Technology, Opportunities and Challenges, ICT and social development, Conceptual considerations, Society and Technology. Virtual Conference in Belgrade, Serbia.
20. Mamula Nikolić T., Perić. N., & Vujić N. (2019). The Contribution of Innovative Leadership Style as an Answer to Global and Business Changes. Access to Success QAS, 20(170), pp. 9-14.
21. Mamula T. & Ćoso D. (2015). Millennials' way of e-learning and communication in digital era. The Sixth International Conference on e-Learning (eLearning-2015), Belgrade, Serbia, pp. 22-23.
22. Morning consult – Poll (2020). Brands black lives matter response poll, https://morningconsult.com/2020/06/02/brands-black-lives-matter-response-poll/
23. Paunovic, I., Dressler, M., Mamula Nikolić, T. & Popović-Pantić, S. (2020). Developing a competitive and sustainable destination of the future: clusters and predictors of successful national-level destination governance across destination life-cycle, Sustainability 2020, Sustainability 2020, 12(10), pp. 4066, https://www.mdpi.com/2071-1050/12/10/4066
24. Perić, N., Mamula Nikolić,T. & Delić, T. (2021). Analysis of Attitudes of GenZ Toward Media and Consumption: The Region of Balkans, January 2021, Marketing, 3(51), pp. 210-218, DOI: 10.5937/markt2003210P
25. Perčić, K. & Mamula Nikolić, T. (2020). Innovation in the working environment as a way to overcome the crisis and create new consumer habits, 2020, in book: INNOVATION AS AN INITIATOR OF THE DEVELOPMENT "INNOVATIONS IN THE FUNCTION OF DEVELOPMENT" Edition: MEFKON 2020.
26. Prensky, M. (2001). Digital Natives, Digital Immigrants. On the Horizon 9(5).
27. Simpson, S. (2020). The Impact of COVID-19 on Higher Education, National Student Survey, Pt. III, https://impact.simpsonscarborough.com/covid/
28. Pruit, S. (2017). 10 Characteristics of Generation Z., http://www.shanepruitt.com/10-characteristics-generation-z/
29. Stein, J. (2013). Millennials: The Me Me Me Generation. Time. Retrieved from https://time.com/247/millennials-the-me-me-me-generation/
30. Strada-College Pulse Research (September 2020). COVID-19's Impact on Career Development,Strada education,https://www.stradaeducation.org/wp-content/uploads/2020/10/Public-Viewpoint-Charts-October-27-2020.pdf

31. Strada-Research (2020). Student Viewpoint: COVID-19 and the Value of College. https://www.stradaeducation.org/wp-content/uploads/2020/10/Public-Viewpoint-Charts-October-27-2020.pdf
32. Tallo - Survey (October 2020). The Survey is In: Gen Z Demands Diversity and Inclusion Strategy, https://tallo.com/blog/genz-demands-diversity-inclusion-strategy/
33. Taylor & Francis Books. (2019). Is social media activism just a millennial fad? [video file] YouTube. Retrieved from https://www.youtube.com/watch?v=Rw7ExTcO-14
34. The Hope Center – Research. (2020). New evidence on basic needs insecurity and student well-being, Temple University, https://hope4college.com/wp-content/uploads/2020/06/Hopecenter_RealCollegeDuringthePandemic.pdf
35. Trifecta Research. (2015). https://trifectaresearch.com/wp-content/uploads/2015/09/Generation-Z-Sample-Trifecta-Research-Deliverable.pdf
36. Visual Capitalist. (2020). https://www.visualcapitalist.com/media-consumption-covid-19/ (18.8.2020)
37. Vlašić, G., Gugić, A., Kesić, A. & Keleminić, K. (2020). Kriza kao dio poslovanja. Institut za Inovacije. Retrieved from 14. https://innovation-institute.eu/kriza-kao-dio-poslovanja/W.C. Kim & R. Mauborgne (1997). Value Innovation: The Strategic Logic of High Growth. Harvard Business Review, 75, January–February 1997c, 102–112.
38. Von Krogh, G., Kucukkeles, B. & Ben-Menahem, S. M. (2020). Lessons in Rapid Innovation From the COVID-19 Pandemic. MIT. Retrieved from https://sloanreview.mit.edu/article/lessons-in-rapid-innovation-from-the-covid-19-pandemic/ (03.07.2020.)
39. YPulse (2020). One Chart That Shows How Coronavirus Has Already Impacted Gen Z & Millennials' Media Use; https://www.ypulse.com/article/2020/03/19/one-chart-that-shows-how-coronavirus-has-already-impacted-gen-z-millennials-media-use/
40. YPulse. (2020).Climate Change Will Still Matter to Gen Z & Millennials – Here's How We Know, https://www.ypulse.com/article/2020/04/22/climate-change-will-still-matter-to-gen-z-millennials-heres-how-we-know/
41. YPulse. (2020). Views on America Report; Gen Z and Millennial research, trends, and insights, https://www.ypulse.com/report/2020/07/01/view-on-america/
42. Wu, A. (2020). Coronavirus is a Gen Z problem, Medium; https://medium.com/campus-insights/coronavirus-is-a-gen-z-problem-a5553746bdfa

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# IMPACT OF THE COVID-19 PANDEMIC ON REDUCING ENVIRONMENTAL POLLUTION IN AFRICA

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***Abstract:*** *The COVID-19 pandemic is now wreaking havoc around the globe. Like other related pandemics such as Ebola and SARS, it is thought to have started from man's encroachment on biodiversity and habitat. Many cities in Africa have been placed on absolute lockdown as a result of the pandemic. The imposition has resulted in improved air quality around the world, with lower levels of N2O, CO2, and noise pollution. The Coronavirus disease (COVID-19) has proven to scientists and conservationists that anthropogenic activities cause changes in the global ecosystem, resulting in increased health hazards. It has also shown the world's population's vulnerabilities to health care, the economy, and food security. Again, the virus has wreaked havoc on Africa, revealing the need for action in a variety of socioeconomic areas. It highlighted the need for social security, food security, safe drinking water, and improved hygiene, as well as increased agricultural and educational investment.*

***Keywords:*** *COVID-19, pandemic, environmental change, air pollution, Africa*

## INTRODUCTION

The new COVID-19, also known as Coronavirus illness, is a virus that infects people by attacking the respiratory system, causing breathing difficulties and, in some cases, death. It all began in December 2019 in faraway Wuhan, China, and quickly spread to other corners of the globe. To stop it spreading, many countries have ordered total lock down, including Africa. However, such a step is having a significant negative impact on the economy, implying a future of austerity (Lucchese and Pianta, 2020). According to Lucchese and Pianta (2020), the epidemic will be followed by a catastrophic and unprecedented economic crisis.

The COVID-19 public health emergency is unprecedented in lifetimes and has devastating economic and social ramifications. The pandemic's global scale have highlighted important problems that demand a coordinated research to prevent the disease's spread. Identifying important adaptable conservation factors that may subsidize to the severity of health consequences in people with COVID-19 is a critical public health goal.

Despite strong assessments of the expected economic crisis and pandemic spread (Bai et al., 2020; Lucchese and Pianta, 2020; WHO, 2020b), little progress has been made in the domain of pandemic preparedness. The impact of the pandemic on Africa's land usage (agricultural, forest and savanna ecosystems, water), education, and food security. The crisis will have a substantial influence on attaining the SDGs Agenda 2030 targets of zero hunger (Sumner et al., 2020), clean water and sanitation, climate action, and partnerships for the goals, to name a few.

The pandemic has revealed the flaws in global health and welfare systems, as well as the lack of global regulations and coordination on health protection, as evidenced by the animal markets in China and the speed with which an epidemic was addressed (Lucchese and Pianta, 2020). They went on to say that dealing with the impending problems necessitates revising globalization's norms so that health, welfare, labor rights, and the environment are all safeguarded by international standards (Cooper, 2020). The adoption of norms or conventions, on the other hand, may be ineffective unless there is a strong desire to close the gap between the haves and the have-nots. The first step should be to put an end to all forms of exploitation of the poor people and the poor nations.

Nonetheless, poor countries must prepare for the issues that may arise following the pandemic. The reality is that the world is changing, and conservationists (Corletta et al. 2020), as well as climate and environmental experts, must be prepared to respond. Similarly, in terms of attitudinal shift to land use/environmental change

issues and environmental care, academics/researchers, education administrators, world leaders, and, of course, every individual Despite the fact that still developing, there is a significant overlap in the reasons of mortality in COVID-19 patients and the illnesses caused and/or exacerbated by long-term contact to fine particulate substance (PM2.5). PM2.5 is made up of microscopic particles or liquid droplets that are small enough to be breathed and cause major health issues. Air pollution has been identified as a risk factor for total and cardiovascular disease mortality by the Global Burden of Disease Study, and it is thought to have contributed to roughly 5 million premature deaths worldwide in 2017.

## 1. THE COVID-19 PANDEMIC AFRICA'S LESSONS AND THE WAY FORWARD.

Agricultural expansion and population growth continue to be the primary drivers of land-use and environmental change (Tilman et al., 2001; Foley et al., 2011; Rohr et al., 2019; Fears et al., 2019; Miles, 2020) [16, 21], Agriculture and human settlement are encroaching on biodiversity habitat, which has been related to various epidemics in recent years, including the current Covid-19, which is linked to wild animal markets in Wuhan, China (Corletta et al., 2020) [5]. (Alexandratos and Bruinsma, 2012) [22].

Agriculture currently occupies half of the world's land and consumes more than two- thirds of its freshwater. The issue is linked because, despite agricultural progress, more than a billion people worldwide remain malnourished, with Africa accounting for a larger share (Myers et al., 2015; WHO, 2018; Rohr et al., 2019) [23, 24] According to the United Nations, the world's population will exceed 11 billion by 2100, with Africa accounting for 4.4 billion (Millington and Cleland, 2017; UN, 2017) (25, 26) To achieve the SDG target of poverty eradication in Africa, a shift in mindset and method is required. Agricultural intensification, rather than expansion, necessitates increasing investment in agriculture (Foley et al., 2011; WHO, 2018).

As a result, governments across Africa should work together to increase agricultural budgets and investment in order to encourage conservation and agricultural intensification. Feeding the world's 4.4 billion people and managing infectious illnesses are difficult tasks. Currently, tropical developing countries experience disproportionate intensification and expansion of agriculture (Tilman et al., 2001; Gibbs et al., 2010; Rohr et al., 2019) [16, 25 ], with infectious disease, accounting for 75 percent of deaths (Lozano et al., 2012; Knutie et al., 2017) [27, 28].

However, by limiting agricultural growth into Africa's rich savanna and rainforest areas, the continent has the ability to stabilize ecosystems. Africa's rich ecosystem if saved from massive destruction could be vital to the ecosystem and environmental quality restoration and avert health issues like the Ebola experience a few years ago. Prospects lie in nature-based solutions (Cooper, 2020) [9].

## 2. SENSITIVITY ANALYSES

As a result, governments across Africa should work together to increase agricultural budgets and investment in order to encourage conservation and agricultural intensification. Feeding the world's 4.4 billion people and managing infectious illnesses are difficult tasks. Currently, tropical developing countries experience disproportionate intensification and expansion of agriculture (Tilman et al., 2001; Gibbs et al., 2010; Rohr et al., 2019) [16, 25, 15], with infectious disease, accounting for 75 percent of deaths (Lozano et al., 2012; Knutie et al., 2017) [27, 28]. However, by limiting agricultural growth into Africa's rich savanna and rainforest areas, the continent has the ability to stabilize ecosystems. By examining different model specifications and fitting models stratified by county urban-rural status, we were able to assess sensitivity to such decisions. In the Supplementary Materials, you'll find more information about the sensitivity analyses and their outcomes. Quarantine, which has reduced production, farming activities, sale, and access to farm inputs, may result in starvation following the epidemic.

Our research examined data from 3,087 villages, 1,799 (58.3%) of which had no COVID19 demises at the time of study. Up until April 22, 2020, all COVID 19 death counts (a total of 45,817 deaths) are added together. The county-by-county variation in long-term average PM2.5 exposure and COVID-19 death rates (per 1 million population). COVID-19 fatality rates appear to be greater in the mid- and Upper Midwest, according on visual inspection.

## 3. EVIDENCE OF, OR PROBABLE IMPACTS ON THE ENVIRONMENT.

Though it's difficult to say for sure at this point, there are claims in Africa pollution levels have decreased as a result of the lockdown's limited activity. Pollution levels in Africa have all decreased (Corletta et al., 2020; Zambrano Monserrate et al., 2020) [5, 10]. Despite the fact that there has been limited study, such as no fieldwork or limited laboratory tests, there have been reports of reduced human demands on natural ecosystems, cleaner air and water, and wildlife regaining formerly prohibited areas (Corletta et al., 2020) [5]. The cancellation of climate change and environmental scientists' gatherings and conferences is another immediate effect. While internet conferencing is popular, its drawbacks cannot be overstated when contrasted to the interactions and networking opportunities provided by in-person conferences (Corletta et al., 2020) [5], which are especially beneficial to early career researchers.

Due of the epidemic, key intergovernmental and UN climate conferences have been canceled. These cancellations have ramifications for future efforts to address climate change issues (Corlett et al., 2020) [5]. In several towns, trash management and recycling have also been suspended (Zambrano-Monserrate et al., 2020) [10]. Due to quarantine procedures and increasing usage of protective equipment, there is a rise in the output of home and hospital waste (ZambranoMonserrate et al., 2020) [10]. In some places, waste water treatment is also impacted, such as the growing usage of chlorine for treatment in Ghana (Zambrano-Monserrate et al., 2020) [10] as well as the consequences for one's health.

On the plus side, satellite photos (Figure 1) have showed improved air quality in several cities due to reduced pollution (Corletta et al., 2020; NASA, 2020) [5, 11]. Many cities have experienced a decline in CO2 levels (Metra et al., 2020) [12]. Though this drop in pollution levels will be short-lived (Analytical, 2020) [13], it serves as a reminder of how anthropogenic activities have deteriorated the natural environment and driven gas and aerosol emissions into the sky.

Despite the pandemic's tragic consequences, it served as proof to environmentalists and conservationists that human activity is harming life on Earth. As a result, additional money for environmental change scientists is needed for study, conservation, and environmental resource preservation. In several sites, there has been a visible reduction in pressure on previously overexploited beaches, as well as a reduction in noise pollution (Zambrano-Monserrate et al., 2020) [10]. With the installation of lockdown, the buzzing noise of Lagos city, as well as noise from trucks,

airplanes, and businesses, all vanished. Figure 1. N2O concentration across eastern before the quarantine and during the quarantine.

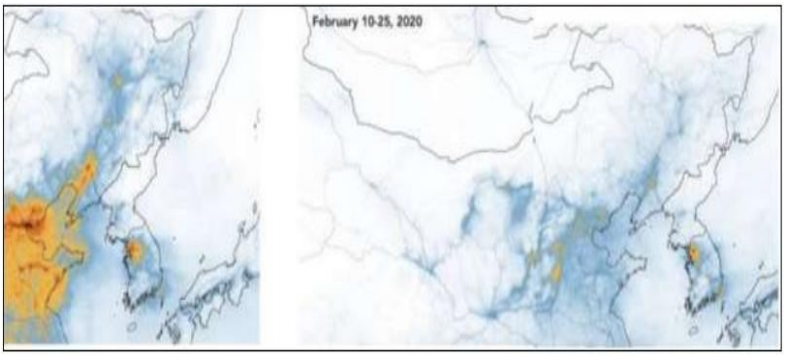


Figure 1
Source: Tropospheric Monitoring Instrument on ESA's Sentinel1-5 satellite, NASA Earth Observatory images by Joshua Stevens.

## 4. RISK FACTORS AND COVID-19 IN AFRICA.

Africa lags behind other continents in terms of underlying medical issues, such as no communicable diseases (NCD).The transmission of communicable illnesses is influenced by environmental and population factors. Population demographics (age, cardiovascular, hypertension, obesity, respiratory, diabetes, cancer, and HIV/SIDA diseases) and environmental (air pollution, temperature, and humidity) variables have recently been studied to determine their likely association with COVID-19. With a median age of 18 years, Africa is the world's youngest continent [9, 11].

According to the most recent census (2017), this may help to reduce the number of COVID-19 cases. Adults, primarily the elderly, with major underlying medical issues may be at a higher risk of developing more serious illness [13]. In Mozambique, older individuals make up a smaller proportion of the population, accounting for 4.6 percent of the population, followed by ages 15-45 years (38.5 %), and ages 0-15 years (46.7 %) [12].The number of COVID-19 cases with severe symptoms is expected to be tempered by this population.

People with cardiovascular disease (heart), hypertension, respiratory problems, obesity, cancer, and diabetes are known to be more susceptible to SARS-CoV-2/COVID-19 infection and death. Furthermore, NCDs are quickly growing in Sub-Saharan Africa, increasing the likelihood of COVID-19 severity [14]. According to a recent study, NCDs (mostly hypertension and diabetes) were responsible for 28% of

deaths in Africa [15], suggesting that cardiovascular deaths may continue to rise during the present COVID-19 epidemic.

## 5. BASED ON THE LITERATURE, THE POTENTIAL IMPACT ON ENVIRONMENTAL METRICS

Based on the literature, other than air pollution, the start will be to study the potential effects of COVID19 on various environmental indicators, this analysis is confirmed by officially announced government figures as shown below.

### 5.1. Surface and groundwater

This is primarily owing to the untreated discharge of extremely contaminated industrial and domestic wastewaters into its. Nile River is the country's principal supply, providing nearly all of the country's drinking and irrigation water (Mostafa, 2014). Nile River also meets around 65 percent of Egypt's industrial water needs (Abdel-Satar et al., 2017).

Because most Egyptian industries are not operating at full capacity, resulting in a decrease in wastewater effluent. For example, due to the SARS-CoV-2 pandemic, ready-made clothing production declined by around 8.9% in February 2020 compared to January 2020. (CAPMAS, 2020a). The Nile River's quality is also projected to improve as a result of the tourist ships' suspension from an activity that is the biggest cause of oil spills in the river.

All of Egypt's lakes have poor water quality as a result of absorbing partially or untreated industrial wastewater (Abd El-Hamid et al., 2020). Because it is connected to both the Rosetta and Damietta branches, pollution in the Mediterranean Sea is predicted to diminish. Because of the reduced number of ships. According to a report issued by the International Food Policy Research Institute (IFPRI), revenue from the Suez Canal is expected to drop by 15% during the pandemic (Breisinger et al., 2020).

### 5.2. Beaches

Egypt's coastline stretches for about 3500 kilometers, it can be found along several coastlines and are key natural capital assets for these communities. As a result, they must be safeguarded against overexploitation. They provide recreational

services. Some beaches in Egypt, such as the North Coast, Ain Sokhna, Alexandria, and Baltim, are polluted as a result of reckless behavior.

These beaches have reaped the most benefits from Egypt's containment efforts. Currently, making them appear cleaner and clearer. Many beaches around the world, including Barcelona (Spain), Acapulco (Mexico), and Salinas (Ecuador), have reported similar observations (Zambrano-Monserrate et al., 2020).

### 5.3. Environmental noise

Environmental noise is characterized as an unpleasant and detrimental produced by commercial. Environmental noise can trigger the hormones, which can lead to disorders like arteriosclerosis, hypertension, stroke, and myocardial infarction (Muzet, 2007).

Since the SARS-CoV-2 pandemic, Egypt's containment measures, particularly the curfew and quarantine, have pushed individuals to stay at home, reducing commercial,

industrial, and transportation activity. Official government pronouncements have validated this analysis, stating that the reduction in these activities reduced environmental noise by roughly 77% (Masrawy, 2020; Ahram online, 2020d).

### 5.4. Municipal and medical solid wastes

As a result of the curfew and "Stay at Home" campaign, Egypt's food consumption has grown since the outbreak of COVID-19. According to Google's Community Mobility Report. People who stay at home tend to overeat, resulting in an increase in organic solid waste output per capita. Due to COVID-19 transmission fears, Egypt has also seen a substantial increase (940%) in online purchasing (Nile FM, 2020), resulting in an increase natural or artificial wastes.

These wastes are now deemed dangerous. The possibility of SARS-CoV-2 spreading in recycling facilities is likewise a major concern around the world. To limit the spread of the virus, the United States has banned recycling activities in select cities (Zambrano- Monserrate et al., 2020). Even during the COVID-19 curfew, recycling plants in Egypt are operational. They are, however, employing fewer than half of their workforce, allowing employees with chronic illnesses or compromised immune systems to take time off and stay at home.

## 6. MATERIALS AND METHODS

During the COVID-19 lockdown period and the baseline period (2018–2020), the authors mostly relied on satellite monitoring to obtain measurements for the various air contaminants, for example, can be validated using space-borne radiometers on spatial scales of a few kilometers. Additionally, spectrometers can be used to identify nitrogen dioxide and other trace chemicals at the urban level.

Satellite used to identify areas with the highest concentrations of pollutants, as well as to predict imminent quality, the occasional of data generally provided by polar- orbiting, are all limitations connected with employing satellite technologies for air quality monitoring and analysis. As a result, combining with data from satellite sensors is often advised in order to acquire more precise and expand understanding.

### 6.1. Measurement of Nitrogen

Satellite equipment can detect NO2, sulfur dioxide, ozone (SO2), (CO) carbon monoxide and methane (CH4) in the atmosphere. Radiation from sun is calculated using these methods throughout a wide spectral range, from ultraviolet (UV) to infrared wavelengths. On July 15, 2004, the National Aeronautics and Space Administration (NASA) launched the Aura satellite, which is armed with (OMI) ozone monitoring instrument to track changes in air value in many shares of the world (NAS, 2020).

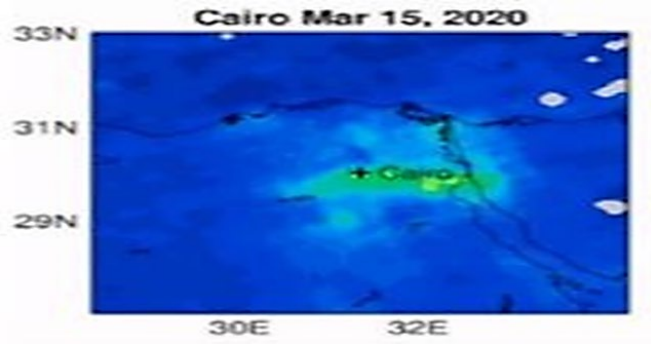


Figure 2. Cairo Mar 15, 2020

The O3 and CO concentration data over Africa was obtained using the Geospatial Interactive Online Visualization and Analysis Infrastructure (Giovanni). The NASA said that, Earth Sciences (GES) Information and Data Center created the

Giovanni web- based utility (DISC). The program provides researchers with over 1600 variables from satellite data, including concentrations of major air contaminants and other climatological factors.

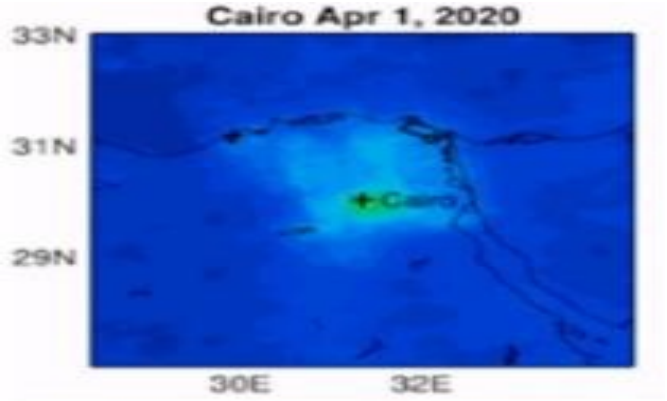


Figure 3. Cairo Apr 1, 2020

### 6.2. Absorbing aerosol index

On October 13, 2017, the European Space Agency (ESA) launched the satellite, equipped with a TROPO spherical monitoring device (TROPOMI) for the detection of NO2, SO2, CH4, CO and ozone (O3) levels at ambient levels. It can also calculate the value of AAI based on Riley's scattered wave transitions in the UV spectrum. TROPOMI is 13 times more accurate than NASA's OMI, which can provide a comprehensive daily map of the Earth's rays at 7 km 3.5. In this study, it is used to obtain AAI data for 2019 and 2020 in Egypt. No data before 2019.

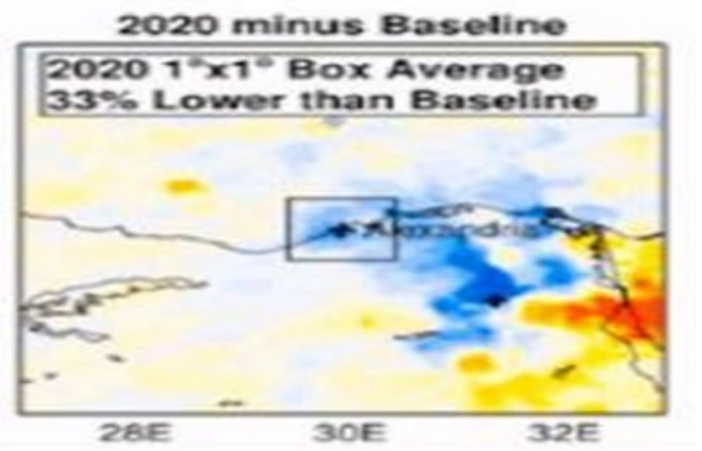

Figure 4. Minus Baseline 2020, European Space Agency (ESA)

## CONCLUSION

COVID-19 pandemic has a significant impact on many elements in Africa, with economics, health and the environment, according to this study. During the pandemic, national GDP is predicted to drop by 0.7 to 0.8 percent every month. There is also a clear relationship between economic development and energy use, with average daily gasoline and diesel consumption dropping by around 25% and 9% during the pandemic, respectively. The COVID-19 pandemic has had a favorable impact on some environmental characteristics while having a negative impact on others, according to this study.

This is primarily due to reduced traffic and industrial activity during the pandemic, and it corresponds to figures derived from Google community mobility surveys, the fact is normal circumstances, automobiles in Greater are responsible for half of NO2 emissions. During the lockout, the African AAI dropped by around 30%. This can be ascribed to the governments' cost-cutting initiatives, which resulted in reduced traffic and less construction operations.

Less traffic flow generally results in less PM emissions from vehicle engines, particularly from older taxis and public transportation buses, as well as fewer PM emissions from tyre and brake wear and entrained PM emissions from poorly maintained roadways. CO was also reduced by 5% as a result of the partial lockdown policy, which resulted in decreased traffic congestion, particularly from light-duty cars. For example, the 2015 Paris Climate Agreement's pledged Nationally Determined Contributions to reduce GHG emissions have yet to be completely implemented. Some countries have threatened to leave the accord, while others have shown a lack of commitment. Nonetheless, by the end of the century, global temperatures are expected to have risen by more than 30 degrees Celsius above pre-industrial levels. The direct and indirect effects of the Covid-19 are difficult to predict, as it has been suggested in the literature that related mental risks are high (Bo et al., 2020; Rajkumary, 2020). It may also elicit a shift in attitude and beliefs regarding man's interaction with the environment.

It has demonstrated that globalization has limitations, and as a result, African governments must invest more in water and sanitation (Cooper, 2020) [9], the environment/air quality, the internet, and education/research. Several African

universities are closed or are battling with a bad internet connection, while universities in other parts of the world are holding lectures and seminars online. If no checks are put in place, there may be an increase in instability, thefts, and overexploitation of natural resources, as millions of people have lost their employment.

This highlights the necessity for African leaders to plan for social security and diversify their economies after the pandemic to create more jobs. To escape the looming famine that could occur in a post-COVID Africa, our politicians and academics must rethink how to increase food production on the continent without damaging the ecosystem. This will aid the continent's food security and prevent a breakout of a comparable pandemic linked to environmental degradation and biodiversity loss.

More financing for environmental change researchers and scholars should be made accessible in this area. As a result, more investment in agriculture, education, and scientific research is critical for the post-COVID African economy to recover. Personal hygiene and sanitation should be encouraged everywhere, and there must be a commitment to closing the gap between the rich and the poor. Finally, a robust internet connection and universal access should be prioritized to avoid avoidable costs in the event of a future similar situation in which universities are closed and communication is hampered owing to weak connectivity.

**REFERENCES:**

1. Chauhan, R. P. Singh, Decline in PM2.5 concentrations over major cities around the world associated with COVID-19. Environ. Res. 187, 109634 (2020).
2. Air Korea. https://www.airkorea.or.kr/web/.
3. Air passenger demand & capacity evaporate amid COVID-19, IATA (2020); https://www. iata.org/en/iata-repository/publications/economic-reports/air-passenger-monthlyanalysis---apr-20202/.
4. AU, 2020. African Union update on the COVID-19.
5. He, M. R. Heal, K. H. Humstad, L. Yan, Q. Zhang, S. Reis, A hybrid model approach for estimating health burden from NO2in megacities in China: A case study in Guangzhou. Environ. Res. Lett. 14, 124019 (2019).
6. Zheng, D. Tong, M. Li, F. Liu, C. Hong, G. Geng, H. Li, X. Li, L. Peng, J. Qi, L. Yan, Y. Zhang, H. Zhao, Y. Zheng, K. He, Q. Zhang, Trends in China's

anthropogenic emissions since 2010 asthe consequence of clean air actions. Atmos. Chem. Phys. 18, 14095–14111 (2018).

7. Bai, Y., Yao, L., Wei, T., Tian, F., Jin, D.-Y., Chen, L., Wang, M., 2020. Presumed asymptomatic carrier transmission of COVID-19. Jama 323, 1406– 1407. [8] Sumner, A., Hoy, C., Ortiz-Juarez, E., 2020. Estimates of the Impact of COVID-19 on Global Poverty. U. N. Univ. WIDER Work. Pap. 43.
8. LeQuéré, R. B. Jackson, M. W. Jones, A. J. P. Smith, S. Abernethy, R. M. Andrew, A. J. De-Gol, D. R. Willis, Y. Shan, J. G. Canadell, P. Friedlingstein,
9. Creutzig, G. P. Peters, Temporary reduction in daily global CO2 emissions during the COVID-19 forced confinement. Nat. Clim. Chang. 10, 647–653 (2020).
10. Center for International Earth Science Information Network-CIESIN, UN WPP- Adjusted Population Density, and v4.11: Gridded Population of the World (GPW), v4 (2018); doi: 10.7927/H4F47M65.
11. Cooper, R., 2020. Water Security beyond Covid-19.
12. Corlett, R.T., Primack, R.B., Devictor, V., Maas, B., Goswami, V.R., Bates, A.E., Koh, L.P., Regan, T.J., Loyola, R., Pakeman, R.J., 2020. Impacts of the coronavirus pandemic on biodiversity conservation. Biol. Conserv.
13. COVID-19: Nitrogen dioxide over China. esa.int (2020); https://www.esa.int/Applications/ Observing_the_Earth/Copernicus/Sentinel-5P/COVID-19_nitrogen_dioxide_over_China.
14. D. Krewski, M. Jerrett, R. T. Burnett, R. Ma, E. Hughes, Y. Shi, M. C. Turner,
15. C. A. I. Pope, G. Thurston, E. E. Calle, M. J. Thun, Extended follow-up and spatial analysis of the American Cancer Society study linking particulate air pollution and mortality (HEI Research Report 140, Health Effects Institute, 2009).
16. D. W. Dockery, C. A. Pope, X. Xu, J. D. Spengler, J. H. Ware, M. E. Fay, B. G. Ferris Jr., F. E. Speizer, An association between air pollution and mortality in six U.S. Cities. N. Engl. J. Med. 329, 1753–1759 (1993).
17. Environmental Numerical Database. Japan National Institute for Environmental Studies; http://www.nies.go.jp/igreen/index.html.
18. European Environment Agency, European Air Quality Portal. European Environment Agency; https://discomap.eea.europa.eu/map/fme/AirQualityExport.htm.
19. Liu, M. Wang, M. Zheng, Effects of COVID-19 lockdown on global air quality and health. Sci. Total Environ. 755, 142533 (2020).
20. J. M. Velders, R. J. M. Maas, G. P. Geilenkirchen, F. A. A. M. de Leeuw, N.

21. E. Ligterink, P. Ruyssenaars, W.J. deVries, J. Wesseling, Effects ofEuropean emission reductions onair quality intheNetherlands andtheassociated health effects. Atmos. Environ. 221, 117109 (2020).
22. Global energy and CO2 emissions in 2020 – Global Energy Review 2020 – AnalysisIEA. IEA; https://www.iea.org/reports/global-energy-review-2020/global-energy-andco2-emissions-in-2020.
23. R. Anderson, R. W. Atkinson, S. A. Bremner, J. Carrington, J. Peacock, Quantitative systematic review of short term associations between ambient air pollution (particulate matter, ozone, nitrogen dioxide, sulphur dioxide and
24. carbon monoxide), and mortality and morbidity. Report to Department of Health revised following first review (2007).
25. Henriques, M., 2020. Will Covid-19 have a lasting impact on the environment? March 27, 2020.
26. R. Dedoussi, S. D. Eastham, E. Monier, S. R. H. Barrett, Premature mortality related to United States cross-state air pollution. Nature 578, 261–265 (2019).
27. Industrial production down in March and April 2020; https://ec.europa.eu/eurostat/web/ products-eurostat-news/-/DDN-20200612-2.
28. Industrial Production Index, FRED, Federal Reserve Bank of St. Louis (2020); https://fred. stlouisfed.org/series/INDPRO.
29. D. Berman, K. Ebisu, Changes in U.S. air pollution during the COVID-19 pandemic. Sci. Total Environ. 739, 139864 (2020).
30. Chen, M. Wang, C. Huang, P. L. Kinney, P. T. Anastas, Air pollution reduction and mortality benefit during the COVID-19 outbreak in China. Lancet Planet Health 4, e210–e212 (2020).
31. Lucchese, M., Pianta, M., 2020. The Coming Coronavirus Crisis: What Can We Learn? Intereconomics 55, 98–104.
32. C. Turner, M. Jerrett, C. A. Pope III, D. Krewski, S. M. Gapstur, W. R. Diver,
33. B. S. Beckerman, J. D. Marshall, J. G. Su, D. L. Crouse, R. T. Burnett, Long- term ozone exposure and mortality in a large prospective study. Am. J. Respir. Crit. Care Med. 64, 897–905 (2015).
34. Jerrett, R. T. Burnett, C. A. Pope, K. Ito, G. Thurston, D. Krewski, Y. Shi,
35. E. Calle, M. Thun, Long-term ozone exposure and mortality. N. Engl. J. Med. 360, 1085–1095 (2009).
36. Z. Jacobson, J. T. Wilkerson, A. D. Naiman, S. K. Lele, The effects of aircraft on climate and pollution. Part II: 20-year impacts of exhaust from all commercial aircraft worldwide. 165, 369–382 (2013).

37. Mapbox, Where and when local travel decreased from COVID-19 around the world. Mapbox Blog (2020); https://blog.mapbox.com/movement-changes-around-the-worldfrom-covid-19-cc79db7e04c7.
38. National Data, National Bureau of Statistics of China; http://data.stats.gov.cn/english/ easyquery.htm?cn=A01.
39. Giani, S. Castruccio, A. Anav, D. Howard, W. Hu, P. Crippa, Short-term and long-term health impacts of air pollution reductions from COVID-19 lockdowns in China and Europe: A modelling study. Lancet Planet Health. 4, e474–e482 (2020).
40. Wang, K. Chen, S. Zhu, P. Wang, H. Zhang, Severe air pollution events not avoided by reduced anthropogenic activities during COVID-19 outbreak. Resour. Conserv. Recycl. 158, 104814 (2020).
41. Di, L. Dai, Y. Wang, A. Zanobetti, C. Choirat, J. D. Schwartz, F. Dominici, Association ofshort-term exposure to air pollution with mortality in older adults. JAMA 318, 2446–2456 (2017).
42. Chen, P. Yin, X. Meng, L. Wang, C. Liu, Y. Niu, Z. Lin, Y. Liu, J. Liu, J. Qi,
43. J. You, H. Kan, M. Zhou, Associations between ambient nitrogen dioxide and daily cause-specific mortality: Evidence from 272 chinese cities. Epidemiology 29, 482–489 (2018).
44. Michael, C. R. O'Lenick, A. Monaghan, O. Wilhelmi, C. Wiedinmyer, M. Hayden, M. Estes, and Application of geostatistical approaches to predict the spatio-temporal distribution ofsummer ozone in Houston, Texas. J. Expo. Sci. Environ. Epidemiol. 29, 806–820 (2019).
45. R. Kethireddy, P. B. Tchounwou, H. A. Ahmad, A. Yerramilli, J. H. Young, Geospatial interpolation and mapping of tropospheric ozone pollution using geostatistics. Int. J. Environ. Res. Public Health 11, 983–1000 (2014).
46. T. Hale, S. Webster, A. Petherick, T. Phillips, B. Kira, Oxford COVID-19 Government Response Tracker (2020); https://www.bsg.ox.ac.uk/research/research-projects/ coronavirus-government- response-tracker.
47. US EPA Airnow program, AirNow API. AirNow API; https://docs.airnowapi.org/.
48. W. Lassman, B. Ford, R. W. Gan, G. Pfister, S. Magzamen, E. V. Fischer, J. R. Pierce, Spatial and temporal estimates of population exposure Geohealth 1, 106–121 (2017).
49. W. Xiaole, China Air Quality Historical Data. China Air Quality Historical Data; https://quotsoft.net/air/.

50. WHO, "Review of evidence on health aspects of air pollution—REVIHAAP Project" (World Health Organization, Regional Office for Europe, 2013); WHO, 2020. Coronavirus disease 2019 (COVID-19): situation report, 72.
51. World Development Indicators (WDI), World Bank; https://datacatalog.worldbank.org/ dataset/world-development-indicators.
52. X. Shi, G. P. Brasseur, The response in air quality to the reduction of chinese economic activities during the COVID-19 outbreak. Geophys. Res. Lett. 47, e2020GL088070 (2020).
53. Zambrano-Monserrate, M.A., Ruano, M.A., Sanchez-Alcalde, L., 2020. Indirect effects of COVID-19 on the environment. Sci. Total Environ. 138813.

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# (IM) MORALITY AND THE COVID-19 PANDEMIC

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***Abstract:*** *The fact is that the industrial era insisted more intensively on the mechanistic concept of organization and society, in which numerous functions and characteristics were transferred from man to mechanisms and tools, ie technology, so that man in this era became an industrial man, identified with a machine. In such circumstances, man becomes a robot over time, and to be a robot means to be programmed, not free, and to behave deterministically according to rules defined by someone else. It is clear that in such circumstances it is better to be a slave than a robot, because a slave, no matter how terrible it sounds, still has a certain freedom, while a human robot is programmed and as such excludes the brain in its actions or lack of actions.*

*The crisis of the Covid - 19 pandemic made it clear that it is necessary to build and nurture the intangible values of society, of which morality, tradition and customs are the most valued. These values are often neglected, although they often determine the future of civilization. This refers to morality, as a form of social consciousness that promotes moral values and condemns immorality as a degressive phenomenon. It turns out that humanity has progressed because of building and promoting those values that society valued and considered that they have the quality for the development of society. Societies that have not paid enough attention to moral or ethical values are not healthy, and especially they are not happy societies, because morality ennobles both the individual and society.*

*Analyzes show that on a global level, there are rich countries and societies, ie individuals, but that these societies and states, ie individuals do not belong to the group of happy societies. On the contrary, most highly developed countries and their populations are far from leadership positions when happiness is assessed as a value criterion, and the population of middle-developed or less developed countries feel happy, satisfied and are often willing to sacrifice their interests for the interests of such. society.*

*Related to the above is the analysis or research of the impact of (im) morality on the Covid - 19 pandemic crisis and the search for answers to the question whether and to what extent the crisis has violated certain moral values, as well as their impact on the success of the battle against the virus, but also the impact on future generations. This is all the more so because it is known that it is difficult and takes a long time to build moral values, but they can be destroyed very easily. It should be borne in mind that morality is dynamic in nature, but also it is a phenomenon that has different interpretations and meanings, because*

*what is moral for some is at the same time immoral for others, or what was once considered moral, can have the opposite meaning today.*

*It is clear that man a being of interest changes his value systems depending on interest, because man behaves in one way when he is in the leading positions, and differently when he is in executive positions when he often does not respect even his own moral norms. This fact makes it difficult to objectify research when it comes to human morality and behavior including the crisis of the Covid-19 pandemic.*

***Keywords:*** *Morality, Elements of Morality, Morality in COVID-19.*

## INTRODUCTION

Every crisis, and especially crises that appear on a global level, represent a special challenge for morality, that is, moral values. This is understandable, if we keep in mind that in the conditions of the crisis, objectively, there are limited resources that are necessary for a person to survive, but also there is a limited maneuver possibility in the use of existing potentials. The bigger the crisis and the longer it lasts, the greater the pressure upon morale, that is there is a chance that immoral values and behaviors might be intensified in order for a person to survive. In health crises, such as pandemics, where the lives and health of the population are endangered, where thousands of people die every day in severe torment, man, but also the population on a global level, is facing special moral challenges. The problem is even greater when it is known that industrial capitalist ideology has put material wealth in the forefront, where individuals, as well as organizations, are ready for immoral actions and deeds, in order to achieve greater material wealth, thus endangering the lives and health of others.

Moral problems arise when basic moral values are called into question and when an individual, organization, or society is unable to respond to them. Moral issues also occur in medical, ie covid staff and covid patients, but in a broader context also in the families of covid patients. Moral troubles can cause mental illness, mental disorders, depression and other forms of psychological illness. Medical covid staff in the inability to respond to moral problems, reduces productivity and labor economy, which often leads to a decline in humanity and understanding towards covid patients, which is understandable when the virus threatens their own lives. The final epilogue is that medical staff, and above all nurses and technicians, often resign, leave the country, look for new occupations, etc.

Experiences from the Covid - 19 pandemic show that moral difficulties arose when it came to establishing vaccination priorities. Well-known and healthy persons, in fear of infection, found a way to get vaccinated before the sick, the old and the poor. In other words, disturbing the order and priorities in vaccination and giving preference to the rich, famous and younger, is probably the immorality of the highest rank which is difficult to explain.

The same situation arose when in some countries there were opinions that in the absence of scarce equipment, such as respirators, the old and those who are highly likely to die were excluded from the apparatus. It was not certain that they could be saved so it was thought that it was moral to save the lives of the young.

Conspiracy theory about the artificial production of the virus, to benefit the pharmaceutical industry, and to reduce pressure on national pension funds through increased mortality, is a dangerous idea that multiplies covid problems and creates an anti-vaccination wave that opposes vaccination which is the only proven way in combating infection.

It is also a moral issue when some countries have not managed to provide sufficient quantities of vaccines and appropriate health care for their citizens in more than a year. It was even emphasized that the way out is in collective infection and that the pandemic, as a natural phenomenon, should be left to nature, that is, to the creation of "herd immunity". It is not necessary to explain to what extent this represents an immoral problem. It multiplies moral troubles and endangeres other activities as well.

With this in mind, the World Health Organization recognized the importance of morality and formed the International Ethics Group for Covid-19 to monitor and make recommendations on key ethical issues to be applied by member states, ie their national public healthcare systems. In addition to providing advice and recommendations, the expert group dealt with the creation and implementation of moral values for Covid-19 research, establishing priorities regarding C-19, and providing data and training to the World Health Organization for clinical management.

These and other facts deserve attention; (im) morality is also discussed in the crisis of the COVID - 19 pandemic, including the manifested problems and some elements of morality, to the place and role of the media and professional public communication services regarding the pandemic. It seems that greater attention on these issues would reduce the possibility of infection. Further, this would mean that the World Health Organization would deal with this crisis in a better way.

## 1. CHANGES IN THE PANDEMIC WHICH INFLUENCED (IM) MORALITY

"Man, how proud that sounds," stated Maxim Gorky. Can man keep the existing values during the pandemic, or build new value systems, those that are positive and noble and do not reach for immoral impulses and demands. In other words, the dilemma is whether man in a pandemic crisis, as a form of mass infection of the population, can remain Man, and is Moral a forgotten word?

So, Man and Moral with capital letters are two determinants that distinguish us from animals, and in essence they represent a consciously arranged way of life and work. The C-19 pandemic expresses medical morality, which is "a set of unwritten social norms according to which people form their reasoning and direct their behavior in relations with other people in the community or the narrower socio-group to which they belong." It is clear that this is a universal definition, which is applied in various fields, even when it comes to the medical sector, ie the establishment of morality at the level of a pandemic as a global disease with tragic outcomes (Nenadović, 2007, 3).

This question is not without basis, because it is shown that people in difficult and crisis times group, integrate and show solidarity in order to survive, which is embodied in the answer of one girl: "What would she like the most? Her answer was: "I would like there to be a war, for all people to be friends one day." This implies that threats and dangers are natural laws that unite people in order to make it easier for them to survive and secure their existence. Man inherited this characteristic from animals, because man has neither great strength, nor strong jaws, nor great speed, that is, a sense of danger, as animals have. Thanks to socializing with other people, man is able to resist the dangers and threats that come from other animals, but also from other people, or from natural and artificial disasters, such as: earthquakes, floods, droughts, volcanoes, wars, ethical and other conflicts, etc.

There is no doubt that the crisis of the C-19 pandemic has significantly changed the world, but partly it has also changed the consciousness of individuals. Long-established systems of knowledge have disappeared, or have been radically reduced at the national as well as at the local level. Organizational behavior and organizations have changed significantly, because long-term relationships with partners have been severed, and many companies have been shut down with little chance of resuming their activities. Many professions have disappeared or jobs have been reduced, but new professions have emerged, ie existing ones that were marginalized under normal conditions have become more dynamic and with increased workload. Location as a traditional factor of business success in the pandemic has lost its significance. "Digital nomads" have appeared; they do business on beaches, mountains, near lakes and other attractive places, ie where there is internet and a computer, ie a mobile phone. The jobs were redesigned so that administrative, intellectual and other jobs could be done from home. Distance working in the future will become a rule, which will bring into question the numerous business infrastructures and their use. Education, ie distance learning in the C-19 pandemic in all levels of education has proven to be a good solution with a tendency to "destroy" traditional education. Health literacy and

the development of advanced technologies have enabled every apartment, or house to become a mini-environment. Every flat can become a higher education institution, provided it has a mobile phone with appropriate software programs (Sxepard, Dommelli, Setx, 2021).

Traditionally good relations in the family and in the household have changed; they have been disturbed due to the longer stay of family members in isolation and due to numerous restrictions. Vulnerable groups such as the disabled, the poor, the sick, the elderly and the homeless are exposed to numerous discriminations. The most difficult situation that could happen in a pandemic is the integration of old age, disease and poverty, that is. when all three details are found in one person. The elimination of just one element, for example being old, sick, but rich enough to be able to pay for service, makes things easier.

During the pandemic, there was an increase in divorces, which was the result of the isolation. In other words, frequent quarantines that were introduced for several weeks, restrictions on movement and a ban on socializing raised stress among individuals in the family. The closure of companies and the reduced work in the business buildings of the organization also contributed to that, where often the whole family spent the whole day in a closed space. If we add to the above the fact that small apartments often represented classrooms for children, ie students, where parents had to do their work from apartments while at the same time serving or providing assistance to their children or students, we get a clear picture of all the challenges that C -19 brought.

Related to the previous is the increased number of murders and suicides within the family, but also outside it, the increased number of robberies, blackmail, threats, racketeering, etc. Problems of mental illness and depression, fears, reduction of physical and intellectual potentials in those who have suffered from C-19, but also members of their family, are already evident (Đuretić, Kotevska-Dimovska, Okovacki, 2020, pp. 25-46).

The pandemic has called into question and endangered numerous positive moral values, and at the same time intensified negative things. The biggest problem in a pandemic is the creation of untruths and the questioning of trust. The pandemic has also called into question international solidarity, which has been and remains a weak point on a global level. It is clear that these and other immoral values will cause great, even greater damage than the direct impact of the virus on the lives and health of the population, after the pandemic ends.

## 2. MANIFESTED MORAL PROBLEMS IN THE COVID-19 PANDEMIC

Ethical actions gain special significance in medical science, ie in the medical profession at the time of mass infection. They are accompanied by various aspects: from the global, national, or local level, analysis of the government's attitude towards the pandemic, the attitude of the population towards the pandemic, to the relationship between the pharmaceutical and medical industry, ie vaccine manufacturers, distributors, storekeepers and vaccines. In a broader context, the relationship between morals and rights is also observed, especially when it comes to human rights, ie whether the population can be forcibly vaccinated, etc.

The issue of morality in C-19 is dealt with by the social-humanity types of sciences, but also by the natural sciences. Religious organizations, socio-cultural, psychological-pedagogical and other sciences and organizations also deal with this issue. These organizations generally operate in a partial way, directing attention to the vaccine from the standpoint of their scientific and professional views and standards. It is clear that this approach does not provide a comprehensive answer to the challenges posed by C-19. And not only that. Controversy often occurs, because by respecting one moral value one enters into a violation of the other moral values. Due to limited space, several issues, ie moral dilemmas in the Covid - 19 pandemic crisis will be further addressed.

### 2.1. The pharmaceutical industry and morale in C-19

The pharmaceutical industry is one of the strongest industries in the world. The market of medicines and medical equipment is accompanied by economic laws, ie laws of supply and demand, which is the first moral dilemma. According to estimates, the vaccine market in 2020 amounted to about 67 billion dollars, and this amount will decrease in 2021, when the majority of the world's population will be vaccinated. In the vaccine market, it is estimated that about 60% is Pfizer-BioNTecx and Moderna, which also represents the share of the total market. It is estimated that in the next period, the total annual vaccine market will amount to around 8 billion dollars (Brooksxire, 2020).

The moral dilemma of the medical market is that it, like other markets, leads to the so-called market struggles, which are often more rigorous than classical warfare. Therefore, market struggles in modern conditions use legal and illegal means to conquer certain countries, ie they use both moral and immoral actions and

procedures. Transnational and multinational pharmaceutical companies play a major role in this. In order to conquer certain countries, or to gain future allies, the entire national potential of vaccine producers is often engaged. The Italian business magazine "Il sole 24 ore" states that "battles are being fought between the world's pharmaceutical companies, researchers and laboratories, but also by powerful intelligence services, from the Israeli Mossad to the Chinese 007 secret agents." This business daily compares the current situation in the struggle for the market to the Cold War in which battles are being fought "for prestige and influence, strengthening or gaining allies, with undoubted regional geopolitical strategies.

The C-19 pandemic crisis has shown that the pharmaceutical industry and morale do not have causal links. On the contrary, the crisis proved to be a fruitful ground for the pharmaceutical industry to achieve financial interests, which is embodied in the so-called conspiracy theories, ie that the Covid - 19 virus originated in laboratories, in order to reduce the world 's population as well as expenditures by world pension funds.

Another problem that arose in the C-19 pandemic crisis is the development of the vaccine, ie the use of "cells derived from human fetuses that were selected by abortion in the 1970s and 1980s." Concerns have been expressed, even by some Catholic leaders, that several vaccines involving these cell lines have been selected for use. They called on the authorities to encourage the production of a vaccine against Covid-19, which does not use fetal cell lines, instead. This is because "cell lines are actually cultures of human or other animal cells that can be grown in a laboratory for a long time, and can be manipulated to become immortal." (Brooksxire, 2020).

Access to and availability of vaccines is also within the scope of ethics, ie. morality. The C-19 pandemic showed that many African and other countries were left without vaccines because they were unable to buy, or procure vaccines, as well as other covid technology to fight the virus. Related to the above are the prices, because it turned out that the prices of protective equipment, disinfectants, consumables for respirators and other equipment were increased, which is contrary to the morality. It is contrary to moral to make profit on the sick, the poor, even on those who died.

The moral but also the legal issue is that some vaccine manufacturers produced, and national institutions allowed, the use of vaccines without completing the final tests, ie without obtaining the appropriate licenses for their use. For example, Russia's National Research Center for Epidemiology and Microbiology approved the use of the vaccine in August, before the trial phase began around November 11, claiming that its effectiveness was 92% after the second dose. It was later established that the

percentage ranged from 91.4 to 95%. Russian institutions have announced that one dose of the vaccine costs a maximum of 10 dollars, which is half the price of the Pfizer vaccine. The fact that the Russian vaccine was tested on only 38 people is also problematic. There is a suspicion of manipulation with this vaccine, which raises the question of trust among the population.

It turned out that there were differences between individual countries and variations in procurement. Numerous contracts between governments and vaccine manufacturers were not respected in terms of delivery dynamics; they also were not transparent, so even after a year and a half it is not known how much each vaccine cost. This means that we cannot determine the relationship between the price and vaccine efficiency. It is also evident that there was a significant difference in the prices of vaccines from country to country, but also when it comes to the performance of some vaccines from the point of view of efficiency, given that some vaccines had efficiencies of up to 95% and others significantly lower. In a word, governments managed in different ways to get vaccines and other equipment, using even personal connections and acquaintances, with subsidies for production and distribution, which also determined the selling prices of vaccines (Brooksxir, 2020).

Considering that the purchases and payments, ie the prices of vaccines were largely secret for the scientific and professional public, but also for the population that paid for the vaccine, estimates of the cost price of different types of vaccines are given below, without knowing their cost price, structure costs, and especially how much is the profit per vaccine. (Terri, 2021).

| Vaccine | Amont | Price in $ |
|---|---|---|
| Pfizer-BioNTecx | Doses 2 | 19,50 |
| Moderna | Doses 2 | 25 – 37 |
| AstraZeneca | Doses 2 | 3-4 |
| Joxnson and Joxnson | Dose 1 | 10 |
| Sputnik V | Doses 2 | 10 |
| Sinovac Biotecx | Doses 2 | 60 |
| Novavak | Doses 2 | 16 |
| CanSino Biologics | Dose 1 | Unknown |

As can be seen from the previous table, the prices of vaccine manufacturers differ depending on the degree of efficacy, number of doses, time to receive the second dose, date of obtaining permits for use, as well as storage conditions, shelf life, etc. However, it turns out that manufacturers often form a selling price depending on the value of the vaccines taken, as is the case with the Pfizer vaccine, where the price of $

19.5 is set for the first 100 million doses purchased, which is the market law of supply and demand.

It is evident that certain countries received vaccines without payment, ie as donations, or in combination with compensations, using loans, deferred payments, etc. The Republic of Serbia also donated vaccines, as well as covid protective equipment and covid technology to neighboring countries, which proved to be very humane. A number of citizens from other neighboring countries also received the vaccine in Serbia, which from the point of view of morality was correct and acceptable, because no country can be free until the whole world is free from the C-19 virus.

Analyzes show that there are differences in the price of C-19 vaccines between the US and the EU, which can be seen from the following overview for the five main vaccine manufacturers per dose (Ang, 2021):

| Manufacturer | Price in USA | Price in EU | Differ. in % paid by USA |
|---|---|---|---|
| Pfizer/BioHTecx | 19,5 | 14,76 | 32,1 |
| Moderna | 15,0 | 18,00 | -20,0 |
| Sanofi | 10,50 | 9,30 | 12,9 |
| Joxnson and Joxnson | 10,0 | 8,50 | 17,6 |
| AstraZeneca | 4,0 | 3,50 | 14,3 |

It is evident that there are differences in the selling prices of vaccines in the USA and the EU between different vaccines, ie. that the selling prices of vaccines in the EU are lower.

The explanation for the differences in price is in subsidies and other costs, because Germany financed, that is, donated millions for the development of the Pfizer company, while the USA did not donate to the production of vaccines. The only vaccine that is 20% cheaper in the United States compared to Europe is Moderna at $ 15 per dose.

However, it turns out that more favorable prices are achieved in bilateral agreements, especially when the number of vaccine manufacturers increases, and the degree of reliability of vaccines also increases, ie when the demand for vaccines decreases. Experience shows that the price of vaccines will be affected by the costs of transport, distribution and storage of vaccines. However, vaccine manufacturers, as well as other covid equipment, insist that procurement contracts be secret and not published in public, which is a sign of suspicious business, but also a certain specificity, because during a pandemic, when demand is high and supply is changed,

public disclosure of data can be counterproductive. However, after the end of the pandemic, it is moral, and it is correct from the point of view of the law, to publish these data correctly, stating that they will not change anything, but in that way the trust of the people is created, which gained even more importance in times of crisis. Pfizer complained of breach of contract confidentiality and procurement of vaccines. "These procurements are covered by a confidentiality clause in the contract with the European Commission," said Elisabeth Schraepen, spokeswoman for the American drug manufacturer for the Benelux region, to the Belgian newspaper Le Soir, threatening to file a lawsuit over the announcement of the vaccine price (Boseley, 2020). In short, the pharmaceutical industry, ie multinational companies, thanks to their market power, ie economic strength, have created a monopoly market, so to speak, on which they can dictate the conditions for the sale of vaccines and other medical equipment. Due to the above, a large number of poor countries did not have access to vaccines, because they did not have the opportunity to pay for them. It is clear that this is an immoral act and procedure and that this issue should be regulated and viewed not only from the side of the interests of the pharmaceutical industry, but also from the point of view of morality.

### 2.2. (Non) truth as an (im)moral value

Truth or lie are dilemmas that man has been dealing with since his inception. This dilemma exists in ordinary life, but also in science, where one insists on the truths in discovering the unknown in the natural and social order. Thus truth, or truthfulness becomes a measure of science, because science is based on truth, ie on what is scientifically proven. In times of crisis such as pandemics, the truth is often questioned by citizens. Sometimes telling lies serves as a way to ensure survival. Regarding the above, the spokesman of the European External Action Service, Petar Stano, says: "A pandemic is a perfect breeding ground for misinformation. (Veber, Busxuev)."

Truth as a moral act, that is, a lie as an immoral act, have changed over time, so that now in the practice of medical ethics we have the so-called "useful lie." This means that the medical professional does not inform the patient about the diagnosis of a serious illness, or that it provides him with partial information, so as not to worsen his already difficult health situation. Today we insist on truth, ie on telling the patient the truth about his health condition, even when it comes to vicious diseases, with rapid deaths, believing that nothing should be hidden from the patient. The question is to what extent this ethical approach benefits the patient, which is why the

doctor tells the difficult truth to the patient's relatives, who still do not tell the patient the whole truth.

The truth means not only to question what is, but also to deny what is not. It is known that truth is one, and that only a lie can be invented. It is not necessary to remember the expressed truth, while it is necessary to remember a lie, which is embodied in folk wisdom: "Tell the truth and you don't have to remember". Truth is connected with culture. If the truth is to be desired, the culture, ambience and climate in which the truth will be valued and considered as one of the basic characteristics of man should be promoted. During the pandemic, numerous misinformations appeared, as stated by UN Secretary General Antonio Guterres in April 2020. "Untruths and misinformation during the crisis of the C-19 pandemic disoriented the population and as such sowed fear, resulting in numerous stresses and mental diseases that the world will fight in the coming period. "

Disinformation, that is, denying the truth in a pandemic, has multiple effects. If the pandemic is assessed as harmless, the population relaxes and does not understand it as a dangerous disease, which logically increases the number of patients, and thus increases the pressure on public health. If, on the other hand, C-19 is presented as a dangerous disease, fear is sown, depression is created which produces mental illnesses. This imposes the need for a true account of the situation. In other words, in a pandemic, there is a problem of underestimating, or reducing the number of C-19 victims which is not only immoral, but also illegal, because it is a human right to have timely and accurate information.

Therefore, in the crisis of the pandemic, it turned out that the greatest immorality is the so called "fixing" of numbers, ie reducing the number of deaths from C-19. According to recently published data from the authorities on the number of deaths, it turned out that the number of deaths from C-19 in the pandemic in Serbia was multiplied, due to insufficiently developed procedures and standards, ie information technology to monitor the number of infected, dead and survivors, ie recovered from infection, or due to incompetence in creating true information. This situation also exists in other developed countries. "A new analysis by the Institute of Health Metrics at the University of Washington indicates that 6.9 million people worldwide died from C-19, twice as much as was officially reported. In certain countries, such as India, Mexico or Russia, the number of deaths has been dramatically underestimated. It is estimated that approximately 2.5 million more people will die of Covid - 19 in the next six months. (ISGlOBAL Institute for Global Health, 22.06.2021.)"

In “refuting the truth, state institutions were often involved, such as statistical institutes, public health institutes, reports of local authorities where data on the real situation are "fixed", which deepens and creates a state of mistrust." Fixing the numbers actually means beautifying the existing situation, or creating a more beautiful image than the real one, and it is also specific in business presentations and financial reports. In the short run, it can have a mild positive effect, but in the long run it produces immorality and numerous problems (Anđelković, Radosavljević, Anđelković, Radosavljevic, 2020, p.48).

The consequences of spreading untruth and lies regarding the number of dead, infected, covid capacities, technical equipment, medical personnel potentials, are far-reaching, even for the success of the fight against the C-19 pandemic crisis. It is shown that inaccurate data on certain elements of the pandemic process, place and time where and when the virus appeared, what consequences it left at certain intervals and in certain places, hindered research and analysis attempting to draw certain conclusions and laws, which is the first condition for scientific observation of the manifested problem, but also for practical action. Of course, without valid empirical research, there is no epidemiological science, insofar as pandemics are occasional and any unrealistic presentation of results is a falsification of data and damage to science, but also to the fight against this vicious and still insufficiently known disease.

### 2.3. (Non)trust and C-19

(Non) trust is also a part of (im) morality in a positive or negative sense. In all kinds of crises, trust is one of the greatest values of man and civilization in general. In the C-19 pandemic, distrust was especially expressed towards the medical profession and the pharmaceutical industry, and it is the result of different attitudes regarding the pandemic, even among the medical profession. Trust is a state of feeling. It is difficult to gain, and in times of crisis it is lost very quickly, which leads to insecurity, meaning that it takes decades for trust to be restored. So, "In order to develop a sense of trust, a sense of security must be created when expressing oneself. When a person makes a mistake, he should admit it and expect his boss to support him in that." Admitting a mistake is a rare but noble trait and it is characteristic of man, because there is no man who has not made a mistake, no matter whether he is a genius or not (Sinek, 2019, p.103).

(Non) trust in the C-19 pandemic crisis has been shown in different areas, of different intensity with different consequences. The most important thing in a crisis is which authority or source of information to trust. It is certain that in financial

crises, the information coming from economic and financial experts should be the most acceptable one. In health crises, such as pandemics and epidemics, medical experts, ie epidemiologists, should be trusted. However, this depends on the national or political culture and respect for authority. Analyzes of the behavior of the American people during the C-19 crisis showed that "Republicans will believe and follow Trump's statements and recommendations, rather than medical experts, compared to Democrats." This shows that the current political polarization, and especially that Trump's views, play a major role in shaping public confidence in health authorities and Covid-19's understanding in general. That is why this political group did not support the measures of health authorities called "stay home", ie the measures of isolation, lockdown and bans, while the Democrats as the opposition supported and practiced this idea. (Sxepherd, MacKendrick, Cristina Mora, 2020).

It follows from the above that trust in global ie public healthcare is influenced by ideological attitudes and views of political elites. In the United States, the views of Trump and his political group called into question the authority of the World Health Organization; he even announced the cancellation of its funding, considering it the cause of the pandemic, rather than being able to solve the pandemic issue. This statement also applies to the attitude towards public health in the USA, ie public health institutions. This also affected a number of governors who were in a dilemma whether to follow the recommendations of the medical profession or Trump. It is clear that this significantly affects the behavior of the population, especially when it comes to restrictive measures, which means that in times of crisis, ideologies have a key role in organizing social life, even when it comes to fighting a pandemic (Swidler, 1986, pp.275-286).

The pandemic showed that trust in national government institutions, ie in national health systems and public health, is decisive for understanding the pandemic, but also for behavior during a pandemic. This implies the independence of public health institutions, as is the case with scientific institutions, which rarely happens anywhere. According to research in the United States from six years ago, ie in 2015, "only 57% of Republicans rated public health positively, while that percentage among Democrats was 77%." The same relationship exists when it comes to trust in the World Health Organization. Another legality is also evident and that is that trust and a positive attitude towards public healthcare is greatest at the beginning of a pandemic, and that it is lost over time, due to unclear, often controversial explanations, but also decisions that are made and are often contrary not only to science, but also to logical explanations.

Insufficient trust in medical science and public institutions often leads to a conflict between state recommendations and individual, but also collective rejection of the vaccine. Vaccination and vaccines are the result of science and their use largely solves the problem of a pandemic. This understanding and achievement of science, supported by legal frameworks, does not yield results, which is why anti-vaccination groups are created which produce numerous misinformation and undermine trust in the medical profession and regulatory bodies.

Increased distrust in the medical profession in Serbia and in other countries in the region during the C-19 pandemic was additionally affected by the parliamentary elections, because information on the degree of infection and deaths was created and, as a rule, mitigated as the election date approached. The behavior of those who prescribed protective measures was not in line with the recommendations, which indicates the fact that trust is best built by the personal example of the first people of the state, or organization. This means that the pandemic was an important instrument for acquiring political goals, and the protection of the population was in the second place. This means lack of trust that the pandemic is actually a medical crisis but creates the impression that it was artificially manufactured and that it has political connotations ( Anđelković, Radosavljević, Anđelković:2020. pp 42-43.).

### 2.4. Solidarity in the crisis of the C-19 pandemic

The next (im)moral action that became evident in the crisis of the C-19 pandemic is the insufficient solidarity that manifested itself in different areas, levels and between different subjects. The C-19 pandemic objectively created major problems for health systems, as the number of infected people to be admitted to hospitals was far greater than their capacity. In such a situation, there was a huge need for free beds and respirators, which led to a moral dilemma about the priority of treatment, in order to maximize the number of cured.

For the first time, a dilemma arose in some countries as to who should be given priority in treatment, with the expressed attitude that the chance should be given to those patients who have the best prognosis for cure and who are more promising from the point of view of usefulness to society. In an ethical sense, this situation first appeared in the history, in the 21st century, in which artificial intelligence took over numerous human functions. Triage, ie deciding whom to admit to the hospital, is probably one of the most difficult things, both for the patient and his family.

The arguments justifying these decisions are as follows: (Robert, Kentisx-Bernes, Boir, Laurent, Azoulai, Reignier: 2020).

- Give priority to those who are most likely to survive the current illness,
- Give priority to those who are most likely to live the longest after recovery,
- Give preference to those who have lived through fewer life stages,
- Give preference to those who have a certain narrow social benefit,
- Give priority to the worst (sickest or youngest),
- Give priority to those who apply first,
- Lottery.

It is not necessary to explain that there is no solidarity or humanity here, but that this is the highest level of immorality and discrimination, because the life cycle cannot be a criterion for admission or refusal of a patient for treatment and saving lives. The absurdity is even greater if it is known that these perceptions originated in countries with developed democracies, in which many smaller human rights are protected, from the right to health and life. It is believed that even such immoral principles, or strategies, are tacitly applied to some patients, who are in far greater danger of dying, and who were given little attention during C-19 with far-reaching consequences for their health and lives. Giving priority to less dangerous diseases over vicious diseases has further increased mistrust among the population, especially if it is known that globally many people die from obesity rather than from malnutrition, ie from C-19 infection.

Prohibitions and severe restrictions on visits to patients in covid hospitals and nursing homes have disrupted communication that has been built for decades with modest effects in some countries. The generation gap, even when it comes to family relationships, has taken its toll, that is it further influenced the weakening of those ties and relationships. Several months of bans on visiting C-19 patients in nursing homes, as the most vulnerable group, have led families to neglect the feelings of patients in nursing homes, as well as in covid hospitals. They could not see their loved ones, which would certainly provide intergenerational solidarity.

At the time of the pandemic, relations of non-solidarity were also shown between countries at the global level, between organizations at the national, or regional, or local level. Solidarity must not be understood as charity, which is often equated. Therefore, "It would be insufficient for all unsatisfactory situations if solidarity were understood exclusively as a matter of social charity, and as a set of acts and patterns of behavior that are useful only for those who are the subject of solidarity, to which solidarity is directed. It also has its radical foundation in the preferences not only of those who receive, but also of those who give. (Madžar, 2016, p.82)"

The pandemics led to discrimination, and those older than 65 were especially affected, which was expressed in the statement of an older pensioner: "Pets have more rights than we who ensured the sustainability of new generations." Number 65 became during the pandemic a synonym for non-solidarity, ie for numerous discriminations. The Declaration of Human Rights in Article 3 states that every human being has the right to life, liberty and security of person and that right is not limited to any age. The practice that existed in some countries, as stated, to exclude the elderly from respirators in pandemics and covid hospitals is a classic example of discrimination, because the Declaration of Human Rights, as a universal world document, nowhere states that a person has the right to live up to a hundred or more years." Even if something like that were written in the Declaration, such a rule would not be moral (The Universal Declaration of Human Rights, 10 December 1948).

Given the broad context of morals and ethics, the criteria on the basis of which moral values are assessed are different and depend on the culture, customs and organization of the state. Regardless of the above, in the pandemic crisis, the most important thing was the speed with which solidarity was expressed, that is, the assistance that was provided in the treatment of C-19. This is true regardless of the size of the aid. Even symbolic assistance in the distribution of scarce resources in a pandemic such as: respirators, protective equipment, vaccines, technical medical and other aids is more appreciated than delayed assistance and aid. In times of crisis, solidarity is highly valued, as the example of Serbia showed when part of the vaccines and respirators were given to countries in the region that did not have this equipment.

### 2.5. The politicization of the C-19 pandemic

The politicization of the C-19 crisis is also related to the above. The C-19 pandemic is a complex phenomenon that affects the whole world. Although nation states, through public health, as well as the World Health Organization, have been planning and legally regulating the way of fighting this virus for years, they were not prepared for the pandemic, even when it comes to highly developed countries. The direct and indirect damage caused by the pandemic is estimated at trillions of dollars. Non-material damages, especially those related to the reduction of the working capacity of the population, psychological illnesses, and the additional impact on the impoverishment of certain countries, will set back all spheres of life and work. It is shown that the "health crisis has significantly changed the economic mood of households", that it has "increased people's concerns about unemployment, reduced consumption and brought the slowdown in the labor market", and that

"unprecedented fiscal policies have not eased bad economic mood" (Van der Vielen, Barrios, 2021).

In these circumstances and situations, most governments at the global level have used the pandemic to consolidate power, that is, to promote their political ideas. This practice moved in two forms. Countries that have been successful in responding to the challenges of the pandemic crisis have embellished and further styled the state of pandemics in their countries, and governments that have had a large number of infected and dead have sought to reduce the negative effects. The extent to which this practice was present in the C-19 pandemic is shown by the example of the United States, where due to the negative attitude towards the pandemic, according to many, Trump lost power, because his denial of the existence of C-19 led to a large number of deaths. The countries of the Western Balkans used the pandemic to promote their ideologies and create a supposedly good environment for holding elections, thus further contributing to greater contagion and the spread of the pandemic.

The experiences of the C-19 pandemic, as well as previous economic crises, show that good science is not enough for successful responses to the crisis, but also quality policy, and the establishment of moral and socially responsible values. It is shown that politics should follow science and that management decisions should be made only on the basis of a rigorous analysis of facts, ie evidence, as is done in the epidemiological medical process. In the C-19 pandemic, politics was above science. Of course, one should be careful here as well, because it shows, as Stephen Meek states, that "there is a risk to science, when it is used as the only authority for decision-making and when scientific assessment is opposed to political assessment and evaluation. Although good policy is guided by good evidence, good evidence is not a guarantee of good policy." This shows that the ultimate responsibility for the fight against the pandemic and for public health in general is taken over by political elites, who should base their policies on science and should harmonize them with science (Meek, https://www.nottingham.ac.uk/vision/vision-c19-needs-good-politics-too).

However, experiences on a global level show that the medical profession, especially in the countries of transition, during the pandemic, was politicized, so that the main word in the pandemic and decision-making was taken over by political elites and the government. The more they explained the pandemic and its characteristics, the less the population believed in their stories and information. It is clear that distrust has led to the emergence of an anti-vaccination movement that opposes the use of the vaccine, which is claimed, as stated, to be a product of the pharmaceutical industry, with the aim of commercializing it and making as much profit as possible. Hence the need to entrust the work of information and communication with the

population in public and other crises to experts in public communication, ie PR experts (A relatively good review of political communication of various governments in times of crisis, and especially politcal communidation in the Covid-19 pandemic can be found in: Lilleker, Coman, Gregor, Novelli: 2021).

In Serbia, the ideologisation of health systems management, as well as other public sectors, has further burdened the C-19 pandemic. The largest number of directors from primary, secondary and tertiary health care, up to covid hospitals, were in the status of acting directors. This institute is envisaged as an extraordinary measure and for a limited duration, in case there is no career planning, or when the first people of the organization leave unplanned, to be replaced by people who will manage the organization until a new one is appointed or elected. positional authority, or leader. In Serbia, the institute of acting has been used for a long time to make the strategic positions of the first people unstable, that is. so that people can change more easily, if they do not realize the pipes of the party in power and in that way politics, or politicking in practical action rises above science and profession. In such circumstances, the interests of the ruling party are put in the forefront, and not the health of the patients, because of which healthcare system actually exists.

It is clear that this attitude towards top directors, who mostly come from the ruling party, introduces additional controversies in the management of the healthcare system. It turns out that party affiliation is decisive for the appointment of leaders, as well as other structures in health care, but also that it serves as a driver in developing different attitudes and beliefs towards infection, and introducing great subjectivity in assessing the success of the fight against C-19.

The introduction of professional management into healthcare systems management, as well as business infrastructure, such as consulting companies, agencies, professional advisors, and simulating the functioning of the health system in crisis situations, would significantly increase the success in the fight against COVID-19. It would be important to include crisis management professionals in crisis management teams. In short, professionalism in the field of organization and management during a pandemic is a winning combination (Radosavljević, Anđelković, Anđelković, 2020, p.381).

## 3. MEDIA AND PR IN THE C-19 PANDEMIC

It is not necessary to explain the influence of the media on all spheres of human life. With the development of information and communication technologies, their

power has increased, because they are able to create a vocation or a negative climate, or (im)moral values at the level of a society. In this context, each government more or less strives to have public, primarily electronic media under its control, often as its promotional centers for the ideology they represent. Public broadcasters are also part of the critical infrastructure. The question here is how ethical the media are and to what extent they are able to produce moral values. (Šprajc, Arsenijevic, Podbregar, 2020, p.64).

The media and professional public relations services, known as PR, have a significant influence on the success of the fight against the C-19 pandemic, as well as on the promotion of moral values. These instruments of communication, even in normal conditions, and in times of crisis, create or significantly influence the creation of public opinion, which should support certain measures or policies created by the authorities or the management of organizations. Truth and timely information about the causes, course and consequences of the pandemic crisis, and the measures that citizens should take to remove doubts, controversies and fear of disease. It is shown that "the spread of misinformation, intensified on social networks and other digital platforms, shows as a threat to global public health as the virus itself." It is clear that existing technologies "create opportunities for people to be safe, informed and connected. However, the same tools also enable and reinforce the current infodemia, which continues to undermine the global response and jeopardize pandemic control measures."(WHO, Thompson, 2021).

### 3.1. Media and C-19

In conditions when there are no borders of national media and when national media spaces are abolished through networks, a greater degree of cooperation is needed in the placement and promotion of certain ideas in the fight against health crises, such as epidemics and pandemics. That is why the world's largest media houses, as well as the global media industry, are trying to formulate practical instructions and guidelines for the media in response to the crisis. The crisis of the C-19 pandemic showed and proved that "social media presented positive and negative data, and C-19 resulted in a global infodemia. It has eroded public confidence and significantly contributed to curbing the virus, ie not spreading it." Pandemics claimed a large number of victims, but they also swept away moral values that have been created for centuries, and the consequences of which will be felt in the future through increased fear, depression and mental health. (Abbas, Vang, Su, Ziopour, 2021)

The pandemic has led to closure, physical distancing and reduced socializing between people, even when it comes to family relationships. This also imposed the need for citizens to use social media more than usual, to the extent that they were in some way a "valve" for them in a crisis or stressful environment. This is especially true for the elderly population, which is oriented towards traditional electronic media and which were their only source of information at the time of closure. People were primarily oriented to information related to the virus, its spread and consequences, often in the "raw" state, which further increased the fear of infection. Experiences from the pandemic show that the older population gave more trust in information to the traditional media, from which they were most often informed about issues related to infection, while the younger generation was more focused on social networks. It is generally stated that the media at the global level did not cope in the initial phase of the pandemic, because information and communication in health crisis times require a different concept compared to normal times, or when it comes to other types of crisis.

The biggest challenge in informing the population is unclear information, or misinformation, which becomes fertile ground for the development of numerous conspiracies and movements in denying the pandemic. This is understandable, given that the media is the primary source of information. The information, especially if the media refer to scientific institutions, become the basis for incorrect calculations of the origin, peak and time of disappearance of the virus, but also the promotion of certain drugs through media houses, ie the media industry. For example, when the media reported that an effective drug for C-19 is hydroxychloroquine, which successfully treated malaria, this medicine “disappeared like a ghost, prices jumped sharply, and sellers began to build up stocks, creating a supply chain deficit. Its deficiency has left a deep impact on people who use it as a medicine to treat their autoimmune diseases. Health care providers have noticed an increase in the incidence of lapus disease and an increase in the number of cases of rheumatoid arthritis." (Anvar, Malik, Raeesand, Anvar, 2020).

It follows from the above that the media were not prepared to work in the pandemic crisis, which is natural, because these crises happen occasionally and are temporary. However, it should be noted that simulation and training in the media industry is necessary for crisis reporting, even when it comes to specific crises, such as a pandemic. The basis for this is that there is a strategy for pandemic management at the national level, and the recommendations of the World Health Organization on the behavior and conduct of the media in this situation. This is all the more so because

the population can watch or listen to different programs of global media houses, and can compare data and information from different sources.

### 3.2. Public relations (PR) and C-19

The Covid-19 pandemic crisis has changed the intensity and manner of communication, and thus public relations. The reasons are numerous, from prohibitions, quarantine, physical and social distancing, prohibition of socializing, etc. The pandemic conditionally cut off communication within families, and with the severance of the supply chain, relations with long-term partners and other interest groups, ie formal and informal groups and individuals were terminated. Estimates say that the interruption, or reduced dynamics of communication, will continue even after the pandemic ends, because communication will be affected by climate and other changes. Communicators and PR experts should respond to the new situation, because the way the population behaves will depend on it.

Regardless of the different approaches in determining public communication and the tasks of PR services, the job of public communication is to convince people to accept certain ideas and recommendations. The American public society defines public relations as "a strategic communication process that builds mutually beneficial relationships between organizations and their public." In other words, PR services have the task of "generating positive publicity for their client and improving their reputation." People who deal with communications in organizations actually deal with relations with consumers, or parts of the company. In a pandemic crisis, the task of PR is to inform, but also to convince people with arguments about the correctness of certain measures, in order to achieve favorable outcomes. (Vinne, 2016).

In a pandemic, PR establishes close relations with the media, where public communication services inform the media about certain problems, through press conferences, special announcements, statements, etc. Bearing in mind the importance of PR, the International Public Relations Association was formed 65 years ago as a global network for professional communication, with the aim of promoting communication based on trust and ethical public relations practice. This is "achieved through networking, a certain code of conduct and intellectual leadership in the profession," they state in this association.

In parallel with informing the public, in a pandemic crisis, internal information is also necessary, ie providing information for employees in individual organizations. Health care institutions, crisis staffs and individual specialists, ie special public information services, through conferences can provide information on the state of the system in charge of solving certain problems, ie they can diagnose, but also give

recommendations for acting in certain situations. For this type of information and for creating a favorable climate for resolving the crisis, it is necessary to hire special experts, ie educational PR who are trained for communication with the public. The practice of political or other leaders, ie ministers, state secretaries, company directors, appearing at press conferences in crisis situations is not good, because they are not trained and do not know the techniques of communicating with the public. Here, any incorrectly or vaguely spoken word can cause great confusion, so additional explanations or clarifications are often required. Finally, PR experts know the technology of communication, what to say at the beginning, ie what to emphasize and what to marginalize, and what tone or color of voice to communicate with. Of course, it is important to avoid communication with the masses, ie a large number of people, and presenting unverified facts. PR professionals know that there is no universalism in communication with the public and that special scenarios and addresses should be prepared for each target group, and that each address to the public should be analyzed for the impact it has made on the public.

Regarding the Covid-19 crisis, it turned out that in the beginning of the pandemic it was necessary to address the elderly population in one way, and to speak to the younger population in a completely different way. Therefore, in the resistance of young people to vaccines, a motive should be found that motivates them to be vaccinated and that motive should be used in communications. These are probably different motives from the motives of the elderly, and especially the population over the age of 65, which experienced the greatest humiliations and discrimination during C-19. So, young people are interested in: tourist and other trips, socializing with other people, visits and attendance at festivals, sports, cultural and other events, so these motives should be promoted in communications.

Highlighting material compensation as an instrument to increase the number of vaccinated young people does not yield results. Moreover, emphasizing this motive can be counterproductive because it implies the commercialization of vaccines. When it comes to pensioners, the elderly and the poor, highlighting material benefits gives good results, especially if the material rewards, or benefits are higher. This is natural, because young people prefer some other values over material values, but also because it has been proven that young people are less prone to infection, live relaxed and often do not react to crisis headquarters measures, believing that they are not a favorable environment. to infect and spread the virus. Often, they behave contrary to the prescribed measures, which is visible at sports, cultural, tourist and other manifestations and events at the national or global level.

Experiences from the crisis management of the C-19 pandemic in Serbia have shown that the problems of the crisis cannot be solved through sanctions, ie decrees, orders, decisions that have imperative characteristics. This should not be used in particular in the addresses of communication experts, because in a crisis, everyone remains sensitive and the way of communication can additionally produce new problems. It is shown that the decisions that are made must be well thought out, they should not be changed, and once they are made, we should insist on their implementation. Hence the conclusion that even the best measures of crisis headquarters will not give results, if there is no culture and readiness to implement it.

Healthcare facilities in the C-19 era must have a public communications service. This also applies to crisis headquarters. They create an image of the health organization and its ability, of its knowledge about viruses and other diseases, but at the same time they protect the reputation of the health organization, ie the authorities. The modern definition of public relations that can be applied to communications during the C-19 pandemic could be: "A strategic communication process that builds mutually beneficial relationships between organizations and their public (www.prsa.org/about/all-about-pr).

## CONCLUSIONS

The crisis of the Covid - 19 pandemic has had major negative impacts at the local, national and global levels. Its consequences have not yet been sufficiently determined and investigated. Attention is mainly focused on saving people's lives and health, which is logical, because lives and health are the greatest earthly value. This refers to the lives and health of the population, as well as to the lives and health of those who save people from infection, those who prolong the lives of people. This is, of course, the medical profession and the so-called non-covid profession involved in epidemic processes, such as: drivers, logisticians, engineers who maintain covid technology, as well as the support staff, such as: cleaners, cooks, porters, staff working in information services, etc.

Building morale, or positive moral values, as a non-medical issue, is crucial to managing a pandemic crisis. This especially refers to the issue of truth, which is endangered during the pandemic. This is also true when it comes to citizens' trust in medical and other institutions and professions, ie solidarity as understanding and readiness of individuals to help another person in crisis. The fact is that in the C-19

crisis certain immoral acts and actions were manifested, that there was discrimination especially against vulnerable groups such as the elderly, the sick and the poor. Building or improving moral values would significantly contribute to the success of the pandemic management.

At the global level, as in Serbia, the problem of ideologizing the pandemic, ie using the crisis to achieve certain political goals became evident. It is shown that through the institute of the acting director of covid hospitals, there is a political influence on the functioning of these institutions, which is immoral, and at the same time it reduces the success of the fight against C-19. The primary understanding here is that science must be in balance with politics and that politics, that is, political leaders, cannot manage a health crisis without the medical and other non-medical professions.

There is no need to talk about the influence of the media on the creation of a moral environment. The influence of public media and public communication services is presented, insisting that these services must be prepared to inform the public truthfully and in a timely manner and that information in times of crisis is different compared to normal times. Simulating reporting in times of crisis, and especially in conditions of health crises, ie pandemics, is also different in relation to reporting in conditions of financial, oil or other crises.

Linking science and moral values in the C-19 pandemic is natural, because there is a high level of interdependence between the two. It has been shown that distrust in science, ie factual medicine, is a great challenge in the fight against the pandemic. Science can find appropriate drugs and medically solve the problem of a pandemic, but if there is no trust in medical inventions and drugs and if they are not used due to distrust, science can do nothing or little. Therefore, in addition to science and scientific research in medicine, it is also necessary for future vaccine users to prepare to accept what science has found. Science must prove the validity of certain medications, or other medical aids, but also it must develop certain moral values.

**REFERENCES:**

1. Abbas, J, Vang, D., Su, Z., Ziopour, A (2021): „The Role of Social Media in the advent of COVID -19 Pandemic. Crisis Management“, Mental Health Chalelenges and Implications, School of Media and Communication, Shanghai, University Jiao Tong, China, 12. May.
2. About Public Relations, www.prsa.org/about/all-about-pr

3. Anđelković, A, Radosavljević, M, Anđelković, M. (2020): Dangers and chances of a pandemic with reference to Serbia, COVID-19 pandemic crisis management – A non-medical Approach International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
4. Ang, C (2021): COVID -19 Vaccine Prices Comparing the USD and EU, June 7.
5. Anvar, A., Malik, M, Raeesand, V, Anvar, A (2020): „Role if Mass Media and Public Health Communications in the COVID – 19 Pandemic", Cureus, September.
6. Boseley, S (2020): Belgian minister tweets EU Covid vaccine price list to anger of manufacrurers, The Guardian, December 18, https://www.theguardian.com/world/2020/dec/18/belgian-minister-accidentally-tweets-eus-covid-vaccine-price-list
7. Brooksxire, B. B (2020): How making a COVID-19 vaccine confonts thomy ethical issues, ScienceNews, July.
8. Covid-19 – Scientific Updates, ISGlOBAL Institute for Global Health, 22.06.2021. https://www.isglobal.org/en/covid-19-novedades-cientificas
9. Đuretić, G., Kotevska-Dimovska, M., Okovacki, S. (2020): Psihological and Social Issues During Pandemic and How They Impact on the Future", in Covid – 19 Pandemic Crisis Management – Non Mecical Approach. International thematic proceeding, Faculty of Information tehnology and engineering, Belgrade, Serbia.
10. Lilleker, D, Coman, I, Gregor, M, Novelli, E (2021): „Political Communication and Covid – 19 – Governance and Rhetoric in Times of Crisis, Roygledge.
11. Madžar, Lj (2016): „Moj obračun sa njima", Alfa BK Univrzitet, Beograd.
12. Meek S (2021): Covid – 19: However good the science, you need good politics too", University of Nottingham: https://www.nottingham.ac.uk/vision/vision-c19-needs-good-politics-too
13. Nenadović, M. (2007): Medicinska etika, drugo izdanje, Univerzitet u Prištini, Medicinski fakultet.
14. Radosavljević, D, Anđelković, M., Anđelković, A, Radosavljevic, M.,(2020): Post-Pandemic pandemics with regard to Serbia, COVID-19 pandemic crisis management – A non-medical Approach, International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
15. Robert, R., Kentisx-Bernes, N, Boir, A., Laurent, A, Azoulai E, Reignier J. (2020): „Etical dilemmas due to the Covid-19 pandemic, Annals of Intensive Care, No 10, June.

16. Sinek, S. (2019): Beskonačna igra, Kontrast, Beograd.
17. Šprajc, P, Arsenijević, O, Podbregar, P: „Etika u odnosu na sistemskim medijima u kritičnoj infrastrukturi“,ezbednost i mediji u kriznim situacijama : međunarodni tematski zbornik. Beograd: Fakultet za poslovne studije i pravo Univerziteta "Union - Nikola Tesla": Fakultet za informacione tehnologije i inženjerstvo Univerziteta-Union "Nikola Tesla". 2020.
18. Swidler, A (1986): „Culture in Action: Simbols and Strategies“, American Sociological Review 51.
19. Sxepard, A., Dommelli L., Setx, T. (2021): The influence of organizational responses to the Covid-19 pandemic on employee outcomes, Cambridge University Press, May 24.
20. Sxepherd, X, MacKendrick, N., Mora M. (2020): „Pandemic Politics: Political Worldviews and COVID – 19 Beliefs and Practices in an Unsetted Time“, Journal Home, 2. November.
21. Terri, M (2021): Comparing Covid-19 Vaccines: Timelines, Types and Price, BioSpace, June 15.
22. The Universal Declaration of Human Rights, 10 December 1948.
23. Thompson, W, (2021): Social media and COVID – 19: A global study of digital crisis interaction among Gen Z and Millenials, WHO, 26 March, https://www.who.int/news-room/feature-stories/detail/social-media-covid-19-a-global-study-of-digital-crisis-interaction-among-gen-z-and-millennials
24. Van der Vielen, V., Barrios, S (2021): „Economic sentiment during the Covid pandemic: Evidence from search behaviour in the EU“, Journal of Economics and Business, May-June.
25. Veber, J., Busxuev, M: „Kome koriste fake news o koroni“, DW, 6.08.2020. https://www.dw.com/bs/kome-koriste-fake-news-o-koroni/a-54434703
26. Vinne, R. (2016): Five Things Everyone Should Know About Public Relations, Forbes, January.

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# MANAGEMENT - ETHICS, ECONOMY AND ECOLOGY IN THE CRISIS OF THE C-19 PANDEMIC

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***Abstract:*** *Although the crisis of the Covid - 19 pandemic is not over, the question arises as to what effects it will produce on three relatively neglected areas: ecology, economics, and ethics. The treatment of these issues IS especially lacking from the point of view of their inter-connection and mutual influences, but also of the integrated influence on other areas of economic and social life.*

*It should be borne in mind that at the global level even before the pandemic there were various crises such as: crisis of climate change and challenges, financial, political, war conflicts and conflicts, floods, earthquakes, migrant crises, overcrowding of urban areas while at the same time leaving rural areas. etc. The crisis of pandemic 19 further complicated the situation, and it was especially difficult in countries that were simultaneously affected by additional types of crisis.*

*On the other hand, the question arises as to whether and to what extent the crisis of the Covid - 19 pandemic may have even had a positive impact on ecology, economics and ethics, and assessments of that impact in the future. This is all the more important, if we keep in mind that in the literature, and in ordinary life, a crisis, and even a pandemic as a global crisis, is often considered in a negative context, that it as a rule has no benefits, etc.*

*We fail to understand that every crisis, even the crisis of the Covid - 19 pandemic, is a radical and fundamental change. We must realize that changes, even crises, are an integral part of the life and work of every living being, including man, ie organizations and states. If changes are a condition of life, then a pandemic should be considered as a phenomenon that has dangers and threats, but also its chances, ie.*

*that crisis, under the pressure of abnormal situations and the struggle for survival, creates new opportunities that would not be provided or used in normal times.*

*There is no doubt that these influences and mutual iterations are already evident, and that they will be even more evident in the future. It is obvious that the mutual influences will not be linear, which means that a pandemic can be harmful, but also be beneficial when it comes to the environment. When it comes to the economy, the pandemic has encouraged some innovations in certain industries, redesigned traditional jobs and organizations, but it has also destroyed certain economic activities, organizations and certain professions.*

*Finally, ethics as a form of social awareness and culture has also shown its weaknesses on certain issues, especially when it comes to trust and solidarity during a pandemic, which can be useful to formulate certain strategies to improve these elements in a crisis, given that in crisis many possibilities, ie resources, are limited and not available for use, especially when it comes to prohibitions and limited movements of the population, of the old, sick, poor, or vulnerable groups.*

*The paper deals with the impact of the pandemic on ecology, economics and ethics, as well as the reversible impact of these phenomena on the crisis of the Cavid - 19 pandemic, ie whether Covid helped to make certain changes that would not normally be made, or would be introduced by using much more energy and time.*

*The aim of this paper is to point out the changes that have taken place during the pandemic so far, as well as assessments, ie possible trends in this issue in the post-pandemic period. It is estimated that the "fight" with post-pandemic crises will be more complex and uncertain than the fight against the C-19 virus. This should be borne in mind and we must prepare for life after the pandemic. Man will successfully resolve this just as he has been resolving previous crises; man will even be further strengthened with new knowledge and experience, in order to prevent future crises, ie to deal with them and responded in a better manner.*

***Key words:*** *3E, Ecology in a pandemic, Economics in a pandemic, Ethics in a pandemic.*

## METHODOLOGY

This paper is based on a review of the available literature, case studies, statistics from a national or global lists. Reports, articles, papers dealing with the issues of ecology, economy and ethics in the crisis of the C-19 pandemic were used, as well as the generalization of experiences and drawing of appropriate conclusions and laws.

The limitations that objectively exist in this paper are that the virus pandemic continues and its end is not in sight, and that even after the end of the health crisis, economic, financial and other crises that indirectly affect general economic growth will occur or continue. and development. Of course, an additional limitation is the insufficient amount of information, but also the unreliability of national information systems in terms of the number of infected, dead, or economic growth measured by gross domestic product, and the lack of moral principles, ie questioning certain moral principles and customs that indirectly affect the course of the crisis itself, but also life and business after the end of the health crisis.

We also have here different methodologies for measuring the outcomes of individual conditions, such as the number of infected, dead, or different measurement of business performance, as well as different data from international financial and other institutions. However, despite these limitations, it is possible to determine the state, ie trends of individual phenomena.

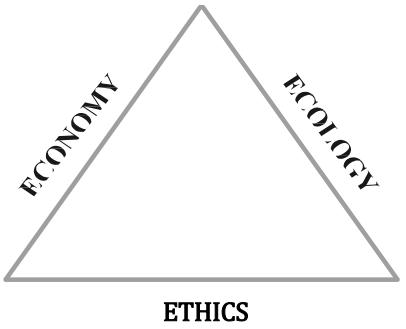
## INTRODUCTION

The fact is that the crisis of the Covid-19 pandemic has entered its second year of existence. Globally, it has caused great damage, especially when it comes to people's lives, but also impaired health, especially among the elderly, the sick and the poor. Analyzes show that the pandemic is being talked about in a negative context, which is natural, because it threatens, but also takes millions of human lives. It has led and continues to lead to economic shock, unprecedented in the previous economic history, because it destroyed numerous industrial branches, broke long-term partnerships in the country and abroad, and led to structural changes that were not planned. The pandemic has called into question the trust in the pharmaceutical and medical professions, where profit is at the forefront, and patients, as the weakest link in the chain of health care delivery remain neglected, ie treated as numbers. This fact is present in normal times too, where it has been shown that the pharmaceutical industry has great power and influence on the medical profession and that their

connection often violates traditionally strong medical ethics, and even medical statistics in the effects of certain vaccines, their quality, etc.

It turns out that integrating and holistic observation of: ecology, economics and ethics, as well as observing and researching their mutual relations, is a key factor of progress at the national and global level. The additional alpha plus is the fact that such an integrated system should be observed and connected with other sciences and activities. Their mutual relations should also be treated as a whole in order to fully observe the factors and influential forces in mutual relations.

In this paper, we try to resolve the dilemma which of the above elements is more important, which precedes what, ie what is the cause and what is the consequence. Although there are different approaches, experiences and practices of pandemic crisis management tell us that everything should be based on ethics, ie morality, then we should take into consideration ecology and finally economics, which can be relatively well shown in the following figure (Radosavljević, Anđelković, Radosavljević, Anđelković, 2020, 361):




From the previous figure it is evident that the starting point of every action, or inaction, is ethics, ie morality, as a form of social consciousness that has experienced a dramatic decline in modern conditions, ie it has collapsed. The pursuit of profit, as the basis of every activity, has called into question many ethical principles, ie traditional values and beliefs that prevented people from committing immoral and unacceptable activities. Just how important morale is can be seen in the fact that many believe that the crisis, even the environmental or health crisis C-19 is the result of immoral and irresponsible behavior of people, even by highly competent experts, the so-called "White coats" who in a sophisticated way perform immoral actions and activities.

The sides of the triangle are ecology and economy, noting that ecology has priority, because it is shown that irresponsible attitude towards ecology leads to

numerous natural and social disasters, such as: floods, droughts, earthquakes, infections, etc. Today, there is a rule that no project can be accepted until the positive assessment is provided by environmentalists. In other words, it is possible for the project to be technically feasible and at the same time economically viable, but if it violates the ecosystem, or does not provide sufficient guarantees that it would protect the environment, the project or other activities in the ecosystem cannot be performed.

Economy is the final dimension in every purposeful human activity, because everything man does is done for the sake of a better quality of life, ie better standard of living. Economy is important, but if economic effects are achieved while violating ethical and environmental standards, business success in a broader context is called into question, which is why many companies and even states have been the subject of national and international, ie ethical courts (Radosavljević, Anđelković, Anđelković, Radosavljević, 2020, 360-374).

However, the pandemic crisis also shows certain benefits. This especially refers to the reduction of environmental pollution, ie air, water and soil polution; further, there is reduction of noise, reduced consumption of industrial water in the meat processing and textile industry. The pandemic has accelerated and continues to accelerate changes in attitudes towards the natural order, but also towards ecology as a science of the future in which ecologists will evaluate the justification of some projects or endeavors, and if the projects fail to meet environmental standards, they cannot get a positive assessment.

Another alpha plus should be added to the above, and that is the politicization of the Covid 19 pandemic. It generally manifested itself in all three analyzed elements: ethics, ecology and economy. Crisis headquarters in transition countries were dominated by politicians, and their decisions were not based on assessments by public health institutions and the medical profession. It turns out that in many cases, a pandemic has been exploited to enrich, or strengthen authoritarian systems, or to discipline or manipulate the population in order to demonstrate the ability of governments through alleged success in treatment against mass infection. Crisis headquarters took over the role of medical experts and managed the crisis in such a way that political and partisan reasons were decisive in making appropriate management decisions regarding the crisis. In this context, the actual number of deaths or infections was not shown, in order to present the situation better than it really is. The rate of economic growth was also hacked, and many immoral actions were covered up with numerous explanations and justifications. These statements show and prove the necessity of connecting ethics, ecology and economy, as the three

most important factors through which the greatest political power can be achieved, especially if these elements are viewed holistically.

Experience from the C-19 pandemic shows that this crisis must be managed, insofar as it is not partial, nor common, or a crisis about which the causes and ways of elimination are known. The crisis is spreading fast, and in the interconnected global world, no country in the world was speared. Given that the pandemic crisis is discussed mainly in a negative context, the emphasis herewith will be placed on the conditional benefits and positive changes that the pandemic has brought.

## 1. HOW TO PREVENT INFECTION AND END THE COVID-19 PANDEMIC CRISIS

The pandemic as a global crisis caused by the C-19 virus produced the biggest health and economic crisis in the third millennium. The effects of this crisis will be seen after it ends, but also after several decades, because it is estimated that after the health crisis there will be a post-pandemic crisis that will affect all areas, and it will be far more complex to limit and prevent negative impact. The resolution of the health crisis is in sight with the invention of the vaccine, but the problem arises in its use, since there is an anti-vaccination lobby that expresses doubts about the expediency of approved vaccines, due to the speed of its approval and insufficient testing. It must be stated that vaccines in modern conditions are a relatively reliable drug that prevents infection and rapid spread, ie transmission of the virus to other people.

Nevertheless, in poor countries and countries that do not have sufficient vaccines, national public health institutions, as well as the World Health Organization, propose the introduction of non-medical measures and mechanisms, such as: closure and restriction of population movement, physical distance, reduced concentration of people, introduction of protective equipment, and maintenance of hand hygiene, more frequent use of disinfectants, ventilation and ozonation of the premises, etc. It turns out that India is the country that has restricted the movement of the largest number of people, ie over 1.3 billion people, primarily as a preventive measure. These measures were also applied several centuries ago, and it is incomprehensible that in the third millennium, science did not have an answer to the appearance of a new and unknown virus that more or less surprised the world on a global level.

It is clear that the war against the vaccine can be won with a quality environment, quality of living standards and public health of nation states, which is a logical

statement, because mass infection is also an environmental problem. Increased use of medical equipment in the fight against the pandemic, creates a new problem, the so-called medical waste, which already today represents a serious environmental problem and endangers the environment, because it has been proven that the C-19 virus stays on plastic and stainless steel for up to three days. According to the data, "Wuhan produced 240 metric tons of medical waste in China every day at the time of the crisis, which is almost 190 metric tons more than usual. The situation is similar in India, Bangladesh, etc" (Tanjena, Islam, 2020).

The second measure in the prevention of infection with the C-19 virus is to develop awareness of the validity of the vaccine as a drug that, thanks to modern technologies and science, has shown a high degree of reliability in preventing infection. It turns out that it was far easier to invent the vaccine against C-19 than to use it, which is confirmed by the fact that a large number of vaccines in Serbia remained unused. Due to the above, the government has even financially stimulated those who are vaccinated, and certain sectors (internal affairs, the army, health workers, old people's homes, etc.) have even been vaccinated by certain decrees. It turns out that this measure was not stimulating, but it further increased the suspicion of the need for vaccination, because those who do not believe in the vaccine as a saving solution will not be vaccinated with minimal financial stimulation.

Every country needs to prepare for a pandemic, so when the crisis happens the country can react quickly and enabls patients to quickly obtain medical assistance. Every country should have health infrastructure, ie technical equipment, specialized personnel from medical, but also technical, logistical and other services, because it turns out that the pandemic is a multi-dimensional problem that requires multidisciplinary teams to resolve it. Health facilities and medical equipment, furniture, the environment of covid hospitals, covid dispensaries and centers should also be environmentally sound.

When building and equipping health facilities, there is the greatest risk, because experience shows that the construction of specialized health facilities for a pandemic is an irrational job, given that pandemics occur occasionally, that they are temporary, especially when there are vaccines that can prevent infection . In other words, it is not economically viable to build special facilities for the C-19. Hence the message that in normal times, states need to prepare universal and flexible health facilities that can quickly turn into covid hospitals and covid clinics. We should be able to label existing health facilities as covid space when a pandemic occurs.

A pandemic must be managed, as is the case with any type of crisis, and above all, we must manage environmental challenges. The emphasis is on diagnosing the causes and the beginning of the crisis, and creating an adequate information system. We must provide certain elements of artificial intelligence and robots that can be used in covid hospitals with appropriate connections, so that medical staff do not have to enter the hospital rooms of patients with the virus. Statistics in a pandemic represent a significant mechanism for monitoring the intensity of the crisis, its peak, and predicting its disappearance. For this, it is necessary to develop an appropriate methodology, as a standard, and specially trained staff who will report to the appropriate decision-making management bodies in a timely manner.

Precise analyzes, as well as experiences from the 2020 pandemic, show that centralized and linear decision-making is a great danger for the "fight" against the virus. The government often made the same decisions for large urban and smaller rural areas, for regions with low population as well as for areas where there is a lower level of population, etc. The epilogue of the above is that the areas in the mountainous areas, as well as in densely populated places, had been closed. It is shown that decentralization is a good solution in making health decisions, ie there should be freedom for individual regions to make their own decisions on prevention and treatment of C-19.

Communication with the public is a non-medical, but very important measure. This job must be done by educated professionals who are trained to communicate with the public, as well as with employees, ie patients, their families, etc. The practice that communication is performed by ministers, heads of crisis staffs, hospital directors, virologists and other medical experts is bad, because wrong communication can cause great damage to the effectiveness of treatment from mass infection. It could cause general confusion due to wrong or unclear words or sentences.

## 2. TACTICS IN MANAGING THE CHALLENGES OF A PANDEMIC CRISIS

The challenges facing the world on a global scale are great. The problem is that there are no clear and scientifically validated answers, especially in the non-medical sphere. It turns out that the world is not prepared for answers to the challenges imposed by the crisis of the C-19 pandemic. Economic, legal, organizational and management regulations, ie practices are not adjusted to the conditions of mass

crises, such as infection, which is why there are no appropriate answers. As a result, we have a large number of the dead, but also economic shocks caused by the pandemic.

Related to the previous is the regulation of the market of vaccines, protective equipment and medical technology used in the fight against C-19 infection. In the initial stage of the crisis, and also in the epidemic in India, the problem of insufficient vaccines became evident, which had a large number of deaths in inhumane and devastating conditions as its epilogue. It is a matter of eliminating bottlenecks in production. We must therefore increase production capacity, and thus global supply and access to the C-19 vaccine portfolio. Global supply chains must coordinate and expand investment in infrastructure for future epidemics. Orientation to the view that each country is responsible for the timeliness and number of pharmaceutical and medical tools is unacceptable. This is especially true when it comes to poor countries, because the world cannot get rid of the virus if every part of the planet is not protected, vaccinated and has quality public health. There must be awareness that the vaccine is a global public good and the most effective mechanism for prevention and mitigation of the effects of C-19 virus infection.

Related to the previous is the adoption of certain tactics in response to the existing challenges as well as the challenges that may arise, as follows: (Yadav, Weintraub, 2021).

Improve the flow of raw materials and materials for the production of vaccines, which means removing customs and other barriers to the export of raw materials needed for the production of vaccines; refrain from introducing new traffic barriers,

Harmonize regulatory processes. This tactic refers to the integration of national regulatory institutions that check and approve the use of vaccines, which have already passed certain experiments and passed that check through the World Health Organization as a global organization in charge of health in the global world. In this context, it is necessary to administratively harmonize regulations, in order to accelerate the flow of vaccines, as well as information and other resources.

Expand vaccine production capacity. Analyzes show that the production of vaccines and other pharmaceutical and medical products increases at the time when a health problem arises. To avoid that, it is necessary to prepare for pandemics in normal times. Of course, one should be rational here, because it turns out that pandemics are periodic diseases that occur occasionally and last temporarily, which puts the health economy in front of new dilemmas, and that is whether to intensively open capacities for vaccine production when its end is seen, whether there is a

possibility of regional integration in production, and to what extent a public-private partnership, ie the private sector, should be introduced in this process.

It turns out that the risk dispersion would be greater if the private sector were involved in production and distribution of vaccines. Also, during the pandemic, it would be better if the existing capacities were adapted for the production of other vaccines such as 'Zika, Yellow fever, diphtheria, pertussis, tetanus, hepatitis B and other vaccines or drugs." Here it is necessary to redefine the patent right, ie abolish bans or protection of intellectual property when it comes to pharmaceutical products for the treatment of mass diseases, as well as the abolition of protectionist measures for the import of necessary equipment in certain countries.

Introduction of intermediaries in the supply chain. Although in traffic, ie economic practice, intermediaries are often marked as unnecessary and superfluous, because they increase the costs of certain products, in the procurement of vaccines, as well as other consumer goods, the introduction of intermediaries in procurement is suggested. The reasons for this are the fact that manufacturers should dedicate themselves to production, and contracting and distribution, to leave to specialized intermediaries in the field of retail, or wholesale. The wholesaler would have different types of vacations, which would enrich the choice of the same, and at the same time, the manufacturer would not have to conclude contracts with a large number of countries or companies, but the intermediary would do it. The introduction of intermediaries would even reduce costs, ie the cost price, which would benefit producers many times over because they would increase their price competitiveness. We should not neglect the fact that intermediaries can also invest in production capacities and build their image, which would all improve the production potential in the production of vaccines against Covid - 19, but also other vaccines, ie medical products.

From the above, it can be concluded that the challenges related to the fight against the C-19 pandemic are great, but that there is untapped potential in the production, distribution and cheapening of vaccines against C-19, as well as other pharmaceutical products. It turns out that greater coordination should be established between different actors in marketing channels, and legal, technical and organizational barriers in the flow of the vaccine should be removed, because this increases the reliability of protection at the global level.

## 3. COVID ETHICS AND C-19 PANDEMIC

Ethics is, as stated, one of the most important elements in crisis management of the C-19 pandemic and probably the main source of the pandemic, because unethical and immoral behavior and human attitude towards nature is one of the main sources of numerous infections, diseases and mortality. It affects the other two analyzed elements, namely: ecology and economy, and all three elements, especially if they are integrated, reduce or prevent the occurrence of a pandemic, as a form of mass infection. This is important to note, because the theory of the system warns that the improvement of one element in the system reflects on changes in other elements, but also on the whole system, ie the environment in which the system operates.

Precise analyzes show that there are ethics in each of these elements. It is about environmental and economic ethics. However, in ethics itself, there is ethics, which is often forgotten. This is logical, because the interdependence between ethical conduct in ecology, ie the economy of infection, has been proven. It turns out that "the response to a pandemic should be guided by ethical principles: fairness, respect and transparency. However, the pandemic is increasingly facing fear, discrimination and interventions that lack evidence which raises public health concerns." (Kase N. Et al).

The C-19 pandemic has raised a number of questions regarding ethics, that is, morally and socially responsible behavior. History teaches us that in difficult times, people help each other, show solidarity, try to reduce pain, etc. People often put their life at risk in other to save the life of another person. This is embodied in the famous sentence of a girl who, when asked what she would like, answered: "I would like there to be a war, for all people to be friends one day." The crisis of the -19 pandemic violated numerous moral principles in a very short time. This is especially true in terms of "readiness, knowledge sharing, intellectual property rights, environmental quality, along with serious limitations in terms of the system's readiness to respond to this huge public health crisis." (Tanveer, 2020,1.).

One year of experience in the fight against C-19 shows that ethical dilemmas are especially pronounced in less developed and middle developed countries, where objectively there is less developed and reliable public health. There has been a lack of morale in international assistance, but also when it comes to ethics in certain countries when decisions were made on the priority of treatment, ie whether to give preference to treatments and the provision of respirators to younger and more promising, or older people. It turns out that the C-19 basically changed the way of thinking, ie behaving and acting in a relatively short time.

Discrimination as an immoral phenomenon has put the elderly, the poor and the sick, ie the homeless, in a particularly difficult situation. The number sixty-five plus is the key word, because people of this age had numerous restrictions, ie prohibitions on movement, going out, socializing, etc. The elderly in nursing homes were especially discriminated against; they lost the battle with the covid without seeing their loved ones for months. This has led and will continue to lead to mental disorder and negative memories of the crisis for which states were not prepared. It turns out that the medical staff showed a high degree of professionalism and ethics, but that the decisions of the non-medical profession that was in charge or participated in management decisions were not only unethical but also irresponsible, and the non-medical decisions of many crisis staffs globally were also in dispute with common sense. (Radosavljević, Anđelković, Anđelković, Radosavljević, 2020, 358-361).

The C-19 pandemic also showed unethical treatment towards medical staff, especially those who were in covid hospitals and who were in direct contact with infected patients whom they served. Medical personnel showed a high level of ethics and sacrifice to save patients from death, but citizens in many countries did not act responsibly to reduce the influx into covid hospitals and thus facilitate the work of medical and other professions that were in the function of treating people. Medical staff encountered major challenges in limited, or lacking, resources, both in terms of space and in technical equipment. All of the above endangers the mentality of this medical staff, because of the high concentration of patients and the large number of deaths. All this leaves serious repercussions on their lives, especially among young workers and medical staff.

Despite state interventions, the pandemic has increased the number of households struggling to provide a living wage. In a difficult situation are the old, the sick and the poor, that is, those who have a small income. Often only one family member provides an income which has to support many family members and several generations. There is an inability to pay rent and to service loan payments regularly, especially for the population with a lower level of education. During the pandemic, forced evictions of entire families took place, due to the impossibility of repaying the loan, or because they did not pay their utility and other bills. Inclusive and homeless people were in big trouble, due to incarceration and inability to meet basic human needs.

Solidarity was lacking in C-19 and the term should be understood as "a political means by which certain goals are achieved, which is why it is necessary to develop awareness that every life problem of an individual is at the same time a problem of

society or a social problem. The only possible way to resolve this problem is to view it as a social, ie common problem." (Ilić, 2011, 96).

Thus, there are no individual problems, but all problems are at the same time social and organizational as well. This is logical because an individual person who has personal problems is not productive; he is burdened and unable to dedicate himself to his work, and especially he is not able to produce ideas and create an environment for their implementation.

For the promotion and application of ethics in the pandemic, it has been shown that solidarity and trust are crucial and that people should be treated as living beings who are worthy of respect, regardless of their characteristics and specifics. It is also emphasized that people should be treated morally even after the healing process is completed, ie in the post-pandemic period. The success of Sweden's fight against the pandemic was based on solidarity and trust as the two most important pillars of every life in a community, which is confirmed by the following statement: "Sweden's strategy was based on citizens' trust and solidarity on coercive measures and lockdown. The question is, however, whether this strategy can lead to the achievement of set goals such as the spread of infection and the protection of vulnerable groups. The basis of the Swedish strategy in the fight against C-19 is voluntariness, that is, voluntary guidelines." (Collste, 2020).

The lack of solidarity in the EU during the pandemic is reflected in the fact that some countries of this group did not have the emotions and understanding to help, for example, Italy with medical equipment. Italy is a country that is one of the founders of the EU .It is paradoxical that the EU was specifically formed in order to solve individual problems more successfully together, which did not happen in the pandemic. The situation is the same at the national level, where isolations, prohibitions and restrictions on basic human rights have led to forced isolations that have led to an increase in domestic violence, including murder and suicide.

A special challenge facing ethics in the pandemic is the issue of procurement and distribution of vaccines and other protective equipment, ie medical devices, where procurement was non-transparent. Many companies even increased the prices of their products, and countries often procured without sufficient and minimal analyzes, which called into question the regularity of their procurement, but also increased distrust in general about the need for excessive amounts of vaccines against the C-19 virus. It turns out that “long before the first Covid-19 vaccines were approved, it was known that their fair influx to populations around the world would be a huge challenge. Now the failure is obvious, which is confirmed by the problem

of the catastrophe with infection and mass deaths in India. The world must now reorganize itself in order to significantly accelerate the production and distribution of vaccine stocks." (Iadav , Waintraub, 2021).

That is why managing a pandemic and establishing ethical principles requires wisdom, ie "balancing issues that may be in conflict, such as the health of the population and individual civil liberties." That is why these jobs are done by highly competent experts with moral integrity. The problem arises when decisions, due to ignorance of the functioning and behavior of the C-19 virus, often change, ie that they are in conflict with logic, or that they are impractical and as such problematic. It turns out that some countries do not publish the names of the people who propose measures, and governments still take measures to prevent the spread of the virus. "Experience from the peak of the pandemic tells us that when the passions are too high, experts face abuse, and even the threat of death on social networks, by those who do not want to accept a friendly advise. In this case, transparency runs counter to our commitment to protect the mental health and well-being of our professionals." This situation was also present in Serbia during the peak of the pandemic. (Isaacs, 2020).

Trust as a form of social consciousness has encountered great challenges in the pandemic. The problem with trust is that it is hard to gain, and very easy to lose. The traditional belief in the medical profession has been disrupted in the pandemic due to the adoption of illogical measures. Certain elements of the crisis have been used in many countries to consolidate power and strengthen dictatorships. Promoting the use of vaccines as a cure for C-19 with additional financial, material or other types of stimulation is counterproductive and should be eliminated, because it creates additional mistrust among the population, that someone is vaccinated for financial compensation, and not because they believe they should be vaccinated in order to protect human health and lives.

The power of the pharmaceutical industry is evident in normal times; in covid situations numerous rumors and conspiracy theories have called into question the trust in the medicine that is offered. This has gone so far that an antivirus lobby has been created. In the Republic of Serbia, there was even an order that members of the army and police were obliged to be vaccinated. Although it is a matter of good intentions, any decrees such as restricting the right to move, obliging certain groups to be vaccinated, represent violationa of basic human rights. This further goes against ethical principles. It is useful herewith to state the following statement of Simon Sinek: "In order to develop a sense of trust, a sense of security must be created when

expressing oneself, and that lies in the fact that even when a person makes a mistake, he must admit the mistake and expect his boss to support him." (Sinek, 2019, 103).

An effective fight against the virus and infection must be based on respect for the basic moral values that are built in normal times, and especially on health equality, ie on the same conditions for the protection of all regardless of age, social structure, gender, etc. It is necessary to prepare the population to be ready for a pandemic, or to face it with as little risk as possible. "The experience of the C-19 pandemic in the Republic of Serbia has shown that the functioning of the World Health Organization must change. Furthermore, the national public healthcare must change, especially towards patients, health workers . We must also introduce changes when it comes to the relationship between factual and alternative medicine. Trust, truth and altruism are especially important in these phenomena." (Radosavljević, Anđelković, Radosavljević, 2020, 86 -112).

## 4. ECOLOGY AND C-19 PANDEMIC

We know that the pandemic crisis is a kind of ecological crisis, and that the pandemic is a health crisis that has affected the world on a global level. The question is whether and to what extent climate change, air pollution, warmer or colder weather affect the emergence of pathogens, and especially the emergence and spread of the virus. The answers to these questions are necessary in order to take appropriate measures, insofar as infectious diseases have been shown to be on the rise, pandemics are more frequent, and in the global world of great interdependence the virus is transmitted at high speed around the world.

It should be immediately stated that there is not enough evidence that the ecological environment contributes to the spread of the virus. However, it is clear that climate and other natural changes indirectly change or disturb the ecological balance in flora and fauna and the universe in general. It can be indirectly concluded that insisting on hygiene, washing hands, establishing physical distance between people in order to prevent or slow down the occurrence or spread of the Covid - 19 virus prevents or slows down infection. In other words, that hygiene, a healthy environment and human health are in the function of reducing the risk of contracting the C-19 virus.

The greatest impact of the ecosystem on the occurrence of infection is shown through climate change. As the planet warms up, it calls into question the flora and the disappearance of forests as an important element of the ecosystem. Droughts,

deforestation, together with forest fires, increase the migration of animals. They leave their permanent habitats, come into contact with other animals, and this creates the possibility of transmitting pathogens from one animal species to another, and thus transmission to humans.

Air polluted with heavy metals impairs human health and makes it more likely that in regions that have poor air quality, they will get sick easier and faster, but that they will also have a higher mortality rate. Recent research by Rachel Nethery and others on this issue has shown the following: "that people living in places with poor air quality are more likely to die from Covid-19, even when other factors that may affect the risk of death are taken into account, such as existing medical conditions, socioeconomic status and access to health care. This research coincides with the discovery that people who smoke are more likely to have respiratory infections than non-smokers." (Bernsteinom, 2019).

Noise also has a negative effect on human health. Everyday experience shows that people, especially the elderly population who are most exposed to the risk of infection, want quiet places, ie places where there is no noise pollution, as an increased level of sound caused by various human activities, ie caused by machines, vehicles, construction machines and works, etc. It is shown that the increased noise level leads to harmful effects on the animal world because wild animals, like humans, experience disturbance and leave their habitats, thus changing the eco design of a certain area; this increases the possibility of infecting other animal species or populations. Medicine has determined that increased noise has a negative effect on health and that together with cardiovascular disorders, hypertension, that is, sleep disorders, it leads to dysfunction of the organism. It is estimated that over 360 million people worldwide are prone to hearing loss due to noise pollution. (Rume, Islam, 2020).

The pandemic crisis - 19 is produced by a virus, a tiny living being that cannot be seen with the naked eye, but which is at the same time adaptive, able to change and adapt to conditions, in order to survive. Therefore, one can learn from its behavior, especially in developing man's ability to adapt to certain changes, whether natural or artificial changes, which is logical, because the time of revolutionary change requires rapid adaptation and rapid transition from one cession to another, even during one day.

## 5. COVID ECONOMY AND C-19 PANDEMIC

It is clear from the subtitle that there are two key phenomena under consideration: the covid crisis and the covid economy. The Covid crisis is actually a pandemic crisis caused by the C-19 virus that has spread all over the world, and its proclamation is done by the World Health Organization. This global organization also declares the end of the pandemic. This imposes the need to state that the end of the pandemic cannot be declared by individual countries, which means that the pandemic continues. This fact is a limiting factor in drawing the final consequences and conclusions, ie reguralities during the pandemic.

It turns out that the economic forecasts are difficult even in normal times, due to the participation of a large number of variables. When it comes to forecasts and predictions in times of crisis, it is even more difficult, and in health crises such as epidemics or pandemics, there are a large number of unknowns, there are changing conclusions and laws that make it impossible to draw scientific evidence in a short time. This scientific evidence would serve as a basis for making health decisions, but also economic, political and other decisions. The reasons for this are numerous. However, it seems that several key factors are predominant; they make it difficult for researchers and analysts to predict the future even in a shorter period of time, namely: (Pohlman, Reinolds, 2020).

Lack of data on when the pandemic could end. Mathematization and determination on this issue did not give good results. Attempts to mathematize the behavior and duration of the virus did not provide reliable data for crisis management, and if it could be expressed mathematically, the problem would not actually exist, or it would not exist in its current form.

Speed of changes in economic, but also in other policies. This factor arises partly from the first factor, due to numerous unknowns, which dictate more frequent changes of strategic decisions, and even the adoption of opposite decisions in relation to the previous ones. It turns out that even when a problem is diagnosed, that the administrative procedure takes a long time for its parliamentary adoption; during the implementation we often find out that more changes occured in the meantime

The pandemic has called into question the reliability of economic and other data, and thus the possibility for quality macroeconomic analysis, ie for the creation of certain macroeconomic models. In transition countries, including the Republic of Serbia, numerous data were suspected, where two completely opposite directions became evident: first, that the number of tested, infected, cured and dead was minimized, while on the other hand, the economic decline was exaggerated or

reduced, in relastic to gross domestic product. Survey research has shown a reduced percentage of responses, both due to closure, increased fear and panic, which reduces the number but also the quality of sampling. "Data from the US Bureau of Labor Statistics for March 2020 show that the response rates of institutions and households have fallen by nine percent, or ten percentage points, compared to their recent average."

Economic forecasters and planners are not trained to understand epidemiology, in order to better understand the likely development of coronavirus in each country. The problem here are also health workers who know medical statistics, but not the basic economic laws and principles to a sufficient extent.

The C-19 pandemic crisis has had a significant impact on the national but also on the global economy. The impact caused by the virus during the year and a half of its action is compared to a shock, ie a tsunami, which has not been recorded in the last few decades. It seems that the biggest consequences were felt by the economy, that is, business. The speed of the spread of the Covid - 19 virus directly affected the spread of the collapse in the economic sphere. As a rule, it "causes short-term fiscal impact and long-term economic impact on countries around the world. Efforts to control the pandemic include quarantine, preparation of health facilities, isolation of infected individuals, procurement of new equipment and consumables, ie antibiotics, medical supplies and personal protective equipment." In other words, the pandemic increased costs on the one hand, and reduced revenues on the other hand, due to the closure of the economy which is a double negative effect. (Sxang, Li, Zhang, 2021).

In order to effectively manage the covid economy, or the economy in the postpandemic period, it is necessary to know the characteristics of the C-19 virus. Medicine has not been able to define its characteristics, but it is certain that it has some common characteristics with other viruses from the same group, but that it also has a number of specifics for which special therapy and treatment should be prepared. It is certain that the "Covid - 19 pandemic illustrates many of the characteristics of a pandemic, such as uncertainty, changing circumstances, and rapidly changing recommendations. Responsible planning and resource allocation becomes a major factor if the health service is not able to cope sufficiently with the number of sick patients who should be provided with optimal care." Experience shows that the holistic view of a pandemic should take into account the specifics of the pandemic in individual countries, "given the huge differences in epidemiology, the speed of preventive measures, the level of research and also the emphasis that each country puts on civil liberties." (Isaacs, 2020).

Dilemmas often arise in a pandemic crisis: life or the economy, which best shows how important these two phenomena are for the general survival of humanity. In the pandemic crisis, the medical profession put people's health and lives in the forefront, which was to be expected. This attitude was accepted by the largest part of the population, which is natural, because life and health are the greatest earthly values, which at the same time represent the condition of all other actions or inactions.

On the other hand, businessmen, entrepreneurs, and even the political elite, ie the government, have often pointed out that in parallel with life, the economy is also important, as the final dimension in every human activity. Without the economy, there is no life in the long run, or it is indirectly called into question, especially if the population is unable to meet its basic needs. In times of crisis ie in pandemics, new needs appear in medicines, health facilities, medical technologies and tools, but also when it comes to protective equipment, disinfectants, etc. leading to increased costs. In conditions when the pandemic closes business and entrepreneurial organizations, there is a gap between income and expenditure, which endangers the health and lives of people.

However, there is no dilemma, because in modern conditions it is necessary to introduce a new paradigm instead of either-or, and that is and-and, which means both life and economy. Life, as stated, is a condition for the economy to function, and a healthy population is productive and able to create far greater value compared to those who are sick and insufficiently motivated. Successful economies in return create a quality standard of living, improve population satisfaction and are able to provide a better perspective for future generations.

In general, the pandemic has done great damage in the last two years. Precise analyzes show and prove that all parameters by which the success of the economy and society is assessed are declining, and those criteria by which the failure of the economy and society is assessed are increasing. International and national companies have found themselves in losses, supply chains have been disrupted, and cash flows in the market have been disrupted. Millions of people lost their jobs due to the closure of the industry. The GDP of many economies has been reduced under the influence of business interruptions and the balance between revenues and expenditures has been sharply disturbed. (Cxang, Li, Zhang, 2021).

Thus, infections and closures have reduced productivity. Unemployment has risen. Revenues have been reduced, personal and investment spending has been reduced. The poorest and most vulnerable have had their condition even worsen. The GDP lost during the pandemic is estimated at around 5 trillion in 2020. Economic

concerns have affected mental health. Domestic violence has increased, there is increased consumption of anti-depressant drugs, and suicide rates have increased. Physical health also suffered. According to research in the UK, 50% of people have gained weight, due to prohibitions, or restricted movement, and 30% of people have delayed treatment for non-covid disease. It will take a long time to assess how C-19 affected the birth rate. It seems that the birth rate will fall due to the economic decline, but also due to the mental disorders that will inevitably occur.

In order to avoid infection, the consumption of protective equipment has increased, in the sense that it is used once in shorter intervals than before. For example, the consumption of protective masks has increased sharply and is used on a buy-use-throw basis, which was not the case in the pre-pandemic phase where protective equipment was not even used, and when it seemed, the principle would be: buy-use-wash, and use-wash- throw. There is no doubt that, regarding this issue, a solution should be sought in the circular economy, ie in the disposal of used masks as a potential source of infection in reuse. The elimination of plastic from use has been delayed due to the pandemic, which additionally infects the soil, but also water surfaces, which destroy both flora and fauna in water surfaces.

The design of supply chains and the functions of retail facilities have changed, as well as the way of buying and consuming food. The traditional marketing channels for consumer goods have disappeared, ie intermediaries have been eliminated or reduced, and direct purchase was established with the use of internet technology, ie e-commerce. Milk, chicken, and eggs often ended up in landfills, and there was also a special challenge with procured vaccines that had a limited shelf life and were disposed of uncontrollably with other waste.

Mobile banking has experienced expansion. Many banking and financial transactions are performed from the "armchair", we have now electronic wallets and electronic money transfer, as well as the emergence of electronic money; all this has significantly changed traditional banking. The structure of bank balance sheets will also change significantly, where instead of buildings and physical assets, financial capital will gain importance.

In the field of research and science, many projects have been suspended, cooperation with partners has been suspended, scientific conferences, seminars, exchange of scientific information, laboratory and other tests have been suspended. Nevertheless, research in the invention of vaccines has proven to be rapid and effective, with numerous doubts about the quality of vaccines, precisely because of the speed of invention and application. Another problem arises here, and that is that

the pharmaceutical industry is not interested in developing and producing a vaccine against the virus due to occasional use, but also due to insufficient profitability. (Shang, Li, Zxang, 2021).

Due to economic difficulties, poor countries are forced to exploit natural resources, that is, to cut down forests without a license, as well as to perform illegal fishing, especially in Brazil and the Philippines.

Large companies with a high level of human concentration are becoming a potential source of virus infection, which was confirmed by the practice of fighting C-19 during the pandemic. The situation is the same with the creation of large farms, where people come into contact with animals, so that one infected animal can infect an entire herd, but also transmit the virus to humans.

Given that the standard of living is often measured by the amount of meat consumption, national economies can encourage the development of livestock and processing facilities for processing, ie meat consumption. Higher meat consumption, expansion of farms, can increase the risk of new infectious diseases, but also affect pollution, because it has been shown that the meat processing industry is one of the biggest polluters; it also consumes huge amounts of water, especially clean water which is rapidly becoming a limited resource.

From the previous analysis it can be stated that covid caused great damage to some economic sectors, other activities remained more or less at the same level of business, while third activities prospered and achieved additional results that would not be achieved in normal times, or would not be achieved at such speed. These statements also apply to other types of crises. Successful are those who manage to transform the dangers and threats of the crisis into opportunities and chances.

In order to transform the dangers of the crisis into opportunities, leadership skills are needed, ie leaders who are ready to meet the crisis and its challenges, instead of waiting for it to disappear, which means a proactive attitude in seeking practical and often improvised solutions. In other words, the management of the covid crisis and the covid economy in times of crisis requires certain different, and often opposite, solutions compared to management in normal times. Hence the need to educate leaders who are trained to manage the economy, or organizations in times of crisis, and these are crisis managers. It would be useful for health systems that directors of covid hospitals are specialized in managing pandemic crisis. (Radosavljević, Anđelković, Andjelkovic, Radosavljević: 2020).

In addition to the above, it is necessary to have professional organizations that specialize in certain activities that are characteristic of times of crisis, and crisis

management based on a holistic systemic concept that proves to be the most successful in times of crisis. These are agencies, consulting companies, consultants, companies and other specialized entities.

## CONCLUSIONS

It is evident that the crisis of the C-19 pandemic is mostly talked about and written about from a health point of view, ie we speak aboutthe number of infected and sick, the number of deaths and impaired health, as well as about the economic damage caused by the pandemic. Health systems and the medical profession have taken on the most efforts of the fight against the Corona - 19 virus and have often sacrificed their lives to neutralize the bad decisions of individual staffs or governments. It turns out that health systems have become overwhelmed by the influx of infected people, that patients suffering from other diseases have been neglected, but that also the lives of medical staff, especially those in covid hospitals, dispensaries and health centers, had been endangered.

However, the fundamental impacts of ethics, ecology and economics on the pandemic, as well as the impact of the pandemic on these phenomena, have been bypassed. The analysis of these impacts belongs predominantly to non-medical professionals and professions.

The paper presents the impact of the C-19 pandemic crisis on ethics, ecology, and the economy, as the three pillars on which every society, including the world, rests on a global scale. Feedback or reversibility has also been presented, ie how ethics, ecology, and economics affect the C-19 pandemic. The dilemma remains as to what is the impact of both, but also with which measuring instruments and quantifications to measure the consequences and draw appropriate conclusions.

There is no doubt that the pandemic has called into question the ethical norms and standards that have been built for centuries; they were demolished or disrupted in a relatively short period of time. The solidarity of people, ie the state and individuals, is in question, as well as the trust, above all, in the decisions of the crisis headquarters, and even the medical profession, which has always enjoyed the greatest trust among the population. These intangible values are the foundation of every society. It turns out that the pandemic will pass, but that solidarity, trust and morale are difficult to restore and improve, which will be shown and proven in the future.

It turns out that the C-19 pandemic has had a significant impact on the environment, whether it was a negative or a positive impact. The pandemic has even in some elements brought the reduction of environmental pollution, due to reduced work of industrial capacities, reduced traffic, etc. On the other hand, environmental pollution further encouraged the development of the C - 19 virus, since infection or poisoning with heavy metals and other toxic substances reduced human immunity, and thus the body 's ability to fight the virus and win over it.

REFERENCES:

1. Altman S, Bastian P, (2021): The state of Globalization in 2021, Harvard Business Review https://hbr.org/2021/03/the-state-of-globalization-in-2021.
2. Buck J.C., Weinstein S. B,(2020): The ecological consequences of a pandemic, Biology Letters, 18. Novembar, Royal Society Publishing, https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2020.0641
3. Carlsson-Szlezak P., Swartz P, Reeves M, (2021): Who Will Win and Lose – in the Post-Covid Economy, Harvard Business Review, 1. Jun, https://hbr.org/2021/06/who-will-win-and-lose-in-the-post-covid-economy
4. Collste G (2020): The corona pandemic has posed several ethical challenges to our communities, NordForsk, 25. November, https://www.nordforsk.org/news/corona-pandemic-has-posed-several-ethical-challenges-our-communities
5. Coronavirus, Climate Change, and the Environment A Conversation on COVID-19 with Dr. Aaron Bernstein, Director of Harvard Chan C-CHANG, Harvard T.H. Chan – School of Public Health (2019): Ehttps://www.hsph.harvard.edu/c-change/subtopics/coronavirus-and-climate-change/
6. Cxang I, Li H, Zhang R, (2021): Efects of Pandemic Outbreak on Economies on Economies: Evidence From Business History Context, Front Public Health, 12 May, https://pubmed.ncbi.nlm.nih.gov/33777885/
7. Iadav P, Weintraub R. (2021): "4 Strategies to Boost the Global Supply of Covid-19, Harvard Business Review, 6 May, https://hbr.org/2021/05/4-strategies-to-boost-the-global-supply-of-covid-19-vaccines
8. Ilić S. (2011): Ekonomska psihologijaFeniks libris, Beograd.
9. Isaacs D, Britton P, Preisz A (2020): Ethical reffections on the Covid 19 pandemic: The epidemiology of panic, Journal of Paediatrics and Child Health, 14 May, https://onlinelibrary.wiley.com/doi/full/10.1111/jpc.14882

10. Kase N.: Ethichs guidance for the public health containment of serious infectious disease outbreaks in low-income settings: Lessons from Ebola, Baltimore, Johns Hopkins Berman Institute of Beoethiccs: https://bioethics.jhu.edu/research-and-outreach/projects/ethics-guidance-lessons-from-ebola/
11. Kaslijer E (2021): Korona virus i ekologija: Kako pandemija može spasisti životnu sredinu", BBC, 21. Januar, https://www.bbc.com/serbian/lat/svet-53322963
12. Pohlman A, Reinolds O, (2020): Why Economy Forecasting Is So Difficult in the Pandemic, Harvard Business Review, 18 May, https://hbr.org/2020/05/why-economic-forecasting-is-so-difficult-in-the-pandemic
13. Radosavljević D, Anđelković M, Anđelković A, Radosavljević M. (2020): Post-Pandemic Pandemics with Regard to Serbia, Covid – 19 Pandemic Crisis Management Non-Medical approach, International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
14. Rume T, Islam SMD, (2020): Environmental effects of COVID-19 pandemic and potential strategies of sustainability, Heliyon journal, https://www.cell.com/heliyon/fulltext/S2405-8440(20)31808-9?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2405844020318089%3Fshowall%3Dtrue
15. The World Bank: The Global Economic Outlook During the Covid Pandemic: A Changed World, The World Bank, 8.06.2020. https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world

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# SCIENCE AND THE COVID-19 PANDEMIC CRISIS

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***Abstract:*** *The crisis of the C-19 pandemic is a relatively well-known problem from the point of view of medicine. It is known what type of virus it belongs to, its basic characteristics are known, the consequences it leaves behind and the way of suppression, ie treatment. However, it turns out that its specifics in relation to other types of viruses are not sufficiently known. It is still being researched, and with the discovery of the vaccine, there is a belief that it will be solved, in the following period. This statement is valid despite the ability of the virus to mutate, ie to adapt to new conditions and circumstances, ie despite the emergence of geographically social mutant viruses such as: English, Indian, Brazilian, Chinese, etc. With the increased number of vaccinated and the improvement of vaccines, even for certain strains, medicine will solve the problem of the pandemic, draw certain conclusions and laws and use them to solve the problem of other viruses, of the same or different typology. In short, medical science, and especially epidemiology as a branch of medicine, will come to new knowledge and scientific information.*

*Related to the previous is the inadequate use of (non) medical terms in crisis management of the C-19 pandemic. Certain terms are misused, which is not only formal, but often produces new problems and controversies. The term social distancing is equated with physical distance, although they are completely different phenomena, which also produce different outcomes. It is often not known in the non-medical profession what the C-19 virus really is, we often do not understand the terms epidemic, pandemic, endemic, jumping out, etc., which reduces the prevention of virus infection.*

*It turns out that numerous health institutions on a global level, as well as countries, have allocated large sums of money for the production, distribution and use of vaccines and other medical equipment related to this virus. In short, medical science and the profession will emerge victorious from this "fight", even strengthened with new medical knowledge and experience, and thus the objective gap that existed regarding the knowledge of pathogens, and especially the C-19 virus, will be filled.*

*However, the non-medical approach in resolving the C-19 pandemic crisis is lasking, ie it is little elaborated, and especially the research on the place, role and impact of science on C-19, ie the impact of C-19 on science and scientific research. Non-medical science, ie the non-medical approach and concept does not address medical issues and problems, but they indirectly affect the pandemic, as a medical or health problem. By resolving non-medical factors and problems, a pandemic can be avoided, or its spread can be reduced, ie slowed down in infecting people. These are economic and socio-cultural phenomena, and it is*

*about the places and roles of scientific research and science in general in the fight against C-19, the way and quality of nutrition, the possibility of using quality drinking water, or psychological, moral and other values and improvements. Thus, by resolving non-medical issues, the potentials of the virus are reduced, and thus the medical profession is relieved, which speaks of the necessity of cooperation between medical science and other scientific disciplines.*

*Also lacking is the processing and the influence of science on C-19, ie the influence of the C-19 virus on science and scientific research. This deepens the existing problems, but also multiplies the new problems that need to be answered. It turns out that everything that is created on the globe is more or less the result of science. As the most powerful tool, only science can solve the problems caused by the C-19 virus, which it does, by finding a vaccine against C-19 as the most complex medical drug against this pathogen. However, it is necessary to point out some of the challenges facing science, especially medicine, and its relationship to other sciences, ie the relationship of the medical and other professions in the fight against the pandemic. It is also necessary to integrate alternative and factual medicine, ie to create conditions for traditional medicine, or some of its parts, to be provable and formulated as scientific laws.*

*The most important thing is that the medical science, like other sciences, understands that nothing is absolutely true in the sciences, but that everything moves at the level of probability. This means that science has probably discovered certain laws, but that they also need to be re-examined and questioned, so as not to become a dogma. Bringing probability into science actually means abandoning the mechanistic concept and introducing a holistic concept that has revealed many illogicalities and new causes of crisis in social development, looking at them from the standpoint of the whole.*

*Emphasis should be placed on the synergy of medical-biological sciences, but also technical and social humanities in neutralizing the C-19 pandemic. This is due to the fact that the C-19 pandemic is not only a medical, but a multidisciplinary problem in the solution of which other sciences, ie professions, should also participate. It is a great illusion that the fight against epidemics can be reduced to medical science, that is, to the profession of epidemiologist. Engineering science and the profession have gained particular importance in virus detection, prevention, treatment, and postpandemic care for the cured, as it has been shown that many artificial intelligence tools can be used effectively in management decision-making. Social sciences and professions are indispensable in the implementation of prescribed measures, but they should remain within the framework of international and national legislation.*

*This paper deals with the non-medical approach in the management, ie suppression of the C-19 pandemic crisis, with a special emphasis on science and scientific research, ie the influence and understanding of science in solving medical problems.*

*The aim of this paper is to draw attention to science and its impact on the C-19 pandemic. This is important, because the largest part of the world's population has no knowledge or medical experience, but they understand and can influence non-medical factors and forces and thus reduce the possibility of spreading a pandemic in destroying the life and health of the population.*

***Keywords:*** *Non-medical approach, C-19, Science and C-19.*

## 1. GENERAL APPROACH TO THE SUBJECT AND THE RESEARCH

After almost two years since the onset of the C-19 pandemic crisis, numerous doubts and controversies remain regarding this crisis, on a global level, but also in the scientific approach to this phenomenon. The medical profession has more or less established the diagnosis, ie the causes of this infection, determined the processes and procedures in response to it, in order to protect the life and health of the population, but in a broader context also to protect the economy and society. Nevertheless, there are doubts and ambiguities in medical science and profession, which introduces numerous challenges in response to them, especially when it comes to factual, ie provable medicine, which has become the central point of the modern medical profession. Differences on certain issues exist even within the same branch of medicine, such as: epidemiology, immunology, virology, up to clinical trials, etc.

The fact is that global infection is a multidisciplinary phenomenon that is the result primarily of the non-medical approach of man and the population in certain actions and inactions towards nature, towards other living beings and finally the relationship between man and man. In other words, the basic or one of the basic causes of deviations in the natural order is in man as the only conscious and rational living being, but also a being that is irrational in many situations. The evidence for this is numerous. If it has been proven that smoking is harmful to health, that it causes numerous diseases and that smokers are more prone to becoming infected with Covid - 19 and dying, the question is why a large number of smokers do not respect this proven fact and eliminate the same from their lives. The situation is similar with the attitude of man towards limited natural resources, such as healthy, quality water as a basic human need without which man can not survive in a short period of time, given that it is irrationally and excessively consumed and poluted.

Medical and non-medical factors have been shown to influence the C-19 pandemic crisis management. Namely, "Detection of disease, treatment, monitoring of Covid - 19 extends to non-medical effects that affect macro and micro economies, social interaction, work and maintenance of household needs. The layers of these personal responses to government policies have already produced inequality in the unequal distribution of resources and supplies, complex personality and household dynamics, beliefs and customs, all combined to create different impacts on personal experience and the non-medical dimensions of Covid-19 prevention.“ (Die, Levandovski, 2020).

It is clear that the problem of infection, and therefore the issue of Covid - 19 can not be successfully solved solely by applying medical science in the broadest context. This problem cannot be resolved by several dozen epidemiologists, but we must use other natural, technical and social humanities. science. For example, the production of protective masks or technical means and tools that are in the function of treating C-19 are not medical problems, but they affect the success of resolving the pandemic. Their production includes the technical profession, ie technicians, engineers, medical profession, but also designers who, in addition to functional values, should also give aesthetic masks and other equipment in order to reflect fashion trends. In this context, special manuals are being developed for the production and improvement of means for protection against infection.(WHO, 2021)

Non-medical sciences and professions in synergy with medical science can give a better answer to the problem of health, but also other mass crises. Experiences from the latest C-19 pandemic show that the basic burden and merits fell on the medical profession, although non-medical experts were also included, such as engineers, technicians, IT specialists, transporters, logistics, procurement and distribution of drugs and vaccines, security accommodation and food for patients and medical staff, maintenance of medical equipment, etc. In short, the C-19 crisis is estimated to be a 50% challenge to medicine, and the other 50% is related to the non-medical profession.

Another alpha plus should be added to the above, and that is insufficient cooperation at the scientific, but also at the organizational and management level between individual countries at the global level, ie lack of cooperation and insufficient dynamism of the World Health Organization and cooperation with national public health. It turned out that the problem of mass crises cannot be successfully resolved without the application of a holistic systemic concept in the organization. The partiality that was present in the manifested health crisis C-19 introduced or brought great problems, starting from terminological inaccuracies that are neglected, eventhough they are essential for a successful response to crisis situations. It goes all the way to include the impact on the economy, morals and other areas of life and work, as well as the feedback impact of these areas on the success in the treatment of Covid - 19. Hence the need to distinguish certain concepts and eliminate misunderstandings in the scientific and practical approach to this analysis.

## 2. CONCEPTUAL CLARIFICATION OF CERTAIN PHENOMENA IN C-19

It has been scientifically proven that the first condition of any research and processing of a topic is to define certain concepts and phenomena, especially those that introduce certain confusions in specific topics. It turns out that one can successfully master only what is well known and that this is the first condition for quality management in times of crisis. C-19 as a virus is insufficiently known to the medical profession, which has led to problems in national public health. The key terms in the medical profession have been: insufficiently known, uncertain outcomes, unpredictable course of its development, life expectancy, all the way to the application of appropriate medical drugs, vaccines, etc.

That is why it is necessary to define certain terms, in order to answer certain questions, ie dilemmas and controversies.

### 2.1. What is actually C-19?

The C-19 virus belongs to the coronavirus group. It causes infections in animals and humans and as such is transmitted from animals to humans, but also between humans. Medicine has determined that C-19 is genetically related to the SARS-CoV virus, which appeared at the beginning of the third millennium in China. The main target of the attack of this virus was on elderly and sick people. In January 2020, the World Health Organization defined the C-19 virus as "a coronavirus disease in 2019 caused by the new coronavirus 2 (SARA CoV-2), which causes severe mass respiratory syndromes in humans." (Cennim0, 2021)

Symptoms caused by C-19 are: shortness of breath and respiratory disease in humans, cough, fever, and runny nose. Covid infection is accompanied by fever, exhaustion, fatigue, headache, loss of taste, nausea, etc. This happens in a relatively short time with a rapid spread, especially of old and sick people. Its characteristic is that a person can become infected with C-19 without being accompanied by symptomatic signs, which is especially dangerous. It is thought to spread through the air and by transmitting droplets from person to person in close contact with other people, although there are theories and opinion that challenge this view. This means that the symptoms can be mild or severe and can last up to 14 days (CDC, 2021).

These facts clearly point to the findings known in the theory of systems and organizations, which also apply to C-19, and that is that each subsystem of a system (and the C-19 virus can be presented as a subsystem of SARA CoV-2) carries some

common characteristics peculiar to the whole system, that is, to the living being. These common characteristics, or similarities, make it difficult to distinguish between them based on symptoms, which requires special testing and analysis to determine what type of virus it is (Vučenović, 1998).

Concerns, but also the behavior of the population, were partly increased by equating C-19 with a special flu. This fact was shown especially in the use of the vaccine, where the explanation was that it was a stronger type of flu and that there was no need to use the vaccine. However, it turns out that there is a difference between C-19 and the flu, especially when it comes to the consequences that C-19 leaves behind. Influenza and C-19 are produced by different viruses, ie the flu is the result of an influenza virus. The difference is that C-19 spreads faster than the flu, can last longer than the flu and, as said, poses a greater danger to the lives and health of the population, which has been proven in the number of infected and dead globally.

Having said this, the following should be kept in mind:

- *First,* if C-19 belongs to a certain type of virus that has been scientifically identified, then there is no place to talk about its absolute unpredictability, ie unknowns, because it has been proven that each subspecies of a living being has common, but also specific features in their anatomy, physiology and other biological-medical characteristics. When C-19 was formed, that is, when it was identified, drugs that were known to suppress SARS CoV 2 could be used in order to slow down its spread. Of course, the unknown remained in the second part, but by acting on the known characteristics, its spread would be reduced.
- *The second fact*, that is, the second claim, continues today, and that is that the C-19 is transmitted through droplets in personal contacts. This determination had an impact on the introduction of isolation measures, ie physical distancing, prescribing obligations for wearing masks, closedown of individuals, companies, but also cities, ie individual regions, so that the virus would not be transmitted and spread. It is clear that this measure was applied in mass infections several hundred years ago, which leaves a dilemma and seeks to answer the question of what the medical profession and medical science has been dooing, when in the third decade of the third millenium the same mechanisms and measures are applied to combat C- 19 as a few hundred years ago.

So, man managed to go out on the moon in the last century, in the third millennium man tries to conquer other planets in the universe, to communicate in

real time from any point of the globe, but failes when it comes to finding an effective cure for an invisible living thing called the C-19 virus. It is clear that the medical and pharmaceutical industry is responsible for this, ie public health institutions, as well as the World Health Organization, which is responsible for prescribing standards, procedures, declaring a pandemic, or declaring its abolition, giving recommendations and guidelines regarding the pandemic.

However, it turns out that after almost two years, C-19 brought far fewer deaths compared to previous pandemics, which numbered several million people. However, it should be borne in mind that the crisis of the C-19 pandemic has destroyed the global economy, and undermined traditional values, such as solidarity and honesty to the brink of extinction. These values are difficult to build, and are lost very easily and in a short time dimension, which will significantly affect the post-pandemic period.

### 2.2. Defining epidemics, pandemics, endemics and "outbreaks"

Often in ordinary life, but also in professional non-medical circles, no distinction is made between an epidemic and a pandemic, that is, an endemic, although there are essential differences, but also those are terms that were known even before the new era. The differences are not in terms of the behavior of the C-19 virus regarding causes and consequences, but in terms of competencies in taking health preventive measures at the national or global level, ie when it comes to responsibility for managing both, or the third crisis. For all terms, ie concepts, it is important to refer to public health and appropriate answers that are taken in the prevention of mass infections, although the same term is used when it comes to mass use of opiates or other plagues.

An epidemic can be defined as a subsystem, or part of a pandemic. The term epidemic was used by Homer in his work "Odyssey". It is known that Hippocrates included the epidemic as a widespread mass disease in the medical debate, as early as 430 BC, when it became a scientific category, ie a branch of medicine that is still developing and occupies an important place in medical science and profession. Epidemics are dealt with by epidemiologists as scientists who deal with the prevention and control of infectious diseases. Thus, "an epidemic is when numeroous cases of health infection occur in a region or country, but the infection does not spread further." (Healthdirect, 2021).

It turns out that the C-19 is also an intelligent living being and that it has the ability to adapt to the conditions of its survival. That this is true is confirmed by the appearance of different types of viruses regionally named such as: Indian, English,

African, and other strains. Each of them has its own specifics that are conditioned by climatic, geographical, demographic and other factors.

Hence, the competence for managing the epidemic rests at the level of individual states, ie national public health institutions. An epidemic appears first, and it spreads. By neutralizing the epidemic we prevent the spread of the virus. The geographical spread of the epidemic leads to a pandemic. For example, "when Covid-19 was limited to Wuhan, China, it was an epidemic. The geographical spread beyond the borders of China and the transfer to other continents created pandemic.

A pandemic is, as it was stated, "an epidemic that has spread to several countries, or continents", which means that a pandemic has a passport, which it does not show when it passes from one country to another. In other words, "a pandemic is a traveling epidemic." (Intermountain Healthcare, 2020).

It should be borne in mind that not every infection is a pandemic. In order for an infection to qualify as a pandemic, it is necessary to cover the whole world and for more cases of infection to occur than usual, and to spread from country to country, ie to the global world. States are preparing to fight the pandemic through public health institutions. (Healthdirect, 2021).

The general characteristic of a pandemic is that it is in fact a radical change that affects the world on a global level, both during the health and post-pandemic crisis, which manifests itself in: economy, morals, politics, etc. The pandemic is declared by the World Health Organization, and its general characteristic is the increase in the number of patients, as well as the number of deaths, and the cessation of work of the economy and economic entities. The greatest burden in the pandemic is suffered by the national health systems, due to the simultaneous admission of a larger number of patients. Of course, the C-19 pandemic insists on a number of restrictions, such as isolation, limited human rights, etc. National public health efforts seek to implement the recommendations of the World Health Organization. However, practice has shown that the implementation of these recommendations in many countries has not been achieved, due to insufficient economic strength of individual countries, ie poverty, which makes it even more difficult to fight C-19.

Related to the above is the definition of the endemic and the establishment of the relationship between epidemic and endemic, insofar as the terms pandemic, epidemic and endemic are easy to confuse, which is logical, because these terms are interrelated. An endemic, or endemic, is "a permanent presence in a certain place." Malaria is endemic to parts of Africa. Ice is endemic to Antarctica, which means that "Endemic is something that belongs to a certain people, ie a certain country ". People simply live

and work with it, which means the constant presence of endemics in those countries or regions. This indicates that C-19 can grow into an endemic over time, which is evident from the findings of some medical experts that the population must learn to live with C-19, because the virus is present and there is no room for relaxation. (Intermountain Healthcare, 2020).

Outbreaks or attacks are a larger number of endemic cases in some places than the usual number, ie than expected. Homer knew about this appearance of the infection in "Odyssey" and it is mostly used in the same sense today. So, this is one or more cases in a new area or locality. In poor countries, an endemic infection is associated with the consumption of hygienically unsafe water, such as cholera. In some parts of the world, there is fever, such as tick-borne infections, as well as malaria. Individual occurrence of cases is a symptom for reaction and quick suppression, because if the attack is not suppressed, it can turn into an epidemic. The World Health Organization is working to combat endemic infections, especially malaria.

The relationship between a pandemic, ie an epidemic and an endemic, should be seen as a relationship between the whole and the part in which the part is important, but the whole is much more important, and the interests of the parts can be sacrificed for the sake of the whole. This fact is important, because an epidemic is a mass infection that occurs in certain countries, ie parts of the world. This is important knowledge, because it is shown that researching the epidemic as a disease at the level of individual actions cannot lead to qualitative conclusions. Any attempt to draw conclusions from the analysis of the parts that would be applied at the level of the whole leads to failure, because the parts are different and any linear transfer of conclusions to nonlinear parts leads to problems. Aristotle came to this statement in due time when he stated: "The whole is always something more than a simple sum of its parts. What makes the whole a higher level of quality are the connections and relationships that exist between individual parts within the whole, but also the relationship of the whole to the environment in which it operates. "Accordingly, it is necessary to apply system technology to investigate the relationships between parts within system, but also the relationship of the whole to the environment in which it operates (Pajić, Radosavljević, Aanđelković: 2020, p. 20).

From the above, it can be concluded that the difference between eidemia, pandemic and endemic is in size, ie the geographical spread of the virus, meaning that the pademia is in fact an epidemic that has swept the world globally.

### 2.3. Social and physical distancing

One of the most commonly used terms in the C-19 crisis pandemic is social and physical distancing as a measure to prevent infection, or slow the transmission of the virus from person to person. The fact is that social distancing is used incorrectly here, because the issues of social groups are dealt with by sociology and psychology, while physical distancing is dealt with by the organization, especially when it comes to organizing, disorganizing and reorganizing, when it is necessary to establish as little distance as possible in the flow of resources from one place to another, in order to rationalize business.

In connection with the above, in the crisis management of the C-19 pandemic, the term social was used, instead of physical distancing, ie "Social distancing, also called physical distancing, means establishing a space between yourself and another person or other people, outside your home." In the above, recommendations were even given as to how much that distance should amount to and what social distancing means, ie that you should not gather in larger groups (where it is not defined what the group is, ie larger or smaller, because the criteria were changed during the crisis), make a distance between people of at least 6 feet, etc.(NCIRD, 2020)

Social distancing is not the same thing as physical distancing. In the social sciences, social distancing means keeping a distance, or not establishing connections and relationships between different national, religious, ethnic, age, gender and other social groups and groups. As such, it represents discrimination, which is sanctioned by the highest acts of the UN, and which leads to ethnocentrism, as the perception of one's own nation, religion or ethnic group as the most valuable, while denying other nations and groups. "In medicine, during the C-19 pandemic crisis, social distancing could be abused in the relationship between medical staff and patients, and the extreme form of abuse of this term is insufficient attention of medical staff to other national or religious, age and other groups. In some European countries, this has led to dilemmas about the priority of treatment of patients with C-19, ie whether to exclude the elderly from the respirator, because they are not promising, and save the younger and promising. (Pajić, Radosavljević, Aanđelković: 2020, p. 27).

Therefore, social distancing as a measure was incorrectly used in the C-19 pandemic, and this irregularity should be eliminated in future epidemics and pandemics, and physical distancing should be used instead of social distancing, because it is evident that social distancing breaks homogeneity, already fragile unity in conditions of great anxiety. a large number of infected, but also a large number of

the dead. At the same time, this is a typical example that shows how the misuse of words and terms can negatively affect national and global crisis management.

To this should be added the indisputable fact that the very term physical distancing in a pandemic must be used reasonably and from the point of view of logic. It turns out that physical distancing was used as a mechanism to prevent infection, even where there was no need for it. For example, the establishment of physical distance in the open space between family members who are together in closed apartments; to establish a physical distance between them in the open space, during a walk, etc. is not only an illogical, but also an unreasonable measure. Due to non-compliance with this measure, there were reports and court sanctions. It turns out that it is better not to adopt illogical, unreasonable measures, than to adopt them, and that they cannot be implemented in practical situations. They can introduce confusion and misunderstanding among the citizens.

## 3. SCIENCE IN THE C-19 PANDEMIC CRISIS

The crisis of the C-19 pandemic is primarily focused on saving the life and health of the population, but the very term and phenomenon of health is much broader than the state of the human organism. "The World Health Organization defines health from a social point of view as the conditions in which people are born, grow, live, work and age and which are shaped by the distribution of money, power and resources globally, nationally and locally, or more broadly to any non-medical factor that affects a person's health." (Braveman, Ergeter, Williams, 2007, p. 20).

Therefore, a poor and hungry man, according to this definition, is not a healthy man, but there are also insufficiently healthy conditions in which a man is born, in which he develops, works and lives. The above already indicates that health is much broader than the psychophysical condition of an individual and that it is influenced by numerous non-medical factors. So, health care cannot be borne only by the medical profession; it is influenced even more by what is happening in the economic, social, political and ecological environment.

In many cases and in many countries, the pandemic has been compared to a "war", and the fight against the Covid 19 virus as a priority of all priorities in which the entire intellectual and material potential in individual countries is engaged. In this context, there are expectations that the health pandemic will end, whereby forecasts and predictions were given when the pandemic will reach its "peak", ie when life and work will return to their previous state.

However, it turns out that after the C-19 pandemic, a new crisis will arise, ie a post-pandemic crisis; it is difficult to determine its borders, ie how to solve it, and in what time. This is also logical, because the impact on the socio-political situation, economy, psychological moral aspects is accompanied by numerous variables that are difficult to predict, because everything is present at the level of probability. This refers to the post-pandemic pandemic in Serbia, which showed its resilience in all parameters; it was shown that the Gross Domestic Product reduction was the smallest in Europe and that many economic areas had certain activities, ie that they operated with somewhat smaller capacities. and that as such, they will return to a normal situation relatively quickly after the pandemic. (Radosavljević, Anđelković, Andjelkovic, Radosavljevic, 2020, p.351-387).

Bearing in mind that the crisis of the C-19 pandemic had a different impact on certain areas of economic and social life, the impact of the pandemic on certain value systems that have been called into question will be further discussed. Of course, in some areas, the C-19 has brought certain benefits, which are often neglected or underestimated, because it is emphasized that the lives and health of the population are in the foreground and that there is no alternative. It is clear that life and health are the greatest earthly values, but that life is also conditioned by the economy, because if there is no economic efficiency and effectiveness, there is no life, or there is living, as the lowest level of living standard. Hence the dilemma in numerous state decisions that found themselves in the gap between life and the economy. It is clear that there are no dilemmas here and there cannot be any, because instead of either-or, it is necessary to introduce the philosophy of i-i, ie life and economy. The economy will become especially important after the end of the C-19 pandemic through "the application of innovative and value-based economic policies and practices and models built around social purpose or based on citizens." (OECD, 2020).

### 3.1. Science and C-19

Science is the result of human knowledge about the functioning of the natural order and the effort to transfer natural laws to the functioning of artificial organizations. With development, man managed to discover the secrets of the functioning of nature in each new time dimension and at the same time to be less envious of it, that is to control its individual parts. However, a large number of scientists, among them well-known gerontologists, believe that the supreme achievement and endeavor of modern science is the extension of human life and

victory over death.. In this context, it is believed that "the struggle for equality has been overcome, the struggle for immortality is in vogue." (Harari, 2018, p. 36).

The C-19 crisis has had a significant impact on science and research, but the science feedback has also had a significant impact on pandemic processes. This statement also refers to medical biological science, but also to social humanities, ie technical sciences. In medical science, controversies have arisen in medical matters on certain issues, which has called into question the trust in the medical profession and the emergence of conspiracy theories. The question that science needs to answer is how and why did the C-19 spread so quickly from China and in three to four months reach the world globally. Where the virus originated and how it originated. Why a certain number of medical experts do not want to be vaccinated against C-19, if it is known that the vaccine is effective and necessary in defense against C-19.

This was not influenced by the characteristics of the newly identified virus, but above all by the great interdependence, ie globalization that made the world one village. In the past, when such a degree of interdependence was not present, the virus could stay longer in a territory, ie it would not be transmitted in a longer period to other continents. Today, that is impossible, which means that a further increase in interdependence between countries will accelerate the spread of the virus, but it will also make economies and countries more vulnerable and complex to manage in the so-called postpandemic pandemics.

Within medical science, there is a problem in understanding and applying factual, ie provable medicine, as the only correct approach in giving answers to C-19 and other diseases. There is no doubt that provable medicine is a correct scientific approach that starts from the fact that certain laws and scientific information must be based on research, evidence, laboratory and other experiments, tests on a representative sample, etc. Therefore, official medicine relies on verified and proven, ie scientifically confirmed and verified facts, standards and procedures adopted and prescribed by the competent global or national health institutions.

To what extent official medicine occupied the world at the time of the pandemic can be illustrated by the fact that any application of alternative and non-standardized knowledge, ie procedures, even those that proved to be useful for the patient, were unacceptable and that even those who applied these methods could be sanctioned, even by imprisonment. On the other hand, if the medical staff applied standard and factually proven procedures that would not give certain results, the medical staff would not bear any consequences, or sanctions. This stems from the indisputable view that the medical profession has done what has been scientifically proven and

verified by representative global and national health institutions, and that there is no room for reviewing or even sanctioning what has been done. In this context, in suspicious cases, the procedures applied in the treatment had been re-examined and if the procedures were not violated, there was no responsibility for poor outcomes.

However, one should be careful here as well. It turns out that factual medicine often comes down to the formal possession of a medical school degree that provides absolute truth about a disease or infection. What about the things that medicine has not revealed, such as the secrets about C-19? The problem is that provable medicine also has failures in certain outcomes; still, it is not blamed, but everything is attributed to medical error, as "a serious public health problem that poses a threat to patient safety." There are few studies on this issue in official medicine. especially when it comes to the criteria by which a medical error is defined.(Grober, Bonen, 2005).

Namely, factual medicine starts from the classical attitude that "the world is organized exactly according to the laws established by science", which inevitably led to crises in the entire social development. "Opinions and attitudes that the world is organized exactly according to the laws established by science, must be replaced by qualitatively new opinions and attitudes in which it is determined that nothing is eternal and that everything that exists in the natural and social order is subject to change over time." (Vučenović, Leković, 1998, p.12).

Related to the previous is the statement that science, and consequently medical science, must be guided by the attitude that the world is probably governed by the laws of science, and that there is no absolute accuracy, nor can there be. This fact is important, because by introducing probability in science, space is created to examine and verify existing scientific knowledge, because it has been proven that science has failed to determine all the secrets and laws of the functioning of the natural and social order, including man as the most complex living being. The question is whether science will ever be able to do that, because human, and especially intellectual possibilities are limited, and the functioning of the natural order is complex and hidden by a large number of secrets, especially when it comes to self-organization, such as man, space, etc.

Accordingly, there is the claim is that man will continue to face the problems of the crisis in the future, as crises are a natural phenomenon, because there has never been a society that has not had a crisis. The only question is their length, that is, the way of reacting to crises, including pandemics. That is why it is necessary to educate experts who know how to manage in times of crisis, but also to educate experts on how to avoid a crisis in the first place. In this context, there is also the training of

special experts who are trained to manage pandemics, epidemics and endemics, because the outcomes of the pandemic also depend on these experts. (Adižes, 2021, p. 13).

Attitudes toward demonstrable medicine in the C-19 pandemic have shown some weaknesses. Excessive reference to factual medicine and waiting for the World Health Organization to make decisions and recommendations at a time of rapid spread of the C-19 virus has been shown to be counterproductive.

On the other hand, rigid respect for factual medicine, as absolutely correct medicine, together with difficulties in applaying the so-called alternative medicine, blocks the huge intellectual potential, which objectively exists in the medical profession, especially in highly competent and experienced people who have spent their entire lives in clinics, health centers or hospitals, or in laboratories, institutes, etc. It is clear that in turbulent living and working conditions, we need to change the attitude towards science, and especially towards standardization, which has many advantages but also weaknesses, because it is shown that every part of the health system can be a research center or innovation center for acquiring new knowledge.

It is not clear why factual and alternative medicine do not integrate, because it has been proven that alternative medicine is more effective in many diseases. This has been proven throughout human history; there are people who have been conditionally written off by official medicine that are treated and cured with application of alternative drugs and preparations. This is the traditional use of herbal medicines, aroma therapy, acupuncture, yoga, etc. Here, too, pharmaceutical companies seem to have a significant impact, which does not contribute to more successful treatment as the most humane job a person can do. It turns out that "alternative medicine, when rigorous, can be a science." (Cooper, 2004).

The second problem manifested in the management of the C-19 pandemic is the phenomenon of disintegration, ie the partial application of scientific achievements in certain areas. As stated, the pandemic and its control, ie management, requires an integrated approach of numerous sciences and professions, because the problem of mass infection is multidisciplinary and multidimensional. Since half of the crisis of the C-19 pandemic is a medical problem, the other half refers to non-medical issues, which should be solved by non-medical sciences, ie non-medical professions, and above all by technical sciences.

This is due to the fact that "human beings always die due to a technical error" or due to a technical problem, "and there are technical solutions for every technical problem", which means that engineers should take the main part in medicine or

pandemics together with the medical profession. Evidence for this claim exists in medicine, from the artificial heart that is the invention of engineers to the electroshocks that bring it back to life or that the cells of vicious diseases are killed by nanorobots. Therefore, technical science is unavoidable in a pandemic, ie the treatment of the infected. Together with medical science, notable results can be achieved.(Harari, 2018, p. 35).

It turned out that the medical profession, and especially managers of mass health crises, do not know enough about many other sciences such as: systems theory, organization theory (organization, disorganization and reorganization), information and communication technologies, management, chaos theory, queues, quantitative qualitative techniques and methods. optimization, crisis management theories, logistics science, distribution, inventory management, etc. Non-medical work should be entrusted to competent teams, and strategic crisis managers should integrate the mentioned professions and create favorable conditions for the realization of strategic ideas.

The third aspect influenced by C-19 was the change in the traditional attitude towards research of new products, especially vaccines. The traditional understanding was based on the partial design of the research process, which consisted of the following: the idea phase, the verification phase and its elaboration, the research and experimentation phase, the adoption phase and finally the use. This process has traditionally been carried out in the system of adoption of new pharmaceutical products, including vaccines against C-19.

So, the processes were separate, which required a long time, but also high costs. This method was acceptable at the time of incremental changes. However, it proved unsuitable during the revolutionary, ie radical and fundamental changes as is the situation today. The same holds for the future, where time will be measured in nano seconds and where speed has reached great distances. This necessitated the integration of vaccine creators, implementers, investors, experts who worked on experiments, laboratory technicians, animal and human testing, adoption by the relevant world and national institutions, to legal experts who were supposed to provide legal vaccine use framework. Thanks to the above, ie thanks to the cooperation of numerous authorized and licensed institutions, the vaccine against C-19 was found in a relatively short period of time and made available to the population. (Research to access pathway for investigational drugs for COVID – 19. National Institute for Health and Care Excellence).

However, this approach and result in scientific research introduced numerous dilemmas and controversies in accepting the vaccine as a means of prevention, because it compared the practice from the past where the adoption of a vaccine, as a complex pharmaceutical product, could take as long as ten years. It has been forgotten that science has advanced, that organizational concepts in research have changed and that technology has finally been perfected. The most important is the information communication technology, followed by statistical methods and mathematization that allow the use of large databases to test certain solutions and adopt certain standards and procedures for application of the vaccine in the fight against C-19.

This imposes the need to work in parallel on finding a cure for a certain disease and on raising the awareness of the population that at this time and age man acquires new knowledge faster and is able to apply advanced technologies to respond to the challenges of the disease, even when it comes to mass infection. Otherwise, people and users will still doubt the quality of the quickly found vaccine and it will be produced, but if future patients do not believe in it, a well-done wrong job can be harmful to the country, the pharmaceutical industry and the reputation of the medical industry. profession. This is all the more so because it has been shown and shown that the pharmaceutical industry belongs to the group of the most powerful and is well commercialized, which has led to absurd claims that it produces drugs for diseases, and then for treatment. Although the above is difficult to prove, it turns out that drugs against the pandemic of pathogens are not available to poor countries, or that they are simply too expensive. Dana Gill, U.S. policy advisor for Doctors Without Borders, states: "There are many examples of pharmaceutical companies not working correctly." (Taibbi, 2020).

That in the pharmaceutical industry, as the place where the most subtle research based on scientific methods takes place, there are problems is visible in the sale of medical, protective and other equipment. The prices rose with a general effort to make as much profit as possible in the crisis. Some countries questioned solidarity and assistance in medical equipment. Further, there was the problem that the agreed dynamics of deliveries of medical equipment and vaccines were not respected. Many contracts between vaccine manufacturers and suppliers are classified as secret, especially when it comes to the price of vaccines and other covid equipment. A large number of poor, or developing countries are unable to procure and pay for vaccines, protective equipment and covid technology, leaving them to fend for themselves, with tragic outcomes.

It turns out that the pharmaceutical as well as the medical industry on a global level is not interested in producing something that is occasional and temporary and

that does not bring profit. In other words, the pharmaceutical industry is accompanied by "a high level of financial risk and uncertain future, with newly launched products; there is a long period of research as well as restrictive regulations from research to sales" which makes pharmaceutical companies cautious. They take more account of financial outcomes than about the public good. (Jovanović, 2016, p. 30).

In other words, pandemics rarely happen, they are occasional and temporary, so there is no economic calculation to invest in that segment of pharmacy and medical profession. The same applies to the medical industry, where objectively there is a shortage of epidemiologists because the need for them occurs occasionally, which is why during the pandemic in Serbia, a large number of orthopedists, surgeons, oncologists, etc. were hired, together with young and inexperienced medics who knew little about the pandemic.

There is a danger of investing in new covid hospitals, equipment for mass infections, training of epidemiologists, etc. during the pandemic. They might not be useful, given the occasional nature of pandemics. Hence the need to build universal, ie flexible hospital facilities that could easily be turned from the so-called peacetime into "war needs ". This also refers to the education of future epidemiologists, where it is necessary to merge and add another professional orientation to this medical branch. The problem of occasional pandemics leads to the fact that young epidemiologists do not have experience in treating and eliminating the consequences of mass infection, because this knowledge is acquired during epidemics, ie pandemics. When they acquire this knowledge, with the change of time, those experiences become almost useless, which is an additional argument for expanding certain branches of medicine with knowledge from epidemiology, or epidemiology with additional knowledge from another medical closely related field.

It is believed that the biggest problem in medical science, ie in epidemiology as a branch of medicine, refers to infections that do not show certain symptoms. Hence, the statistics on infection in some countries are defective, because they show only infections accompanied by certain symptoms, or those that are recorded in covid centers. It is clear that the actual number is far higher, which puts new challenges before medical science. Therefore, "mathematical models that simulate the spatial-temporal dynamics of infection, which imposes the need for a radical increase in the identification and isolation of currently unidentified infections on C-19, must be introduced in pandemics." (Li, Pen et al, 2020).

### 3.2. Science and practice in C-19

Science has long since become a new productive force. It is not a goal, but it is the most productive tool for achieving the set goals. Science as a tool determines social development, which is why many countries allocate huge funds for the development of science and research. It is shown that it also changes over time, which is the result of human progress in acquiring and formulating new scientific laws. In other words, "science is a product of conscious activity. Every other approach in understanding and presenting science means the ideologization and politicization of the understanding of the origin and function of science." (Vučenović, Radosavljević, Marković, 2011, p. 12).

This statement is also valid in medical science, although it is clear that there has been a commercialization in the health, ie pharmaceutical industry, which confuses both medical experts and patients. It turns out that medical science at the time of the pandemic was largely ideologized, that is, politicized, which reduces its potentials, but also calls into question the trust in this branch of science.

This indicates and proves that everything that exists in the natural and social order is subject to change and that today we live by the principle that everything is changeable, and that only change is permanent. Science, which does not change, is in fact a dogma, which means that it must not be questioned. This statement also applies to medical and other sciences. The constant reference to factual medicine whose laws in C-19 should not be questioned, represents a kind of dogma, especially since the C-19 virus was not known and there were no drugs for its treatment. It is evident that bridges must be established between scientific and alternative medicine, ie theory and practice, especially since it has been proven that “traditional Chinese medicine has gained a new face, which is why Asian governments hope that extensive screening and rigorous clinical trials will reveal the secrets of ancient herbal medicines and that the results will be passed to Western scientists." (Normile, 2003, pp. 188-190).

National public health organizations often referred to the recommendations, or evidence of the World Health Organization. Considering that this institution is sluggish, that it represents a largely bureaucratic organization and that it cannot react quickly, and that it itself invoked provable medicine, time passed, people died from the C-19 virus and even after the end of the epidemic they did not perform analyzes and research, what was good and what was bad in the pandemic, what needs to be done in addition, in order to be ready for the next waves that will probably happen with the onset of the winter period. The pharmaceutical industry has been active on this issue, so a vaccine market has been created within the pharmaceutical market.

"According to the latest data from the World Health Organization, there are 176 projects for the development of corona vaccines around the world, and 39 potential vaccines have entered the clinical phase of human trials." (Radio slobodna Evropa, 2020).

The question is what will happen to vaccines when C-19 disappears, especially if they are known to have a limited lifespan and often require special conditions of storage, distribution. Their usage is also questionable having in mind the activities of the anti-vaccination lobby.

The crisis of the C-19 pandemic has manifested the problem of ideologizing and politicizing science in a large number of countries, and especially medical science in managing the C-19 pandemic crisis. Of course, the medical profession, crisis headquarters and other sciences or professions are also politicized here. In the foreground was not the medical profession and science, but political structures. Federal, state and local authorities have responded differently to the pandemic crisis by taking into account "elections, who is politically engaged, who registers to vote, or how people vote."(www.russellsage.org/research/funding/covid-19-pandemic).

This situation has largely influenced the loss of trust in medical science and the profession. The more political elites appeared to explain the dynamics, problems, or successes in dealing with the aftermath of the C-19 pandemic, the less the population in these countries believed in the information presented. Hence the emphasis that for a successful fight against C-19, in addition to quality and provable science, it is necessary to have a quality policy, ie a policy that will also be evidence-based. However, it turns out that there is a danger that science might take upon itself all the risk regarding making management decisions, especially if there is a conflict of scientific and political decisions.

"Eventhough good politics is the one that is driven by good evidence, good evidence is not a guarantee of good politics." At the beginning of the pandemic crisis, the majority of the population thought that decisions in the fight against C-19 were made on the basis of evidence, ie that they were scientifically confirmed facts. However, it turned out that this was not true, because many wondered if something was scientifically proven, and all people in a pandemic should follow science, why different countries, ie individuals, do different things even in a given medical situation. The logical question is whether epidemiology is the same in Europe and Asia. Confusion also arises when decisions are changed overnight. For example protective masks are first declared useful, but later they are claimed to be sources of infection.

In the previous context, the following should be emphasized: "The problem with C-19 is not that science is uncertain, but that it is developing rapidly thus creating new theories in real time. The danger is that when science is presented as a security cover to protect us against the frightening uncertainty of a pandemic, people will feel betrayed when it turns out differently in practice and when it is concluded that science is not a reliable authority for certain actions or inactions. " (Meek, 2020.)

In the Republic of Serbia, there was even information about the reduction of the number of infected or dead, and it was often pointed out that "the fight against the pandemic was won." The same situation applied to other sciences: commercial logistics, mathematical statistics, etc. which in practice manifested numerous weaknesses. For example, due to incorrect information, mathematical and statistical techniques could not determine the peak time, ie the disappearance of individual waves, and the known Gaussian curve on the example of Serbia could not be useful, because it almost never predicted the crisis process, due to insufficiently reliable data about the infected, deceased, etc.

Science has value if it is applicable and if it achieves a certain value. Therefore, it is necessary that there are interdependencies between these two variables. It turns out that "it is useful and rational to present the scientific knowledge that people can most often and most successfully use to conceive, constitute and construct various forms and modalities of reasonable organization and generally increase their success in achieving selected and established goals." (Marković, Vučenović, 2011, p. 96).

The results of science are recognized in a longer time dimension. True, there are fundamental sciences that are the basis for the development of other sciences and that do not directly show their result. It is possible that there are no results in scientific research, but it is also a contribution because it shows that the path that did not bring results in research should be abandoned and new ones should be sought. In other words, failure in research is a contribution to science, often greater than scientific success, because it turns out that the greatest thing is not to be persistent in research that does not provide results, but it is greater wisdom to give up when it is evident that research results are uncertain.

The key role in the development of medicine and other sciences is the exchange of information and knowledge, which at the same time gives a synergistic effect. In the above, one idea plus another idea or knowledge never equals two, but more than two, that is, a third idea is created in the exchange. This is often new knowledge that is probably of better quality than the previous two ideas. This is a new quality; this

became evident in the crisis of the C-19 pandemic because it led to the relatively rapid discovery of the vaccine against C-19 which has been unlikely in the past few decades.

In the crisis of the C-19 pandemic, the problem of insufficient understanding between certain specialties in medical science manifested itself. It could often be heard from immunologists that they were not virologists and could not talk about it, or that epidemiologists referred journalists and other interested persons to clinicians, laboratory technicians, etc. It is clear that such a fragmented medical science, in which the holistic scientific method of research actually first appeared, does not contribute to the development of medical science, because man is a unique whole, so it is necessary for the medical profession to develop on a holistic systemic basis. "It is important to respect the effort of science to conceptualize such scientific methods in the structure of which the elements of subjectivism are reduced to a minimum, that is, to use only those true facts that science has established." (Vučenović, Radosavljević, 2011, p. 133).

Analyzes show that the expenditures, ie the outcomes of the crisis, cannot be seen only through the health crisis, ie during the pandemic, which is often insisted on by both the political elites and the health workers. The complete analysis can be seen in a few years, because, as it was pointed out, after the pandemic, a post-pandemic crisis will inevitably come, which will primarily manifest itself in people's mental health. Namely, "The largest studies to date, with over 70,000 covid patients in hospitals and 13,000 out of hospitals suffer from various forms of depression in the first 30 days of illness. These include respiratory, neurocognitive, gastrointestinal, cardiovascular and mental disorders, as well as fatigue, muscle aches and anemia. The risk of the consequences of covid disease was the highest among those with serious illness." It is clear that these consequences will reduce the physical and intellectual potential of individuals, which will have a direct impact on the success of the post-pandemic period. (COVID – 19: Naučna ažuriranja, GLOBAL Institute for Global Health, 22.06.2021.).

### 3.3. How to proceed from here?

Regardless of the fact that the predictions are pessimistic about the end of the C-19 pandemic crisis and that we have statements from scientific and professional institutions and individuals that the population will have to live with the C-19 virus, the fact is that the crisis will disappear, because according to the laws of nature, everything that came into being must disappear. The only difference is in the years of

duration and the ways in which the end will be reached. Therefore, the end is inevitable.

In this context, the question of the place and role of science and certain specialized branches of science in the pandemic and post-pandemic period is raised. It should be borne in mind that developed countries have entered the fourth industrial revolution in which many routine, repetitive and standardized jobs have been taken over by robots, and artificial intelligence is widely used in making strategic management decisions. In these circumstances, the question arises as to the place and role of man in Industry 4.0, but also in Industry 5.0, which will increase its dynamics in the third decade of this century. (Radosavljevic, Andjelkovic, Radosavljevic, 2021).

It is clear that even after the crisis of the C-19 pandemic, science, thanks to the application of advanced information and communication technologies, ie the use of databases and their rapid processing and transformation into information, ie knowledge, will gain momentum. In the context of C-19, it is very likely that medical science will become more and more important, and the health infrastructure and technical equipment of health systems will receive special attention. Within medical science, one should expect greater commitment to epidemiology, immunology, virology as specialized branches of medicine, which should be integrated in the sense that the greatest specializations exist in every doctor who directly or indirectly deals with epidemics.

In parallel, information and communication technologies and robotization in the form of technical aids in working with infected patients should take over numerous routine tasks in covid centers, covid clinics and covid hospitals, but also in other sectors of tertiary health. Thus, "underpinned by a thin theory, but also by thick practice, the patented technical device has the task of monitoring the user's behavior (patient'a behavior - author's note) in order to prevent any deviation from normal or acceptable behavior that may affect the user's mental state." (Zubot, 2020, p. 434).

In this way, multiple benefits would be realized.

First, when it comes to reducing the possibility of infecting medical staff because direct contact with the infected would be reduced or eliminated, less staff would be required, ie less live work to serve patients. Further, this would increase the reliability of certain operations, because it is shown that systems dominated by live labor are the least reliable.

Covid patients would feel safer, and covid specialists could dedicate themselves to the analysis of the pros and cons of existing procedures and standards, and take notes, as a basis for further analysis and research. The acquired knowledge would

contribute to the further improvement of "fundamental scientific research and to finding qualitatively new bases and starting points, both in scientific research and in the development of all other types of human activity." (Vučenović, 2004, p.67).

In the post-pandemic period, psychological and psychiatric sciences will gain special importance. The pandemic crisis has left great consequences on the lives and health of the population. Mass infection and a large number of deaths in the initial phase of the pandemic, as well as the public display of mass deaths, ie sowing fear of individuals from state authorities, left great consequences for the mental health of the population. Many were left without their loved ones, without the last greeting, with great traumas that they will remember forever. Thus, the mental health of the population at the national and global level has been called into question; this means that instead of covid hospitals we will have to provide infrastructure that will treat mental illnesses and disorders.

However, it should be stated that in the future, man will overcome all the obstacles that are set before him, as it was in the past. With the development of new technologies, as well as the acquisition of new knowledge and the integration of numerous sciences, the future of man is guaranteed, his life expectancy will be longer and longer, as well as the quality of life. So, there is no place for pessimism when it comes to survival, that is, the development of civilization.

## CONCLUSION

The paper points out the necessity of delimiting certain terms in the crisis of the Covid pandemic - 19, because it was shown that certain terms are used differently, but also incorrectly, both by medical and non - medical experts. This is not only a formal issue, but above all it is an essential issue, because it has been proven that defining the problem is the first condition for successful research. Only if we know the matter well we can master it. Thus, the defined terms have been demarcated: pandemics, epidemics, endemics and outbreaks, as well as the differences and characteristics of social and physical distancing, which are incorrectly used in the pandemic crisis, but also in the professional and scientific literature.

The paper also points out the relationship between science and scientific research and the crisis of the Covid - 19 pandemic, with special emphasis on the relationship between medical-biological and non - medical sciences, and the relationship between science and practice. It has been shown that science is the most powerful force capable of solving earthly problems and that everything that exists on the planet earth is the

result of science, ie confirmed and verified human knowledge about the functioning of the natural and social order. The necessity of cooperation between medical-biological and other non-medical sciences was pointed out, especially: organization, system theory, management theory, management in times of crisis, ie mass infection, to statistical and mathematical sciences, physics, chemistry, etc.

Of course, there is also the problem regarding the greater degree of connection and synergy between individual branches of medicine, such as: epidemiology, immunology, virology and other related branches and sciences. It turns out that these specialties do not have enough knowledge about the completeness of the challenges that the world has faced, which is why they provide partial solutions, which can only solve one problem at a time. This is due to the fact that the partial approach of certain sciences, or the engagement of several dozen epidemiologists, cannot solve a complex problem such as epidemics and pandemics. Therefore, it is recommended to use a holistically systematic scientific method, which has proven to be the most successful in the conditions of complex and dynamic problems.

The most important thing is the understanding that science is not absolutely accurate, ie that there is nothing in the universe that is absolutely true. Accordingly, factual medicine cannot be considered absolutely accurate, but the phenomenon of probability must also be introduced into the whole picture. This means that what science has established through experimentally confirmed and verified facts is probably true, but not absolutely true, because man to this day has failed to reveal all the secrets of the functioning of the natural and social order, including man as the most complex living being. The question is whether this will happen at all, given the intellectual limitations of man as a rational and creative living being. Nevertheless, in each new time dimension, with the development of society, man discovers new drugs, vaccines, and by applying artificial intelligence, he is able to use large databases to make quality management decisions. Evidence for the above is that medicine itself indicates that the safety of individual vaccines is different and that it is almost impossible to have absolute reliability for different demographic structures (the old, young, gender, sick, poor and malnourished, etc.).

The introduction of probability into medical science as well leads to a better understanding of alternative medicine. The formal and alternative medicine need to be integrated, especially since the crisis of the Covid-19 pandemic showed that there are alternative drugs that prevent the spread of infection among the population. Here it is especially important to emphasize that the application of linear solutions for nonlinear problems, ie nonlinear solutions for linear problems as a rule leads to failure, which became evident in the pandemic. We realized that solutions to be

applied in large urban and densely populated areas should not be applied linearly to rural, hilly and sparsely populated areas.

The relationship between science and practice is important for every science, and especially for medical science, because science has its value when it is applied, that is, when it gets its use value. The crisis of the Covid - 19 pandemic showed differences between theoretical and scientifically confirmed facts. The medical profession was not unique in the assessment and evaluation of the epidemiological process. In many situations the medical profession was not clear, and it was often controversial, which led to distrust in medicine as a science. Precise analyzes show that the weakest side of the non-medical sciences and non-medical profession was in the organization of the healthcare system that would provide a quick transition to a new way of working in relation to normal times. Analyzes show that countries that allocate even less funds for national health may have a better health system. The reason lies in better organization and in adequate management of limited resources, which become even more scarce in a pandemic, due to the closure of the economy and limited activities at the national or global level.

It is important to emphasize that the outcomes of the Covid-19 pandemic crisis as well as other crises (economic, financial, political, social, etc.) should not be assessed during the pandemic, but after 3-5 years since the World Health Organization declares the end of the pandemic. Reducing the pandemic to health problems alone is unacceptable, because it is expected that other pandemics will occur after the pandemic, such as psychiatric-psychological, economic, moral and other crises. Apparently, they will be more complex to solve, they will require more energy, but also a longer period of time for healing. This additionally confirms the need to connect medical and non-medical science, and to provide a greater degree of integration of individual medical specialties.

**REFERENCES:**

1. Adižes, I. (2012): Kako upravljati u vreme krize, Asee, Novi Sad.
2. Braveman, P., Ergeter, S., Williams, D., (2007): The socijal determinants of health coming of age, Annu Health as an agent of emerging and reemerging infection, Clin Microbiol Rev.
3. Cennimo, D.: What is Covid – 19, Medscap, June 25, 2021. https://www.medscape.com/answers/2500114-197401/what-is-covid-19

4. Center for Disease Conrol and Prevention, Symptoms of Covid – 19, February 22, 2021: https://www.cdc.gov/
5. Cooper, E. (2004): Complementary and Alternative Medicine. When Rigorous, can be Science, Evidencd-based Com2plementary and Alternative Medicine, June, 1.
6. Dye, T., Levandovski, B., et al (2020): Non-Medical Covid-19 related personal impact in medical ecological perspective. A Global Multileveled, mixed method study, MedRxiv, medRxiv doi: https://doi.org/10.1101/2020.12.26.20248865, https://www.medrxiv.org/content/10.1101/2020.12.26.20248865v1, 26.12.2020.
7. Grober, E., Bonen, J. (2005): Defining medical error, PMCID.
8. Harari J.N. (2018): Homo Deus, Laguna, Beograd.
9. Healthdirect, (2021): www.healthdirect.gov.au/what-is-a-pamdemic
10. Intermountain Healthcare (2020): What is the difference between a pandemic, an epidemic, endemic and an outbreak, Intermountain Healthcare, April 2. https://intermountainhealthcare.org/blogs/topics/live-well/2020/04/whats-the-difference-between-a-pandemic-an-epidemic-endemic-and-an-outbreak/
11. Jovanović, Ž. (2016): Upravljanje strateškim promenama u farmaceutskoj industriji, doktorska disertacija, Fakultet organizacionih nauka - Univerziteta Beograd.
12. Li, R., Pen S. et al. (2020): Substantial undocumented infectin, fascillites the rapid disseminarion of novel coronavirus, Science, May 1, https://pubmed.ncbi.nlm.nih.gov/32179701/
13. Marković, A., Vučenović, V. (2011): „Izvorišta holističke teorije organizacije", FORKUP, Novi Sad.
14. Meek, S. (2020): „COVID-19: However good the science, you need good politics too", University Nottingham, UK, https://www.nottingham.ac.uk/vision/vision-c19-needs-good-politics-too
15. National Center for Immunization and Respiratory Diseases (NCIRD), Social Distancing, Quarantine and Isolation, Division of Viral Diseases, April 4, 2020.: https://www.cdc.gov/ncird/index.html
16. Normile, D. (2003): „The new face of tradicional Chinese Medicine", Science, 2003.
17. OECD Policy Responses to Coronavirus (COVID-19) Social economy and the COVID-19 crisis: current and future roles, Jul 30, 2020: https://www.oecd.org/coronavirus/policy-responses/social-economy-and-the-covid-19-crisis-current-and-future-roles-f904b89f/

18. Pajić, S., Radosavljević, Ž., Anđelković, A. (2020): Definisanje i razgraničenje pojmova, u Upravljanju pandemijom Corone – 19 Nemedicinski pristup", monografija, Fakultet za poslovne studije i pravo, Beograd.
19. Radio Slobodna Evropa: Farmaceutska industrija EU protiv nerealnih očekivanja, 8.septembra 2020, https://www.slobodnaevropa.org/a/30827365.html.
20. Radosavljević, D, Anđelković, M., Anđelković, A, Radosavljevic, M.,(2020): Post-Pandemic pandemics with regard to Serbia, COVID-19 pandemic crisis management – A non-medical Approach, International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
21. Radosavljević, Ž., Anđelković, M., Radoavljević, D. (2021): Man in the Fourth Industrial Revolution with Reference to Serbia, International Conference Proceedings INFOTEACH 2021, Aranđelovac.
22. Social, Political, Economic, and Psychological Consequences of the COVID-19 Pandemic, https://www.russellsage.org/research/funding/covid-19-pandemic
23. Taibbi, M. (2020): Big Pharmas Covid-19 Profiteers, RolingStone, Avgust, 2020.
24. Vučenović, V., (1998): Menadžment-Tehnologija i filozofija, Želnid Beograd.
25. Vučenović, V., (2004): Šampionski menadžment, NIP Obrazovni informatior, Beograd.
26. Vučenović, V., Leković, B. (1998): Mendžment -Tehnologija i filozofija, Želnid, Beograd.
27. Vučenović, V., Radosavljević, Ž., Marković, A. (2011): Samo-Organizacija, FORKUP, Novi Sad.
28. Vučenović, V., Radosavljvić, M. (2011): Holistička tehnologija uspešnosti - Kako postati uspešan" FORKUP, Novi Sad.
29. World Health Organization. (2021). Aide memoire: use of medical and non-medical/fabric masks for community outreach activities during the COVID-19 pandemic, based on current WHO guidance, 31 May 2021. World Health Organization. https://apps.who.int/iris/handle/10665/341570., June 1, 2021.
30. Zubot, Š. (2020): Doba nadzornog kapitalizma, Clio, Beograd.

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# THE IMPACT OF C-19 ON THE GLOBAL ECONOMY WITH REFERENCE TO THE REPUBLIC OF SERBIA

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***Abstract:*** *Although the crisis of the Covid 19 pandemic is not over, we can have a glimpse of the consequences it has left on the health of the population on a global level, but also on other aspects of economic and social life, such as tangible and intangible values that have been created for centuries, but can be easily lost. It has had a dramatic impact on the global economy, which in the economic literature and practice is called shocks, and the consequences have been expressed through reduced gross domestic product at the global level, ie on economic growth and development. In short, the crisis of the Covid - 19 pandemic has led to a recession in the world economy, with far - reaching consequences in the future.*

*It turns out that there are iterative relationships between the health of the nation and the success of the economy. Healthy nations and nations that have excellent health prevention and protection, ie treatment, as a rule, have a reduced number of sick days, reduced absence from work due to the treatment of children or family members, as well as higher labor productivity. Countries in transition, or developing countries, have poor health systems, as a rule have a shorter life expectancy, and thus working life. They also experience reduced work engagement and insufficient physical and mental strength to achieve greater personal and organizational success. Thus, there are significant causal links and relationships between the health care system and economic achievements.*

*Another, relatively little scientifically processed aspect is the relationship between the Covid - 19 pandemic crisis and the economy that has emerged in the past year and a half. It is clear that this relationship exists, which is partly expressed through the dilemma: "life and health, or the economy", ie what to give priority to in a pandemic. Health care systems and the medical profession, but also the population as a whole, give priority to life and health, as a precondition for all conditions, which is common sense and is also logical. Economists, ie businessmen in the conditions of a lockdown, numerous restrictions*

*and prohibitions point out that they are also "living corpses", which do not create new values. This, in turn, negatively affects the health, but also other national and global systems.*

*However, there is actually no dilemma, in fact it it is a false dilemma, and it is the result of the traditional understanding in which the main determinant in making management decisions, ie national policies and strategies was "either -or." Meaning, either life and health or the economy, which is relatively simple and where tools are sought to answer the questions of what is the most acceptable, that is, the most optimal.*

*It is clear that in modern conditions, nothing can be one or the other, but a new rule has been introduced, and that is "and-and", which practically means life and economy, that is, economy and life. This rule produces new challenges, because it is much more difficult to balance life and economy, ie economy and life, because competent experts who are educated and have experience in managing mass or global crises are required to manage a pandemic crisis.*

*The paper deals with the issue of the impact of the Covid - 19 pandemic crisis on the global economy, with reference to the Republic of Serbia and tries to answer the question whether and in which segments the Covid - 19 crisis was conditionally useful, and what should be done in the future in order to minimize the consequences of the crisis, especially in the sphere of economy. This is all the more so because it is expected that after the health crisis, ie the pandemic, a post-pandemic crisis occurs, which will be more complex in all parameters. This crisis will also be a long-term crisis and its "cure" involves a high level of uncertainty.*

***Keywords:*** *C-19, Global covid economy, Impact of the virus on the economy, Benefits of the pandemic, Impact of C-19 on Serbia*

## INTRODUCTION

From the economic history, we are familiar with the factors that produced recessions as well as the decline of economic activities, ie the slowdown of economic growth of national economies, but also economies on a global level. These are international conflicts, wars, technological progress, or crises caused by shortages of certain resources, such as oil, clean and hygienically safe drinking water and other natural resources. These crises did not directly produce human casualties, but indirectly worsened living conditions and standard of living, contributed to the increase in poverty, and thus jeopardized the survival of the population.

Nevertheless, analyzes and research on the impact of mass health crises called pandemics are lacking. The reasons for this can be found in the fact that pandemics occur occasionally, but also that they last temporarily and that with the development of modern technologies, the consequences of infection are resolved relatively quickly and successfully. In other words, man managed to master the causes, but also the process of infection, and the elimination or minimization of their consequences. It is clear that even after the World Health Organization declares the end of the pandemic, there will be no precise analysis of the pandemic, and thus there will be no conditions for learning and coming to new scientific information on how to respond to its challenges. This refers primarily to the non-medical aspect, given that the medical profession, after a year and a half, has gained new knowledge and experience in eliminating the consequences of the pandemic.

It is clear that the high level of interdependence between countries produces new problems, and that is the rapid spread of the crisis, but also the recession in some countries. It turns out that no one is self-sufficient anymore and that the world is becoming a global village which more or less equally shares destiny in all parts of the world. It is evident that the pandemic will negatively affect macroeconomic parameters, ie effects, that it will affect structural changes in which numerous professions and traditional activities and professions will disappear, that it will increase the number of unemployed due to closing of economies and severance of business relations with domestic and foreign business partners. Investments in health care, ie in health capacities and technical equipment, redesign of existing health capacities and formation of special covid parts within health systems, with competent personnel, represents the future, which has its bases in the C-19 pandemic that hit the world in the early twenties of this century.

Most of the great world crises were more or less related to the crisis of supply or demand, and that discrepancy was resolved by measures of state incentives, ie fiscal,

monetary, tax and other economic mechanisms. The crisis of Covid-19 pandemic is specific, as it has created an aggregate crisis of supply and an aggregate crisis of demand. "What can be said with certainty is that the shock of the pandemic hit the economy both from the side of aggregate demand and from the side of aggregate supply, which is atypical and which makes the situation and overcoming the crisis especially difficult. Demand has been reduced, starting with households, since consumption is reduced only to satisfying basic living needs, investments in the economy have been reduced, ie capital expenditures of the state. Most countries are increasing their spending on the health system and increasing hospital capacity." (Praščević, 2020. p. 12).

This fate will undoubtedly affect the Republic of Serbia as well. However, the recession, ie the fall of the Gross Domestic Product in Serbia will fall less compared to other countries, even developed countries, because the economy is less dependent on foreign countries. It is based on traditional branches, and above all agriculture and informatics, which did not experience a pandemic decline, and the information industry even in the pandemic experienced a conditional prosperity, as well as the retail sector, food preparation and delivery, e-banking, e-commerce, etc. The already underdeveloped industry of entertainment, culture, sports, tourism, hotel and catering, transport, etc. also suffered. Remittances from abroad have also been reduced, and household budgets and reserves have been significantly reduced. It is paradoxical, but it is true that highly developed countries will experience the economic decline the most, but that they will also recover the fastest and return to a normal state of business. The Republic of Serbia, given the above, in 2021 will probably not have a decline, but a minimal increase.

## 1. OUTCOMES OF THE GLOBAL ECONOMY IN THE CONTEXT OF THE C-19 PANDEMIC CRISIS

It has already been stated that the crisis of the Covid - 19 pandemic is not over and that the end is not in sight. Accordingly, it is impossible to assess its effects on the economy, both nationally and globally. When the World Health Organization declares the end of the pandemic, there will be an economic pandemic, ie a crisis of business and of creation of new business values in the form of: products and services. It will also be necessary to reestablish broken relations and introduce new business relations with partners home and abroad.

However, it turns out that not all industries will suffer the same damage. The primary and secondary sectors will, as a rule, suffer less damage than the tertiary and the fourth sector. Countries that have a higher degree of autarchicity of the economy will also be more stable and less vulnerable to the pandemic crisis, while countries that base their economies on the service sector such as tourism, transportation services, accommodation, culture, will generally have a significant decline in total income.

The abolition or mitigation of measures introduced in connection with the pandemic will happen first in developed countries, and then in less developed ones. It should be borne in mind that even after the World Health Organization declares an end to the pandemic, new periods of infection caused by the virus will appear in developing countries.

It is estimated that the pandemic will dramatically affect the reduction of the world's gross domestic product (GDP) between 5% and 8% in 2020, and that this will represent the deepest global recession in the last few decades. This decline in global growth is estimated despite the efforts of national governments, including the EU, to slow down the decline in gross domestic product through fiscal and monetary mechanisms. At the same time, it is expected that at the end of the pandemic crisis, there will be a "historic decline in per capita income", which will draw back tens of millions of people into the category of extremely poor people.

Poor countries, ie developing countries, are in an even more difficult situation during the pandemic. Even when the pandemic is over, they will face an even more serious problems, especially if they procured pharmaceutical products, medical equipment and vaccines using loans, deferred payments and under unfavorable conditions. Many of them had bad national balance sheets even before the pandemic, according to the most important balance sheet positions. Their health capacities are weak even in normal conditions, and in the conditions of a pandemic even more so. It turns out that "for developing countries, many of which face daunting vulnerabilities, it is crucial to strengthen the public health system, address the challenges posed by informality and implement reforms that will support strong and sustainable growth once the health crisis is over." (The Global Economic Outlook During the Covid Pandemic: A Changed World, The World Bank, 8 June 2020).

Investing in healthcare that can respond to the challenges of different pandemics in all situations is always justified. This statement is valid even when health potentials are not used; analogously the best cost is when firefighters receive a salary and do nothing. Precise analyzes show that the damage caused during the pandemic crisis is

far greater than the investment in health facilities. This was confirmed by the C-19 pandemic, which, according to estimates, caused numerous (im)measurable damages, such as social global growth, but also political, sociological, environmental, moral and other damages that will occur when the pandemic ends.

During the pandemic, there was a drastic drop in demand for oil and its derivatives. Many oil depots have been full for months, production reduced, as well as selling prices. After the measures of prohibitions and restrictions are eased, there will probably be an explosion of demand, and thus an increase in prices, which will drastically affect the chain in other sectors as well. Analyzes in the United States show a sharp recovery and explosion in demand for various products, and thus an increase in sales prices.

The question that is difficult to answer is the following: "Who will gain and who will lose after the pandemic ends"? This is a complex question and ranges in predictions and possible scenarios, namely: How much time will pass to repair the damage caused by the "closure of economies", how the results will be shared between companies and workers, which way to go after the pandemic ends, and what will be the interaction between productivity and earnings. There are basically three possible scenarios: (Carlsson-Szlezak,2021).

A win-win scenario in which workers, companies and policy makers win. In this scenario, wages are maintained in line with labor productivity growth. This is the most desirable outcome, but it is at the same time difficult to achieve, and it happened in the late 1990s in the United States.

Winners and losers. This is a realistic and most common scenario during, but also after a pandemic. If wages grow, workers benefit, but if they grow more than productivity growth, it increases costs, reduces competitiveness and companies lose, because the share of wages in total revenues will grow, and thus profit, or margin, decreases.

Lose-Lose, is the third possible scenario. This is the worst case scenario, because in a pandemic, everyone loses, both during and after the pandemic. What distinguishes losers is their intensity and duration. It turns out that "the pressure on wages that is not accompanied by productivity growth, and the company does not have the ability to transfer that pressure from wages onto customers, ie consumers, the inevitable outcome is increased inflation, ie money printing in order to cover the gap between wage growth and productivity. Of course, policymakers can allow this gap in a smaller percentage and at a moderate pace. Larger deviations and in the long run, this creates big problems, which usually leads to a recession.

Although it is difficult to predict which scenario is most likely, as there are different country policies making it impossible to implement the principle of linearity or a uniform system in all countries, it seems that it will be the one in which policymakers seek to retain earnings and even increase them minimally, eventhough this growth does not correspond to productivity growth. Workers prefer scenario one and two, politicians may even prefer scenario two, while policy makers would prefer scenario one, but would also be satisfied with scenario two. It is clear that companies will want scenario one, which means that the company must achieve higher productivity growth compared to wage growth, which increases competitiveness, ie profitability in the post-pandemic period.

## 2. C-19 PANDEMIC 'BENEFITS'

Related to the previous is the following question that needs to be answered, ie. whether the pandemic has contributed to changing the way of thinking and behaving towards nature and environmental protection, ie whether crises, and consequently crises of the C-19 pandemic, bring some benefits when it comes to protection or improvement of the environment. It is clear that the damage from the pandemic is great, but you should see chances and opportunities in them. That is why wise individuals and organizations, ie states, see opportunities in crises, and others see threats, dangers and damages, which multiplies the problems on the national, but also on the global level.

Lockdown and restrictions on movement, haves reduced the use of cars as a significant source of pollution, especially when it comes to urban centers. By reducing the number of cars, but also other means of transport of air and sea traffic, especially ships, cruisers that pollute the shores of certain countries against which the countries are fighting, the pollution of the air, ie the environment, has also decreased. During the pandemic, a significant drop in carbon dioxide and other toxic materials was recorded. "One estimate suggests that by April 2020, daily global CO2 emissions were 17% lower than the 2019 average, and there was also a decrease in emissions of carbon monoxide, sulfur dioxide, nitrogen oxides, volatile organic compounds and particles. Related to the above is the reduction of childhood asthma, as a result of reduced air pollution, as well as a reduction in the number of premature births." (Buck, Weinstein, 2020).

However, it should be stated that these positive effects are short-lived, because after the pandemic reduces its intensity or ends, there will be a "boom" due to the

"explosion" of population movements, due to the increase in the number of cars and efforts to avoid public transport as a potential source of infection as well asurban congestion, which increase the amount of exhaust gases and pollute the environment, ie it pollutes people as suitable targets for numerous pathogens, including C-19.

With the decrease in the use of means of transport, the use of motorcycles and bicycles has increased, and people are ready to walk to their workplaces or apartments. In this way, they increase their physical condition, and on the other hand, they are not exposed to the use of public transport, which is usually overloaded and in which there is a possibility of infection. Of course, here, city or local policies can contribute to subsidizing the arrival to and departure from work without the use of means of transport, the provision of appropriate parking, services, etc. It is necessary, therefore, to build pedestrian, bicycle and scooter paths and other infrastructure.

During the pandemic, many found refuge in rural parts of the country, in villages, hilly and mountainous parts, or in places where there is not a large concentration of humanity. Real estate prices in rural and hilly areas have increased, their demand has increased, which reduces the overcrowding of urban units, and at the same time inhabits the countryside, ie areas that have been devastated and exposed to decay over the years. It is shown that after the reduced intensity of the pandemic, "ecological renewal and assimilation of tourist places" began, and especially the development of rural tourism.

Although it has been proven that being in nature is the best remedy against covids, the authorities have banned the movements of even those who were engaged in agricultural production and who could not be infected in the fields. Increased stay in nature increases people's satisfaction, but it also changes man's attitude towards nature in the sense that he is more ready to protect it. "Melju Weist, an environmental psychologist at the University of Exeter, conducted research on a large sample before Covid-19 to find a positive correlation between exposure to the natural world and environmentally conscious behaviors such as planting trees or pruning and growing hedges." (Kaslijer, 2021).

A large number of technology companies have introduced work from home, which has reduced the load on public transport, the concentration of employees in smaller spaces and thus the possibility of contracting the C-19 virus. It turns out that the pollution of large cities in Serbia was lower during the pandemic, which is a result of the reduced work of large polluters, or the polluters were more controlled.

Pollution of the environment, ie air, water and soil, directly affects the increased infection, especially in the elderly and the sick. Countries that have air pollution and

do not use healthy water, have increased mortality, which is significantly higher than deaths caused by the C-19 pandemic, which is logical, because substances are inhaled and taken into the body through food, which often leads to vicious and incurable diseases. It turns out that the number of deaths from ecosystem pollution is higher than the number of deaths from viruses, and that much more attention is paid to virus infection, although virus infection is largely the cause of greater disease.

Hence the need to look at the issue of ecology and pollution from a holistic systemic point of view, ie. research from the point of view of causal relationships and relations, and by analyzing the relationship between the elements of the system and the relationship of the system with the environment to which the system belongs. Practice has shown that the issue of ecology and pandemics is considered in part, with more attention paid to the treatment of consequences than prevention, primarily in creating a healthy environment as a potential that can reduce diseases of the Covid-19 virus. This confirms the long-known and scientifically confirmed information that "nothing is an end in itself, nor is it enough in itself, but that everything is interconnected, where certain phenomena sometimes become causes, sometimes consequences of certain events in the natural and social order." Thus, by disrupting or eliminating one element in the ecosystem, the survival of a number of partial parts is questioned, but also the ecosystem as a whole. (Vučenović, Marković, 2011).

Transferred to the relationship between ecology and infection with the C-19 virus, it means that human health and life depend on the health of animals and plants, and that their health depends on the ecosystem, ie the quality of air, water, climate, geography and other conditions. Of course, in the feedback loop, the ecosystem is also dependent on man's attitude towards it, whether man destroys the ecosystem, or maintains it, protects and improves it.

Deforestation, fires and the destruction of natural habitats of animals, as well as the arrival of humans to wild animals, by their destruction or persecution, create a higher probability and possibility of infection and spread of disease. This is confirmed by a professor of virology at the University of Health in Texas, who states: "We are getting closer to wild animals and that brings us into contact with these viruses." Research shows that “in the last century, about half of the tropical forests in which about two thirds of all living beings in the world live were destroyed. This serious loss of animal space has an impact on the entire ecosystem and on the parts we tend to forget - infections.” (Šild, 2020)

It should be borne in mind that every animal has its place in the ecosystem, even those animals that man thinks are harmful. By destroying some, even undesirable and

dangerous animals, it leads to disturbance of the eco balance, which is reflected in a chain on other parts, but also on the whole of the ecosystem. It has been proven that even when animals change their age-old habitat, they transmit the virus by migrating, ie they infect other animals, as well as humans, using the meat of infected or caught animals, or catching them in river and sea depths. It turns out that animals, like bats, are carriers of the virus, but that they live with it and that the virus does not jeopardize their survival. However, when the virus is transmitted to other animals, or humans, it becomes dangerous to human health.

We should not ignore the indisputable fact that man is ruthlessly exploiting the ecosystem for the purpose of commercialization. Research shows that "Europe is the biggest killer of birds, especially when it comes to birds of prey. Poaching, even on protected species, reduces the quality of the ecosystem, which increases the possibility of infection with pathogens. The phenomenon of bird migration across the Mediterranean is well known. Along the way, "every year about 25 million birds flock, ie they are either killed or captured, while about 2 million birds are killed illegally every year in northern and central Europe, including the Caucasus region. The paradox is even greater if it is known that most birds are being killed for fun, so bird hunting has become a sport, which disturbs the ecological balance.

The crisis of the C-19 pandemic has shown that the transport chains, ie the turnover and functioning of market institutions, should be re-examined, especially those that are poorly or not at all standardized. This is the trade in live or slaughtered animals, which are sold in markets and green markets under suspicious or insufficient supervision by appropriate experts. This is because the pandemic has shown that markets are possible sources of infection and that it is necessary to change the regulations governing trade, especially food of animal origin, especially meat and meat products, including the ban on wildlife trade in markets around the world. This must be implemented globally, because the ban or regulation on the national or regional market is not sufficient, due to the already stated high level of interdependence and complementarity of economies at the world level.

It is clear that this proposal should be viewed holistically, because the C-19 pandemic has shown that far more damage is suffered by economies and societies regarding the impaired human health and deaths, compared to the benefits from trade of live animals and meats in inadequatly regulated green markets, ie retail markets, especially when it comes to wildlife trade.

## 3. WHAT TO DO AND HOW TO MOVE FORWARD?

The fact is that the pandemic caused great damage and brought into question the functioning of numerous institutions of a traditional character, but also the legal framework, organizational, managerial and moral values. It turns out that nothing will be the same after the pandemic, as it was before it started, that in some elements, to put it conditionally, the pandemic has brought certain 'benefits'. In short, the pandemic was marked as one of the greatest catastrophes, which occurred in the third millennium, despite all the achievements of science, technology and a new, ie increased quantum of knowledge.

Despite pessimism during and after the C-19 pandemic crisis, it should be noted that pessimism has no place here. Many predictions that the recession in various areas will last a long time will not come true, because the first results after the mitigation of measures show that the population, as well as the economy and society return to normal relatively quickly and that the damage caused by the pandemic will be repaired in a short period of time.

Predictions that the C-19 pandemic will negatively affect globalization will not come true, which is good for individual countries, but also for the whole world. It is likely that the ties and interdependencies between the states will be strengthened, because every health crisis, as a rule, strengthens the community. It is clear that "Corporate globalization has never been easy, but as international opportunities and threats to competition for the company were important before the pandemic, they will certainly continue to be important in 2021 and beyond. And since countries that are more connected to global trends tend to grow faster, we need more globalization to accelerate recovery from Covid - 19. (Altman, Bastian, 2021).

Public interventions by the states as well as the procurement of the vaccines contributed to the mentioned recovery and mitigation of economic shocks. Countries that have allocated more funds to rehabilitate a lockdown-economy and that have targeted funds for the sustainability of certain activities, or groups, will, as a rule, get out of the crisis faster and more successfully than countries that have symbolic or insufficiently targeted financial support. This statement also applies to countries that have managed to vaccinate the majority of the population and create conditions for normal life and work, ie business.

What could not have been predicted was a relatively quick return to the previous situation, given that there were predictions that economic, social, social, mental and other problems would last a long time and that they would be more difficult to resolve than the health crisis. There is already an explosion in demand for products and

services that could not be used at the time of the pandemic, although the World Health Organization has not declared an end to the Covid 19 pandemic. price, but also that mass relaxation leads to a new wave of infection and mutation of the virus in new circumstances. Hence the justification of the medical profession to continue to take care of the protection and use of measures, which will probably grow into the habit of wearing masks, disinfection, maintaining hygiene, keeping physical distance, and greater caution against infection.

The usual measures and recommendations that were followed during the pandemic, will probably remain, without coercion, because they have proven to be useful and acceptable even in normal times. This especially refers to: distance learning, ie the use of e-learning, greater interest in the application of artificial intelligence, primarily in health care, the use of electronic procurement, and electronic payment, ie business, to the digitalization of governments, public services, etc. In other words, "trade has recovered strongly and is recovering, capital flows are recovering, and digital information flows have increased." The redesign of organizations, the classic technical-technological regime has disappeared, and work from home has become more and more important. Related to the previous is the change in business philosophy in the so-called. classical industries, and the increased importance of creative industries while adapting to new circumstances. (Altman,Bastian, 2021).

These are, conditionally speaking, the benefits brought by the pandemic, especially when it comes to the speed of change, which would not happen in normal living and working conditions. The negative outcome of the pandemic is mentality, ie disturbed mental balance, due to lockdown, limited movement, numerous discrimination, especially of the old, sick and poor individuals, but also of entire families. Returning to normalcy also means a greater degree of socialization, and an increase in socializing, solidarity, increased trust and the promotion of the truth. These are values that need to be maintained and promoted by introducing new mechanisms and concepts.

## 4. THE IMPACT OF C-19 ON THE SERBIAN ECONOMY

The crisis of the Covid-19 pandemic, which has affected the world on a global level, is inevitably spilling over to all countries of the world, with smaller or larger consequences. This is happening and will happen as stated in the Republic of Serbia as well. Thus, economic growth during the pandemic was slowed despite economic

measures by the Government of the Republic of Serbia to intervene and stimulate both supply and demand. It turns out that in relation to developed countries, the economic decline in Serbia will be significantly smaller, thanks to foreign investment and relative and the fact that our economy is relatively closed. The factor here is also dominance of traditional industries that are less vulnerable to times of crisis.

Comparing the economy of the Republic of Serbia through the Gross Domestic Product before and during the pandemic, it can be seen that GDP grew by 4.4% in 2018, in 2019 this growth was 4.2%. Similar growth was expected in 2020, and the optimistic scenario even predicted a higher economic race rate of 5% and 6%, respectively, which would significantly improve the living standards of the population. However, the Covid - 19 pandemic has called into question this expectation.

According to statistical data, the economy of Serbia in 2020 suffered a minimal decline in gross domestic product, which amounted to about 1%. The first quarter of 2021 recorded a growth of about 1.2% and optimistic expectations are that by the end of the year that percentage could be higher by about 4% compared to 2020.

It is clear that the Serbian economy, as well as the global economy, will recover faster than predicted during the pandemic. Under the influence of the crisis, the Serbian economy has significantly changed its traditional attitude towards work and life, because it has accelerated the introduction of innovations in the sphere of work. In the crisis, e-commerce, e-banking, agriculture and processing industry, information industry, medical and protective equipment industry, food production and distribution, production of consumables, accelerated the application of information technologies in distance learning at all levels of education, even organizing remote trials. Electronic government, ie the electronicization of public services, including ministries, enabled the normal functioning of the state. In short, the pandemic crisis has intensified the thinking and application of artificial intelligence and the mechanization of business and other processes. (Dedić, Cvejić, Anđelković, 2020. pp. 11-25.).

Detailed analyzes show that in the pandemic, villages, hilly and sparsely populated places have increased the value, because many have found salvation in rural areas, as well as psychological peace by leaving large urban units. In a large number of places in Serbia, there was no infection, which is natural, if we keep in mind that a large concentration of people in one place directly increases the likelihood of infection.

As it was stated, in Serbia, during the pandemic, the so-called "vulnerable activities" suffered the most, such as tourism, catering, hotels, all types of transport, and especially international air transport, due to the closure of borders even between individual EU countries. Conditionally speaking, companies that are import-export oriented also suffered. Small entrepreneurs engaged in manufacturing also experienced reduced dynamics, which forced them to lay off employees, reduce the volume of business, and many closed or changed ie transformed their ways of working.

Nevertheless, in the previous group of activities, spa, mountain and rural tourism was not at a greater loss in Serbia during the pandemic. Although the spas are intended for the elderly and the sick, cult spas in Serbia even had a higher percentage of used capacities compared to normal conditions. The interventions of the state through vouchers also contributed to that, but also the reduced possibility of using foreign tourist destinations. In the sphere of catering, there has been a transformation of the classic way of doing business, where the production and distribution of food has multiplied, as well as the distribution of basic foodstuffs to the addresses of customers.

Serbia, like other countries, has redesigned traditional organizations and jobs. Retail based on the classical way of doing business, as well as other classic activities (banking, retail, insurance, funds, etc.), experineced difficulties in supplying the population in the conditions of a lockdown.

The organizations enabled the employees to work from home, and thus the classic work regime was broken, where the employees were controlled when they came and went from work, as well as their engagement during the prescribed working hours. Although there are no official statistics, it is shown that working from home, especially when it comes to administrative and highly intellectual jobs (scientists, researchers, lawyers, consultants, etc.) did not have reduced jobs, ie reduced labor productivity. "In Serbia, since April 2020, the purchase of food over the Internet has increased by about 200%, turnover of clothes by 100% and technical devices and computer equipment by 50%, the courier service has increased its business by over 50%, the turnover of drugs and pharmaceuticals has increased, as stated by the Ministry of Trade, Tourism and Telecommunications" (Janković,2020).

In certain highly intellectual organizations, during the pandemic crisis, human relations improved, and even the innovation effects improved, because employees had more time to create ideas on how to rationalize work from home. It is believed that a large number of organizations from the banking and financial, trade and other

industries will continue to do business from home, which will make the current assets of these industries almost unusable.

We should also note the indisputable fact that in the crisis of the Covid - 19 pandemic, intangible values suffered the most, such as: morality, solidarity, justice and fairness, that is, the spiritual values of man, which, as a rule, are difficult to create and are very easy to lose. Therefore, it is certainly true that after the health pandemic, there will be a new pandemic: the pandemic of mentality and morals. It will be harder and it will take longer to cure from this pandemic compared to Covid - 19. (Radosavljević, Anđelković, Anđelković, Radosavljević, 2020. pp 351-384).

The fact is that Serbia should use the experiences and regulations of the EU regarding the adoption of appropriate policies for the recovery of the economy, as well as the establishment of priorities, because the pandemic has exhausted existing funds and reserves, so the way out is to invest scarce funds in certain priorities. In this context, "Representatives of the European Commission have made economic recovery from the Covid-19 crisis through green recovery and sustainable production a priority in further work, which will contribute to the fight against climate change in parallel with the recovery from the economic recession." This document, ie the European Green Agreement, is also the basic document of EU change policies that contributes to a sustainable economy. In other words, through appropriate policies, the primary and secondary sectors should be allowed to switch to clean or green technologies and resources in order to stop climate change, especially warming, which further leads to an imbalance in the natural order. (Kamberović, Mitrović, Behrens, 2020, 39.).

From the above, it can be stated that every crisis, even the pandemic crisis, has its threats and dangers, but that quality crisis policies can be used to improve the economy, ie we can implement the introduction of new business models in response to the crisis. In this context, the Republic of Serbia can strengthen the economy by introducing and promoting circular economy, ie circular innovations, as well as by introducing economic mechanisms and measures for environmental protection, introducing tax and other burdens for those who pollute the environment, or subsidies and financial incentives for those who work to improve the environment and who strive to establish a "green economy". Of course, energy efficiency measures, improvement and regulation of the functioning of urban areas, and above all the promotion of "smart cities", all have great effects.

This is related to the C-19 virus, because it has been proven that a healthy environment has a significant impact on its spread, ie that regions and places that

have a higher degree of water, air and soil pollution weaken their immunity, thus creating a favorable environment for spreading of the virus.

Serbia, as well as other countries, must understand that crises are an integral part of life and work and that they will become more frequent, with a more devastating effect. The crisis of the C-19 pandemic is not over, and the question is whether it will happen at all, or humanity will have to live with this, as well as with other viruses. Vaccines as a tool to prevent infection have made a significant contribution, but it should be borne in mind that viruses are "smart" and have great power to adapt to certain situations, which requires new and often different answers.

## CONCLUSIONS

The crisis of the C - 19 pandemic has negatively affected national economies, but also the global one. It has had a significant impact on various aspects of the economy, such as the capital market, the labor market, foreign trade, the consumption and production sectors. That there is a correlation between health care, ie life and health, is evident when in decision-making regarding crisis management there was a conditional dilemma: life-or economy, because it turned out that only healthy and living people can create the economy, but also that life implies the satisfaction of basic life needs, without which there is no life.

Thus, in order to protect national public health care and human health, many countries have introduced quarantines for individuals, closed production, transport and other facilities, severed long-term business ties and relations, etc. This reduced revenues, but also the filling of national budgets, which hindered the functioning of businesses and other organizations. On the other hand, health and other problems increased expenditures, which further burdened the national economy. The way out is sought in borrowing, deferred payments or investments, and in some countries in the controlled printing of money.

The social impact, ie the social component in a pandemic, should not be neglected either. It turned out that quarantine banned gatherings, international and domestic travel, cultural, entertainment, sports, religious and other events were banned, which led to numerous disturbances among people, including an increased number of incidents of death, an increased number of domestic violence and even murders.

However, the pandemic, in addition to taking a large number of human lives, ie destroying the economy, also brought certain benefits, such as: reduction of air pollution, but also reduction in water and land pollution, reduction of noise and reduction of pressure on tourist destinations. The pandemic, as a radical change, introduced numerous innovations, accelerated their application and significantly influenced the changes in people's attitudes towards innovations in the sphere of work and life. It is believed that the pandemic through digitalization has increased productivity, but also conformism in doing business.It was also pointed out that there is a possible way out of the pandemic crisis, noting that after the health crisis caused by C-19, there will be economic, political, social, moral and other crises. Preservation of a healthy environment is a condition to prevent or reduce the effect of mass health infection, because it turns out that the pandemic originated or arose due to the bad attitude of man towards nature, because nature rewards, but never forgives. Hence the need to adopt a Strategy for Environmental Sustainability, which would incorporate the issue of the fight against the pandemic, but also the Strategy for the fight against the pandemic.

The Republic of Serbia had the smallest decline in economic activity. A number of activities experienced a large decline, which was reflected in the reduction of Gross Domestic Product, a number of activities maintained almost the same business dynamics, while some areas recorded growth, which means that the outcomes of the crisis can not be observed linearly, even within a single industry. The recovery of the Serbian economy will therefore be faster and greater compared to other economies. However, the biggest loss recorded at the global level is intangible, and that is the loss of solidarity between countries, or within individual countries, as well as the loss of trust and the right to true and timely information regarding the pandemic, but also regarding other areas as well.

The world at the global level, and especially the World Health Organization and national institutions in charge of public health, must thoroughly analyze the causes, epidemiological processes and outcomes, in order to be more prepared for the next pandemics, or the third, fourth, or each subsequent wave of this crisis. Pandemics, as well as other crises, will become more frequent, will last for longer periods of time, with more devastating effects on human health and lives, as the greatest values of this world.

**REFERENCES:**


1. Altman S, Bastian P, (2021): The state of Globalization in 2021, Harvard Business Review https://hbr.org/2021/03/the-state-of-globalization-in-2021.
2. Buck J.C., Weinstein S. B, (2020): The ecological consequences of a pandemic, Biology Letters, 18. Novembar, Royal Society Publishing, https://royalsocietypublishing.org/doi/full/10.1098/rsbl.2020.0641
3. Cxang I, Li H, Zhang R, (2021): Efects of Pandemic Outbreak on Economies on Economies: Evidence From Business History Context, Front Public Health, 12 May, https://pubmed.ncbi.nlm.nih.gov/33777885/
4. Dedić V, Cvejić R, Anđelković M. (2020): Epidemiological Model of Covid-19 Epidemic Information Extraction Through a Case Study of Comorbid Associations by the Evt Method Using AL, Covid – 19 Pandemic Crisis Management Non-Medical approach, International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
5. Janković M (2020): Korona virus, privreda i posao, BBC, 15. oktobar. https://www.bbc.com/serbian/lat/srbija-54461554
6. Kamberović S, Mitrović S, Behrens A (2020): GAP analiza, Mogućnost ekonomskog jačanja primenom održivih poslovnih modela nakon pandemije Covid-19 u R. Srbiji, Misija OEBS-a u Republici Srbiji, https://www.osce.org/files/f/documents/7/8/479681.pdf
7. Praščević A (2020): Ekonomski šok pandemije Covid 19 – Prekretnica u globalnim ekonomskim kretanjima, Ekonomske ideje i praksa, No 37, jun 2020.
8. Radosavljević D, Anđelković M, Anđelković A, Radosavljević M. (2020): Post-Pandemic Pandemics with Regard to Serbia, Covid – 19 Pandemic Crisis Management Non-Medical approach, International thematic proceeding, Faculty of information tehnology and engineering, Faculty of business studies and law, Belgrade.
9. Rume T, Islam SMD, (2020): Environmental effects of COVID-19 pandemic and potential strategies of sustainability, Heliyon journal, https://www.cell.com/heliyon/fulltext/S2405-8440(20)31808-9?_returnURL=https%3A%2F%2Flinkinghub.elsevier.com%2Fretrieve%2Fpii%2FS2405844020318089%3Fshowall%3Dtrue
10. Sinek S. (2019): Beskonačna igra, Kontrast, Beograd.
11. Šild Č (2020): "Uništavanje prirode i novi virusi", DW-Made for minds, 16.04. https://article.wn.com/view/2020/04/16/Unistavanje_prirode_i_novi_virusi/

12. Tanveer F., Khalil T., Ali M. & Shinwari Z (2020): " Ethics, pandemic and environment; looking at the future of low middle income countries", International Journal for Equity in Health, 19, Article number: 182, https://equityhealthj.biomedcentral.com/articles/10.1186/s12939-020-01296-z.
13. The World Bank: The Global Economic Outlook During the Covid Pandemic: A Changed World, The World Bank, 8.06.2020. https://www.worldbank.org/en/news/feature/2020/06/08/the-global-economic-outlook-during-the-covid-19-pandemic-a-changed-world
14. Vučenović V, Marković A. (2011): Izvorišta holističke teorije organizacije, FORKUP, Novi Sad.

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# MANAGEMENT OF SECURITY CRISES, SITUATIONS AND RISKS AT THE TIME OF THE CORONA VIRUS-COVID-19 IN THE REPUBLIC OF SERBIA

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***Abstract:*** *The primary and basic goal of this paper implies endangerment, threats and consequences on the safety of life from infectious caused by the Covid-19 and similar viruses. In other words, this is a dangerous and vicious disease, which has affected and will continue to affect, a great number of people, and will take the lives and health of numerous others. Therefore, viruses pose an extreme danger to health security by causing very dangerous infectious diseases, which in turn cause the death of millions of people on planet Earth. This paper presents and explains the prediction of threats and risks, as well as their suppression and elimination of security measures.*

***Key words:*** *Management, Covid-19, strain-virus, threat, crisis, risks.*

## INTRODUCTION

This paper primarily aims to indicate, theoretically explore and explain a, frequently, dangerous threat, and therefore consequences, with loss of health and life, and the endangerment of society in general. The Covid-19 virus and strains of the virus (British, Brazilian and African) are a major threat and problem for every society, including the Republic of Serbia. In order to contribute with our knowledge, expertise and skills to, at least, a reduction in the spreading of the virus, infections and diseases, by which we would contribute to an appreciation and respect for measures against the vicious disease, proposed by the Crisis Staff and the Government of the Republic of Serbia.

Therefore, the activity of all authors is professional, expert and engaged in security activities, from which point of vie the topic will be investigated, drafted and shaped, management from the aspect of security, without dealing with the health field. In other words, in the opening remarks and the posing of the problem, we will aim to define and conceptually determine, potential, expected and emerging threats, risks, dangers and consequences, for the safety of people, their lives and respect of security measures.

Any announcement, threat, risk, and the causation of danger and emergence of an epidemic disaster, in this case, as a result of the Corona virus. Disasters can be caused by failure to respect security measures, failure to respect decisions made and instructions provided by authorized state bodies. These catastrophes cause consequences for health, life and society, as a result of high mortality as well as for the economy, development and hardships which will be endured for the duration of the Corona virus as well as after. Disasters threaten both our society and the entire planet. This epidemiological situation has covered the entire planet, with infection and disease, and resulted in a high mortality for people of all ages. Therefore, this phenomenon requires raising the awareness of all citizens in undertaking the set measures. It also requires mandatory and necessary measures aimed at reducing, eliminating and sanctioning hazards to the health of society, citizens, economy, health and similar activities. In addition to the outbreak of the virus released from a laboratory or transferred from animals, a very large threat was caused by NATO to FRY in 1999, the consequences of which are still felt by the citizens of the Republic of Serbia, and will continue to pose a threat to the population of the Republic of Serbia and the region. However, these effects also result in major impact in the form of diseases, as well as accidents of high mortality, as well as temporary and permanent illnesses. Thus, we will explore all activities in particular, define and explain them, so

as to enable the reader an easier understanding of the presented paper. However, our primary goal is proving the problem, by defining it and, through researching it, its causes, infections, diseases and mortality, and thus the risk of these hazards intensifying. This implies possible or resulting changes, with the outbreak of the epidemic, i.e., during the regular state of affairs, which has been stopped by police measures and the introduction of an emergency situation, almost in all societies throughout the globe, at least when it comes to the Corona virus, Covid-19, societies from previous times did not fare any better, when viruses, plague, and other disease appeared. Fortunately, certain societies, such as the Republic of Serbia as well as some other countries, have reacted and acted in a timely and adequate manner, both preventively and repressively, in conjunction with health and other institutions thus enabling the response to crisis management.

## 1. SAFETY AT THE TIME OF THE CRISIS-EPIDEMIC

Therefore, all of the above causes a serious crisis for the survival of life. While a crisis, as a social phenomenon, poses a threat to sudden, abrupt and active action, both with the outbreak of a virus and the speed with which it spreads.

Risk, as a social phenomenon, poses a threat, with social and less natural activities, in a certain society, space and time. Therefore, each risk represents an extreme event (among other conditional expected risk values).

Threat, as a research problem, is the imposition of fear, panic, destructive impacts on an individual, group, society, and so forth. In any case, threats cause damage and consequences for health, which can be imposed and achieved, both for life and for human or social values.

In addition to these threats and hazards it is inevitable that, and often impossible to prevent, stop and remove these threats. Many societies were unprepared, professionally also, by the latest threat from Covid-19, with respect to mutual communication, organization and qualified forces.

A catastrophe is a danger that leads to catastrophic consequences for a large number of people infected by Covid-19, as a disease and the mortality it causes. These threats have caused a massive catastrophe for a great number of victims. By introducing police curfew and other measures, by declaring a state of emergency, states have tried to reduce the number of infected, sick and deceased persons. In order to ensure and enable management to fulfill its obligation and perform its activities, it

is necessary to open a public debate in a timely manner, in accordance with debates or documents of the international community or the EU on decisions, actions and conclusions regarding viral changes and the outbreak of the epidemic. It is also necessary to compare and assess ones own possibilities in contrasting these phenomena and seek cooperation and assistance. The above mentioned threat has accelerated and forced many societies to train health and security forces and resources, for rapid and effective action, against a vicious epidemic.

Governance through management, with available health, security and other forces in travel agencies, aims to prevent and combat risks. If a risk however does occur, a state of emergency is put in place. Therefore, through expert management of forces and other available means we reduce the consequences, from infection, disease and mortality. Management implies the government, ministries (health, veterinary, military police, professional services, as well as involved civil servants). Especially if we remind ourselves of civilizations that disappeared before the appearance of our own, a few of them disappeared precisely due to epidemics, natural disasters, and some due to a combination of natural disasters and wars. We find ourselves in a time when the international crisis and global relations impose the same, when we are increasingly and ever more dangerously affected by natural disasters. Regional wars across the globe also impact climate change. What is even worse, and what imposes fear in the international community, is that if we are failing to adequately confront these dangers, which are almost daily and throughout the entire planet. In this case, Covid-19 is a social invention aimed at creating massive monetary assets and reducing the global population (Koloman, 2006).

Mutual communication, in our problem, research means and represents specific communication, knowledge, cooperation and communication between teams, management, individuals, institutions and other participants in the creation of emergency situations, caused by the threat and danger.

## 2. THREATS, HAZARDS AND CONSEQUENCES AT THE TIME OF THE CORONA VIRUS EPIDEMIC, COVID-19

In order to point out the problems that may arise or do arise at the time of any epidemic, it is necessary to explain and define the consequences, risks, risk announcements, risk assessments, threat assessments and other hazards that may endanger the system in effect in the Republic of Serbia. So, in our case, risk (from Italian Riscare - to expose oneself to danger), exposing oneself to risk, and thus to

danger, by calling into question life and life goal All of these put at risk, the factor (action/decision, as an element of possible danger in the onset of unwanted consequences for the lives of people, tangible and other goods, that are part of tourism and its activities.) A potential act of a subjective nature in view of the possibility of loss or injury to a good, causing unwanted situations or harm to the subject/object of security. The degree of probability of the risk decision is directly related to an assessment, i.e., the ability of the bearer, the virus or the contagious epidemic in a tourist activity. The theoretical concept of risk indicates cases of viral danger, with the probability of a future negative impact on achieving personal, social, social, economic or security objectives. Risk to tourism, in practical terms, is an activity with which the risk-holder risks, enters and implements an activity he is not sure will succeed or will have the expected profits." (Bošković, 2006). Therefore, in our case, risk in tourism is, most often, a threat to the safety of people and their health, other living beings, the environment and other values that the Republic of Serbia has at its disposal.

However, risk notification, in our problem, is an endangering situation in which someone threatens or announces threats of pending human threats, artificially induced threats, and thus a crisis. Therefore, we consider a notification, to be a serious threat, which must be taken seriously and which must be preempted by an adequate defense, or protected by health and security institutions. In this respect, security prevention and protection against all forms of threats, implies legal measures implemented by security institutions (Stojanović, Stojanović, Stojanović, 2020, p. 229-230). Therefore, the security of the situation in any case, including the outbreak of an epidemic and the declaration of a state of emergency, make a security assessment of the threat of an epidemic. They also contribute to the management of COVID-19.

“Risk assessment, of extreme and catastrophic events with the occurrence of a viral infection and epidemic, with the limitation of the expected risk value, is one of the most dominant steps in the risk assessment process and its quantification. When making a risk assessment and when assessing the endangerment of the security of the Republic of Serbia, it implies global endangerment, regional endangerment and internal endangerment. “First of all, state bodies and security subjects of the Republic of Serbia assess the potential hazardous and risks, including epidemics" (Stojanović, Pejanović, 2020. p. 56-58).

### 2.1. Threat assessment

As a problem resulting from these risks and consequences which are of social character. In this and similar cases, it means: fear, intimidation, forced action, impact on free will, extortion of a decision, grave threat of causing some inconvenience, material damage, or physical danger." (Bošković, 2015). "A viral epidemic is among the most serious and discussed risks, of a global character, covering the entire planet. In this respect, modern science tries and aims to understand an epidemic, and therefore its threats and dangers to the health of people and other living beings. However, with the onset of a viral outbreak a crisis is created within countries, their institutions, with a large number of people becoming sick with fatal consequences. "Crisis (Greek crisis-judgment, debate). Sudden change, turning point, very difficult situation, critical situation in the functioning of an entity, process, organization, area or system. A problematic situation and state in some field (state, nation, domestic and international security, economy, politics, ecology, tourism, etc.). For an individual, a compromising subjective or social circumstance, without an adequate response-solution, i.e., an unreliable mechanism of leaving the state of risk and uncertainty." (Bošković, 2015). However, with respect to our problem, it is not just a threat to a certain society from disease and epidemic, or the spread of a vicious disease from one society to another. Therefore, threatening appearances, of this kind, are often caused by man, with his activities or inactivities at the time of a hazardous situation, by not abiding by prescribed medical measures. Thus, apart from the individual's endangerment, an epidemic is aided and prolonged by disorganized societies and their institutions. In relation to a threat of this kind, they arise from the presence of large amounts of chemical-biological, artificially-produced viruses, as well as animal diseases. Between many social threats and the causation of risk and consequences from viral diseases, viruses, plagues, fevers and other diseases to be discussed later on. However, viruses or other diseases can be caused by human beings as well, primarily by producing and abusing artificial viruses. Abuses are committed by political institutions of countries that are prone to wars, conflicts and the use of dangerous viruses. Followed by, "terrorist organizations, criminal groups, who are equipped and have perfected, and who resort to this form of attack and threat. With the emergence of the new millennium, there have been new and modern threats, both to social values and to a number of countries. (Pejanović, Rakić, 2016, p. 320).

Also, the transformation of terrorist organizations results in increasing threats and risks to the security of societies, including the provoking of diseases and epidemics, with the ejection of poisons and explosive devices. (Marković, Pejanović, 2017. p. 189-203).

An answer to these events can be provided by health, military, police, gendarmerie, civil protection, fire protection, physical and technical security and other professional institutions, both by governance and research. (Pejanović, Laković, Stojanović, 2007).

In order to explore, identify and prove the necessity and importance of prevention, protection, mutual cooperation between individuals, teams, group, management and other participants in preventive and security actions. In other words, "in Latin, communication is a statement, presentation and lecture on a problem." (Mićunović, 1988). In our case and the posed problem, communication and mass communication between participants in prevention and protection, through interviews and agreements, as well as through social and government, as well as other means of communication and information, is a condition for reducing and eliminating threats and the risk of the occurrence, development and spreading of epidemics. In order to explain the concept and definition of risk in this case, it is necessary to point out the appropriate terms regarding the definition of risk problems. Thus, "risks are an integral part of life, every individual, group, organization and state. Those who are not willing to risk, are left without an opportunity to exploit a number of favorable circumstances, which has happened in a number of states as a result of Covid-2019." (Keković, Savić, Komazec, Milošević, Jovanović, 2011).

"A Disaster is a serious event and appearance, to follow the degree of law over a wider range of seriousness, i.e., type of serious event of seriousness." (Bostrum, Ćirković. 2011-2012). According to data obtained by literary research, in our opinion and according to the proposed definition of a catastrophe or disaster, the emergence of an epidemic in tourism is a sudden phenomenon with major and dangerous threats with serious consequences, which over a brief period of time cause catastrophic consequences for the lives of people and other living beings, which are related to tourism.

Health and risk management is, in any case, a strategic decision, management processes, benefits, gains and so forth, and is essential for risk management through organized tourism forces in a society. In this case, we look back to the other side and risk decision-making, which can very often cause threats, dangers, and therefore consequences in the form of damage or endangerment to values.

### 2.2. Management of forces for crisis, risks and disasters

In this case, it is neither an easy nor a simple task managing emergency situations or states of emergency as every crisis, including an epidemic, is a threat to the essential values of society, the urgency of action, the uncertainty of consequences and so forth. For this reason, the effective management of risk and the elimination of forces or reduction of the threat to the security of society in general and its citizens in particular, is planned and organized. Risk management, should be a regular activity of a state which includes all available forces, resources, equipment, communication, knowledge, accompanied by skills and other necessary activities. All national and other forces, organizations and institutions, social communities and individuals are a guarantor for risk reduction. This is a complex process required to reduce risks to the lowest possible measure or number (Ćulibrk, 2013). In this regard, risk management is a very complex and far from an easy problem, and task, which cannot be managed, communicated, decided upon and implemented, through preventative and protective measures, by simply anyone, which is not easy at the outbreak of an epidemic." This problem was faced by members of health institutions, members of crisis headquarters, as well as the governments of many countries, at the time of the appearance of Covid in 2020. This behavior is often compounded by an untimely response from health and management, to any threat. "In any case, problems and consequences arise when despite a prompt announcement or notification of risks, there is no reaction by management and health. Prior to indications, announcements, and the occurrence of a virus or a viral epidemic, in a particular area or country, if no one has assessed this type of risk such threats will have consequences. In our case, the announcement of the virus and the Covid-19 outbreak was lacking, and once it appeared in Wuhan-China preventative and protective measures were commenced with which contributed to the spread and emergence of the same in all the countries of the world. In this respect, the international team evaluated, without any separate research, that Covid-19 was transferred from bats to man in Wuhan. In other words, the intention was to conceal the actual appearance of the virus that was expelled from a lab. Confirmation of this case is the infection of a number of people, three months ago, in some Western countries. When it comes to management during periods of such and similar threats and risks, no one was prepared to answer this phenomenon as societies and management were surprised and unprepared for the danger. "The importance and prerequisite for the management of risk and emergency situations in the aftermath of a crisis, above all (risks) is neither good nor bad but is simply a measure of deviation from the expected outcome." (Keković, Kešetović, 2006). "In this regard, the management of risk and emergency situations at the onset of an epidemic is understood to be a certain process in which institutions or certain

organizations view the risk problem, in order to respond to the same and achieve sustainable pre-conditions or their improvement within each activity, of this type or case. Only under such conditions is it possible to protect human life, animals and critical infrastructure. Therefore, natural resources, technological processes, technical facilities and facilities are considered to be sensitive to natural-artificial and human threats, which can cause great risks and certainly consequences in the Republic of Serbia, in the future as well." (Pejanović, Rakić, Komarčević, 2014)

### 2.3. Responsibility in the function of managing security measures

Before we commence with explaining the function of managing security measures, it is necessary to explain the security function in joint actions, in taking measures through a corporate-coordinated action, primarily in combating possible threats. "Corporate integration of security entities is basically a strategy. Strategic approaches to modern reforms in security systems are realistic assessments, representations and expectations, so that with joint services and tasks quality in the security sector is improved. Through a coordinated integration of services and jobs in the national field, it also enables and facilitates better coordination, cooperation and unification of the system and activities, also possible on an international plan. (Pejanović, Stojanović, 2019,p.50-51, 112-113).

So that we could talk about security and its interests in the Republic of Serbia, its functions, roles and responsibilities, which relate to the security of employees, social and private values in the time of occurrence or appearance of any epidemic to be addressed.

Therefore, the responsibility of the security service provider towards the users of their services, as well as the values they utilize in such activities. The responsibility of security agencies or institutions towards their clients is extremely important and is one of the first in order, which is binding on service providers and those who use the services for taking protective measures. In our case, security agencies or institutions and service providers, as well as users of security services, have the right and responsibility for the safety of their clients, both in their regular activities and in emergency situations, in the event of an outbreak or occurrence of an epidemic, to be discussed in this article. Responsibility is considered to be care for service users, as regards security services, for them to take security measures as well. In this case, security measures for protection are prevention and protection, by health institutions, against viral infection, i.e., the protection of the sick and the prevention of clumps among clients, as well as reporting to security and health institutions or

medical staff, and other infected institutions, about the condition of the sick. Also, users of all services and security agencies, through their bodies within agencies, are preventing and refusing the admission of clients, who are found to be infected with the virus and to instruct them towards appropriate health institutions. If security prevention measures were not respected, the responsible persons and service providers themselves accept responsibility and thus certain sanctions if they do not approach with implementing security measures.

"For security it is first and foremost necessary to explain the concept of security and its role in protection. Security is considered to be a specific condition in which there are no threats, and therefore consequences for the health of people and other values. In this respect, we consider security as the initial state of the spirit, and security; however, in real terms, it is the absence of a threat to values and the absence of fear that they will be at risk; security, organization and function, a state of protection against danger and the threat to goods- values." (Bošković, 2015). In relation to our problem, security is a sitaution where there are no threats and risks to society from the spread of an epidemic, and consequently infection, as well as its values and activities. Security as a situation is achieved through security prevention and protection, which has been achieved by taking appropriate security and protection measures, by an entity or an institution.

A security situation is a set of common relations and functions of prevention and protection, as well as the respect of statutory and other legal regulations, as a set of security measures that are implemented by protection, in order to achieve the security of society, and other institutions related to these activities.

Security measures, are prescribed and adopted activities, which are provided and implemented through security state institutions, security measures within security agencies and institutions, as well as the inactivity of the endangered factors. All of these are considered to be organized by the state, state institutions, as well as agencies with their own forces and individuals, in order to prevent and eliminate threats to the Republic of Serbia. The management of diseases, epidemics and consequences is done with security measures.

Potential security risks to society, include anticipated and potential threats or dangers, which may endanger human lives and values, as well as the values of, both state and private values. Threats and potential risks to the security of society and its values may arise due to actions and threats by terrorist groups, in Kosovo and Metohija from criminal-mafia organizations, such as criminal organizations led by Velja, so-called Nevolja (Serbian word for bad news), the Skaljarski and Kavački

clans, and similar groups, as well as mentally ill people, natural disasters, technical accidents, climate change, environmental hazards, viruses and diseases.

Security is a situation in which threats to the security situation in a country, in this case the Republic of Serbia, are not anticipated, expected and do not occur. This guarantees security and stability in countries, cities, as well as in tourist agencies. Security means eliminating all threats and dangers, and taking society to a secure state where everyone feels safe.

Security challenges, in our case are feelings, desires, anticipation and responses, to any threat and endangerment. In some cases, challenges are preventive measures, actions and the elimination of any threat. Threats pertain to people, human lives, health, animals and tourist values, which are prevented and protected by security measures implemented by security entities, tourist agencies and each individual within an agency. Between potential threats to tourist agencies and people, which are of interest to security challenges. " (Bošković, 2015). Thus, security challenges in specific cases are considered as achieved safe situations through the implementation of the above measures, activities and organizations. To a lesser extent, terrorism is also a threat (Pejanović, Stojanović, 2018). In this respect, NATO was neither entitled nor required to engage in such actions because no NATO member state was attacked or threatened, and these rules are embedded in the organization of the Alliance, obliging them to defend their members. In other words, there was no need to attack, kill, demolish and destroy territories that do not belong to them, which actions were the cause of the conflict in Bosnia and Herzegovina and Kosovo and Metohija." (Pejanović, Vejinović, Rakić, 2018). Thus, in our case, protection and rescue in the event of an emergency and the outbreak of an epidemic are working. The abovementioned institutions, health institutions in the health ministry, are one of the most important institutions with respect to health, which primarily acts as prevention for infection, and thus people contracting any disease, including during an epidemic. Secondly, it provides medical treatment to people who have contracted a disease during an epidemic, preventing death, in health institutions.

## 3. EMERGENCY MANAGEMENT DURING AN EPIDEMIC

In this case, emergency management starts before the danger occurs and continues in the event of any form of threat, when these threats are assessed as a threat which will cause danger and consequences. "An emergency situation involves an unfavorable situation in which risks and threats and other major disasters and

dangers to the population, the environment and other major accidents and disasters to material goods, are always a condition for an emergency situation, and in severe conditions a state of emergency." (Pejanović, Đurković, 2011). Therefore, under an emergency situation we mean a state of affairs, as well as that the danger is of such character, scope and intensity in which consequences cannot be prevented or eliminated by regular activities of relevant authorities and services. With a change to the state of affairs, measures are alleviated and consequences removed, resolved with the implementation of special measures and actions with increased forces and resources. Therefore, a state of emergency and emergency situation, at the proposal of the Crisis Staff, was pronounced by the Government of the Republic of Serbia with the onset of the Corona epidemic, i.e., Covid-19. In this respect, in all the above forms of threat, emergency management was carried out by institutions, which own certain activities, in this case the Republic of Serbia in the majority of cases. In this case, the management of an emergency situation is carried out by professional, trained and equipped institutions, health, protection and rescue in the event of an emergency or a state of emergency when the military also gets involved.

## CONCLUSION

The emergence of the virus and the Covid-19 epidemic has forced the entire international community, including the Republic of Serbia, to take appropriate and necessary measures to prevent and protect its citizens. Measures assumed by health institutions to prevent and protect have taken the form of collective vaccination. Some citizens of the Republic of Serbia have received vaccines on a voluntary basis, others received them as treatment, while others still refuse. Most of the citizens who do not want to receive the vaccine do so out of fear, a fear imposed by opponents of the vaccine and their view that the vaccine is unnecessary and will leave certain consequences. The start of the epidemic crisis was in early March 2020 and persists to the date of this paper, while how long it will last, depends on the discipline of irresponsible citizens. All citizens are under threat and in danger of the virus, regardless of their age, whether they are children, the young or the elderly. The threat of an infection, with every citizen who comes into contact with the virus, is present.

The government, the crisis staff, health institutions and security entities have assessed both the infected number of citizens and the number of patients affected by this vicious disease that has killed several million people in the international community, including the Republic of Serbia. Based on the assessment of the risk to people's lives, crisis management, threats and diseases were organized and

implemented. Each institution as accepted responsibility for its activities by conducting its own crisis management. Management of security measures has been implemented through joint action and engagement of all institutions that are trained in the implementation of security measures. Since the state of emergency and emergency situation has been instigated, all entities in their respective activities have managed, with emergency situations, whose responsibility has been accepted by the Government in relation to the implementation of all of these measures, from the beginning to the present day. In the end, we conclude that the outbreak of the virus and the outbreak of an outbreak of infectious virus has largely halted the regular functioning of society, causing vast amounts and investment of financial resources and stagnation of the economy and other activities.

**REFERENCES:**


1. Bošković, M., (2015). Kriminološki Leksikon, Matica Srpska, Novi Sad.
2. Bostrum, N., Cirkovic, M., Rizici globalnih katastrofa, Helix Smederevo (2011-2012).
3. Kekovic, Z., Keszetovic, F, (2006). Krizni menadžment i krize, Belgrade, Faculty of Security.
4. Keković, Z., Savić, S., Komazec, N., Milošević, M., Jovanović, D., (2011), Procena rizika, Belgrade: The Center for Risk Analysis and Crisis Management.
5. Koloman Dž, (2006) Komitet 300, Narodna knjiga, Belgrade.
6. Marković S, Pejanović Lj., (2017). Monografija međunarodnog značaja, Savremeni izazovi međunarodne bezbednosti, Savremene karakteristike i transformacija terorizma, FLA, Novi Sad and CMS, Zagreb.
7. Mićunović Lj. (1988). Savremeni rečnik stranih reči, Književna zajednica, Novi Sad.
8. Pejanović Lj., Laković V., Stojanović S., (2007). Ugrožavanje i fizičko-tehnička zaštita, Belgrade, Institute for Political Studies.
9. Pejanović Lj., Stojanović S., (2018). TERRORISM AND TOURIZM SAFETY, p.707, University of Kragujevac, Faculty of Tourism and Hotel Management, Vrnjačka Banja
10. Pejanović Lj., Stojanović S., (2019). Korporativno koordinirana akcija u suzbijanju mogućih pretnji. Monograph, Union University Nikola Tesla, Belgrade.
11. Pejanović Lj., Stojanović S., (2020). THE NATO AGGRESSION AGANST THE FEDERAL REPUBLIC OF JUGOSLAVIA TWENTY YARS LATER AND

CONSEQUENCES FOR TOURISM SECURITY AND THE HOTEL INDUSTRY, University of Kragujevac, Faculty of Tourism and Hotel Management, Vrnjačka Banja.

12. Pejanović Lj., Stojanović S., Jovanović N., (2019) "Koorporacija i korporacijska bezbednost, pristupaju aktivnim i kvalitetnim reklamiranjem na više informacionih sredstava." Odnos koorporacija i koorporacijske bezbednosti, Socijalne komunikacije teorija i praksa., University of Kiev-Ukraine, Kiev.
13. Pejanović, Lj., Đurković, R., Monografija, Zaštita i spasavanje u vanrednim situacijama, FLV, Novi Sad, 2010.
14. Pejanović, Lj., Rakić M. (2016), Savremeni sigurnosni izazovi u Evropi, University of Applied Sciences Velika Gorica, Zagreb.
15. Pejanović, Lj., Rakić, M., Komarčević, M., (2014). Faculty of Criminal Justice and Security, University of Maribor. Ljubljana.
16. Pejanović, Lj., Vejinović, D., Rakić M, (2018). Evropski defendologija, centar za naučna, politička, ekonomska, socijalna istraživanja, bezbednost, Banja Luka.
17. Stojanović S., Stojanović R., Stojanović N., (2020). The right to safety protection, life and occupational health, is a basic right of employees and is guaranteed by the Constitution of the Republic of Serbia, the area is regulated in detail by the Law on Occupational Safety and Health. "Osnovna delatnost privatne bezbednosti, SAIN, Belgrade.
18. Stojanović S., Pejanović Lj. (2020) Pretnje rizici I posledice upravljanja u vanrednim situacijama, SAIN, Belgrade.

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# CRISIS PANDEMIC ECONOMY OF SERBIA - MARKET FAILURE AND OPPORTUNITY - ALTERNATIVE SOLUTIONS

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***Abstract:*** *The appearance of the virus (lat. poison) Covid-19 and the extent of the infection it had, has and will have in the coming period, negative consequences for the economies of all countries in the world, especially small economies, such as Serbia. In such complex situations, states try to reduce the negative effects on the economy and even extremes, which have harmful consequences for humans, the environment and life in general. Objectively, there is an interest in preserving jobs, but also protection from pollution (infection). In complex conditions, the state should strive to provide an environment for more intensive economic activity, but at the same time maximum health care for all citizens. In the economic field, the results of Serbia are indisputable, but the negative external effects seriously disrupt the achieved results, including health. It is an opportunity to turn a particular problem into a chance and to reduce opportunism to a minimum.*

***Keywords:*** *crisis, pandemic, economy, Serbia.*

## INTRODUCTION

In addition to other economic results in 2020, there was a budget deficit of approximately four billion as well as an increase in public debt by about three billion euros, a decline in imports and foreign trade deficit by only three percent compared to a record 23.9 billion and 6.3 billion euros from 2019. There is also a decline in the inflow of foreign currency (based on remittances from abroad) as well as foreign direct investment, by about two billion euros compared to a record 7.3 billion euros in 2019. The dinar is stable, thanks to the spent foreign exchange reserves for its defense of nearly 1.5 billion euros, which includes new borrowing to preserve the necessary foreign exchange reserves. And all that is a reality, which in the future can turn into a profit, because borrowing in the world crisis is a norm, if the debts will enable not only survival, but also to create preconditions for development, which would be the desired result. Investing in infrastructure is the right path, which is indisputably taught to us by the history of the economy.

Negative externalities, such as the inadequate attitude towards the Covid-19 pandemic, and its implications are an obvious example of direct and indirect links between the economy and everyday life in the presence of an unusual poison. Pollution of the environment and even pandemics, as a typical negative externality, imposes the need for creating public policy and control, compensation of negative externalities, state regulation programs.

Why do negative externalities such as contagion (pollution) lead to economic inefficiency? In essence, economic laws have been partially suspended. What if all flows were left to the market? In an unregulated market, companies would determine the level of pollution themselves - by ultimately equating the marginal private benefit of pollution levels with the marginal private cost of reduction. Due to the intensity and breadth of its action, the pandemic has a global character, and such a solution is insufficiently efficient and it is necessary to have an organized system, which will effectively regulate negative externalities, such as contagion. The management of companies, under the pressure of the law, would like to determine the socially acceptable level of pollution (infection) by balancing the costs of the company and the benefits of the community, which is a very complex process in such circumstances. Efficiency requires that the marginal societal benefits of pollution reduction be equal to the marginal societal costs of reduction. Cost-benefit analysis is performed with the inevitable high risk. A complete reduction of pollution would, in essence, cause the impossibility of continuing economic activity, so it is necessary to find a compromise, function and make life impossible for Covid-19, the question is

now? Obviously, we can be better in conditions when propaganda against vaccination is conducted, concerts, parties are organized, cafes work after the scheduled working hours, individuals ignore the planned measures ... but let's not forget that even before a pandemic we are used to doing various damage to ourselves: surfaces (millions of values) to keeping pets without leashes (so they ever so often bite somebody), harassing the neighborhood on various grounds ...

What we can do now and promptly is to reduce the opportunity and keep the missed chances to a minimum. Preventing the spread of a pandemic is the most important task from the individual to the state. It is clear that each individual takes care of the measures and their behavior and that the negative impact is reduced to a minimum and that the state is accompanied by adequate measures, easy to say but difficult to implement in Serbia. This is where the opportunity costs lie, which are not negligible in the conditions.

In such conditions, the legal intervention of the state is the correct mechanism for minimizing the negative effects of both the pandemic and all other harmful consequences for all citizens. Compensation of negative-type externalities, which indisputably produce or may produce negative effects, can be performed by various measures, such as: prohibitions; permits; regulating the behavior of economic entities, as well as residents in general.

## 1. FAIRNESS OR EFFICIENCY - GOVERNMENT DECISIONS OR THE MARKET, THIS IS THE QUESTION NOW

Undoubtedly, both are necessary - both fairness and efficiency - a synthesis of principles that seem irreconcilable. First about the results.

Risks are significantly related to international trends, primarily global trade and economic growth, as well as capital flows, the price of oil and other primary products. The movement of inflation will also depend on the speed of recovery of domestic demand, as well as regulated prices.

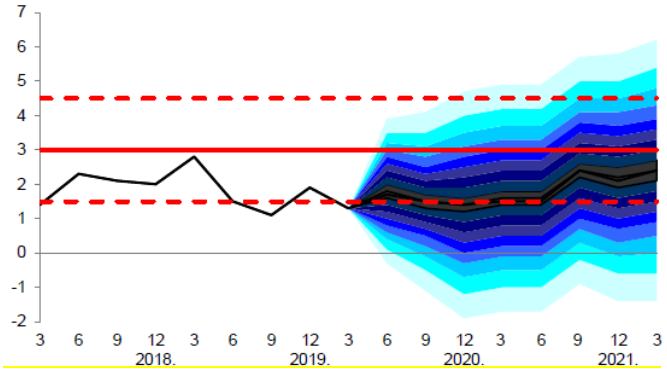
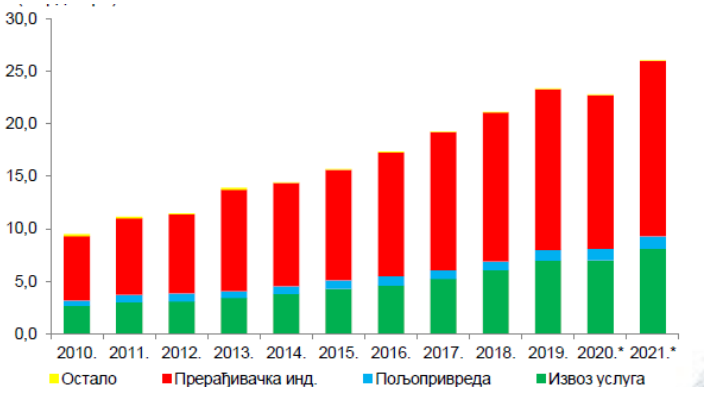



Chart 1. Inflation projection

GDP fell slightly due to the structure of the economy in Serbia, ie a proportionally smaller share of tourism and other tertiary activities in GDP. The average annual growth in the past decade, of 1.83 percent, and the above-average growth in 2018 and 2019 of 4.4 and 4.2 percent, respectively, is the basis for optimistic forecasts this year. It was achieved primarily thanks to the growth of services, in the first year with the help of agriculture, and in the second year of construction engaged in the construction of infrastructure, housing and gas pipeline construction.

With a high decline in exports (March-April 2020) - (33% cumulatively), the recovery of exports of goods began in May (+ 9.0%), primarily with the recovery of exports of the manufacturing industry (+ 7.9%) primarily cars, machinery , as well as the textile industry, (Chart 2).




Graph.2. Projection of exports of goods and services (NBS)

With the development of domestic industry, the renewal of existing industrial units and closed operating groups leads to results, and since 2017, the accelerated growth of imports of equipment and raw materials for investment needs and the growth of domestic demand is obvious (Chart 3).

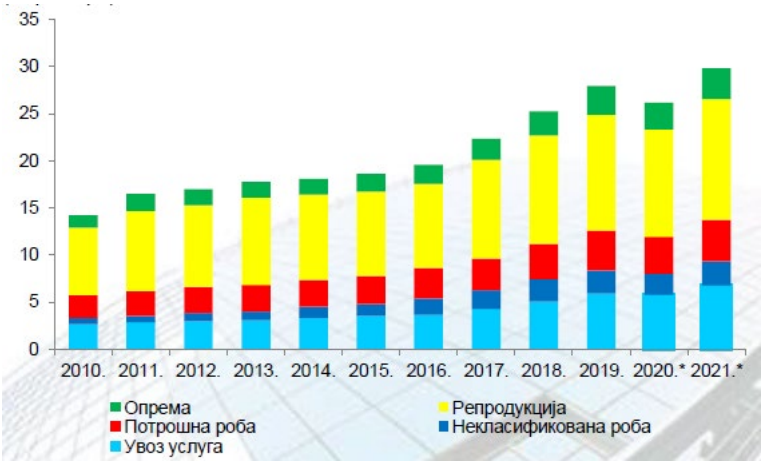



Chart 3. Imports (billions of euros)
(Source: NBS, Macroeconomic Trends, p. 9)

Serbia entered 2021 with the planned GDP growth of 6 percent, which was a precondition for the 2021 budget, which implies further growth of salaries in the public sector of about five percent and pensions by 5.9 percent, as well as capital investments worth 330 billion dinars, and all that with a deficit almost three times smaller than last year. Promises were also made that in the event of a growth of at least five percent, another increase in salaries and pensions is possible, and the belief was expressed that salaries would reach 570 euros by the end of the year, and pensions 270 euros.

## 2. LABOR MARKET IN SERBIA

The unemployment rate is still single-digit.


Chart 4. Labor market indicators

The dilemma between fairness and economy has long been posed. In the capitalist socio-economic system, the dilemma is suppressed in favor of efficiency, on a daily basis in every economic entity: states, companies, medium and small enterprises, households. It is relatively easy to make a decision and opt for efficiency in economically powerful countries such as the United States or Sweden, as much as these countries are strengthened only by human resources. Justice is present only as much as coercion is present, whether from the public or when the state is forced to react due to the great damage caused by negative externalities. It is known how much former US President Obama drew animosity from the opposite camp due to the introduction of basic health insurance for the poorest. The comments were "it is a social democracy of the European type, it is not typical of the USA, to systematically give money to someone who has not paid a single dollar into the health system." The USA has become what it is primarily thanks to the application of efficiency principles. It is not surprising that the previous president of the United States traded "America in the first place, and efficiency in the first place in that America." Obviously, the position of Francois Kenneth and William Petty was gently accepted. "Let things go their course." In the current situation, efficiency is realized through "herd theory and the acquisition of collective immunity." The strongest will survive, the weak fall out of the game, ruthlessly, but that is the biological law (the most efficient). It will result in the extinction of the lives of those who are not strong enough to survive and who

do not have enough money for prevention and eventual treatment. Americans do not tolerate life for the sake of survival, but life with full lungs, to be spent, so there will be room for taxes as well as supplementing the state budget - the simplest is the USA, they can afford such a strategy. They do not need restrictive measures for that, and in the fight against the virus, "the weakest ones jump out of the system", primarily according to economic and biological criteria. Everything that is not forbidden is allowed. However, the number of deaths, infections and negative statistics is obvious and public pressure is growing. Citizens are trying to maximize measures to improve personal safety, but employers are also looking for the maximum in the given conditions. A fierce fight, whoever survives will talk.

The old rule is that "there is no free lunch". For us, the symbol of "free lunch" is everything that the state provides us as a boon in such a difficult time: regular pensions, salaries (although many do not work, for objective reasons), postponement of loan repayment, overhead, everything has been moved in three months , heating when the temperature was above 12 degrees Celsius.

"Free lunch has a price" that we clearly have to pay. How? By printing money? That would mean inflation and a return to the cataclysmic times of the 1990s and shortages, which is absolutely unacceptable. What are the real sources of funding? Do we have them? Through the program of the Government in the first coup of Covid, more than 5 billion euros were provided to citizens and companies. Over 10,000 business entities received loans. It is certainly a mitigating circumstance that we entered the "war" with a relatively favorable financial situation (public debt was below 50% of GDP, investments rose significantly, economic growth was achieved in recent years), which is very important for the first half. year of the fight against Covid -19 mins to the state treasury amounted to over 323 billion dinars and debts rose to almost 57% of GDP (26.579 billion euros). Regardless of the high level of indebtedness, which is a precondition for paying a "free lunch", indebtedness of up to 10% of GDP is necessary and ultimately acceptable. Own reserves in state money are insufficient. It is necessary to mobilize all available resources that individuals and companies have through bonds, which will certainly be acceptable if the interest rate is the same. Short-term and medium-term. It would be useful for us in the Balkans to bury the "axes of war", for financiers and former government officials to be involved, more money would be found. The state should certainly rely on international financial organizations, the World Bank, the IMF, which will certainly support good and sustainable programs in the face of the economy after the victory over the invisible enemy.

In order for the "free lunch" to be cheaper, we should forget the strict bans on the work of catering facilities, respect certain measures, of course, the sore point is tourism, which has almost completely stopped. In such complex conditions, it is necessary to look for models of work and functioning. Without labor there is no tax and without tax there is no economic power of the state.

How much human potential did Serbia lose in the previous century (1st Balkan, 2nd Balkan, Great, Second World War, as well as the war in the surrounding area 1991-1995, NATO aggression 1999)? War with various "poisons", so now this "Poison" called Covid-19, an invisible enemy, more invisible than the "invisible" of 1999. Table 1 is illustrative, at the time of the pandemic the number of deaths was much higher than the number of live births fighting for each life has a special significance.

**Table 1.**- Live births and deaths 2020. (Source: Bureau of Statistics of the Republic of Serbia)

| Live births and deaths in 2020. | Live births | Deaths |
|---|---|---|
| January | 5.152 | 8.706 |
| February | 4.665 | 9.122 |
| March | 4.705 | 8.189 |
| April | 4.644 | 8.625 |
| May | 4.890 | 8.602 |
| June | 5.258 | 8.325 |
| July | 5.896 | 10.023 |
| August | 5.349 | 8.730 |
| September | 5.711 | 8.123 |
| October | 5.483 | 8.353 |
| November | 4.834 | 10.835 |
| December | 5.106 | 17.321 |

The current battle for the infirm, the elderly and the entire population is also very fair and humane. Clearly, that fight certainly has its price. This is the Balkans, but in this case we have the right to be a role model when it comes to justice, which refers to humane treatment and the fight for the life of each individual. The entire state system is engaged in solving key problems in the fight against the Corona virus, measures are being taken to make life more bearable and in extraordinary conditions, which the truth itself has imposed, for justified reasons, of course. We are not the United States or Sweden, and we cannot indulge in acquiring "herd resistance" and wait for the

outcome. We have shrunk too much biologically especially in the last 110 years to let things go their way.

## 3. EXTERNALITIES IN THE PANDEMIC

Economists use the term market failure (Mankju G, 2008, p. 51) for a situation in which the market alone fails to achieve an efficient allocation of resources, and as one of the possible causes of market failure, he cites externalities, ie. the impact of the actions of one person (group, company) on the welfare or harm of another person (community). (Tešanović, Puharić, 2019, p.81). Due to the well-known situation with the pandemic, it is a priority to solve the negative external effects in the shortest period of time, among other things because the benefits of prevention are much greater than the costs of action.

Negative externalities are a phenomenon in which the action of an entity imposes costs on the other party, regardless of their will. They occur when an individual or company, by making a decision, does not have to pay the full price of that decision. If the production of a product has negative consequences, which are not included in the price of the product itself, the cost to society is higher than the cost to the manufacturer. (Tešanović, Puharić, 2019, p.82).

We have no evidence whether man or nature is the producer of the poison, labeled Covid-19, but it is indisputable that, as already stated, negative externalities are harmful consequences of human action on other members of society, where the person who acted did not take these consequences into account. the moment of making the decision. In this case, the situation is specific, we have a pandemic and each of us can have negative consequences for others, which ultimately harms everyone. Problems related to the environment and the valuation of natural heritage are a real example of the issue that is most often referred to as externalities (Todk, 2008, p. 104). In this sense, they represent the damage caused by all infected individuals to other members of society.

Just as pollution caused by factories in populated areas can often be dangerous to the people who live there, so an infected individual is a danger to uninfected members of society. Often, due to profits and their own interests, the factory management does not invest in remediation and mitigation of harmful consequences, but is aware that "it is better to prevent than to treat." companies and the entire society. It is clear that there is an interest in preserving jobs and, at the micro level, preserving the existence of families, but on the other hand, there is an interest in

protecting third parties from pollution (Tešanović, Puharić, 2019, p.83). It is not a simple goal at all, but there is no alternative, in order to live we have to work, work, economic life must be maintained.

## 4. POLLUTION (INFECTION) AS A DIRECT CONSEQUENCE OF NEGATIVE EXTERNALITIES

An unpolluted environment is of great importance for all living beings, in fact, it enables us to live and survive. Without a healthy environment, the existence of living beings is impossible. That is the reason why more attention should be paid to the environment and its preservation.

The earth is made up of water and land, which are also basic types of environment and both are equally important because certain species of living beings survive in the aquatic environment, while other species of living beings inhabit and survive exclusively in the terrestrial environment. These two types of environment are completely different, they have their own specific and unique characteristics (Smiljić, 2016, p.4).

Exhaust systems of factories, residential and business units, constantly release harmful substances into the atmosphere, which greatly affects environmental pollution, and cars, of which there are many globally, emit harmful gases into the environment. Various projects are being launched around the world with the aim of reducing exhaust emissions into the atmosphere (Tešanović, Puharić, 2019, p.84). In the conditions of a pandemic, the problem of pollution is multiplied, the infection spreads at a high speed on the entire territory of the planet Earth and has much more complex and quickly visible negative effects. Why is it more dangerous because they are visible very quickly and at the same time, which also causes psychological effects, in the first place fear. When we discuss air pollution from a factory, the negative effects will be visible for a certain period of time, soberly, calmly. The effects of Covid-19 are very quickly visible and that is why all actions that do not contribute to stopping cause indignation, both from the public and conscientious individuals.

One of the most important applications of external theory is in the field of environmental economics. It is relatively easy to deal with waste and landfills, which certainly have a significant impact on environmental pollution, and it is inevitable that there are many, especially in less developed countries, and the waste recycling system significantly improves the quality of life and the environment.

Why do externalities like pollution (infection) lead to economic inefficiency? In an unregulated market, the management company will determine the amount of

pollution by equating the marginal private benefit of pollution reduction with the marginal private cost of reduction. Such a solution is still insufficiently efficient, so it is necessary to have an organized system that will effectively regulate externalities. When spills are significant, private balancing will produce inefficiently high levels of pollution and too little cleaning activity. The economy therefore seeks to determine a socially significant level of pollution by balancing the costs and benefits of society. Efficiency requires that the marginal societal benefits of pollution reduction be equal to the marginal societal costs of reduction, and this is achieved through efficient cost-benefit analysis. In the conditions of a pandemic, the situation is much more complicated because a complete reduction of pollution (infection) would cause the impossibility of continuing production. Economic expediency requires compromise. Movement "like on the edge of a knife," should function and we should not become infected. We should further contribute to other members of the collective (society) to be spared possible infections.

### 4.1. The need to create public policies and control of negative externalities in the current situation

In order to reduce the harmful effects of externalities, and yet maintain the production that is necessary for the sustainability of society, it is necessary to create adequate and efficient public policies, as well as state control. The first challenge is the fact that many types of environmental health damage are difficult to assess.

Economists have devised several approaches to estimating effects that are not necessarily expressed in market prices. The most reliable techniques examine the effect of environmental damage on various activities and then determine the market price for those activities.

For example, when assessing the effect of sulfur dioxide emissions, environmental economics experts first assess the effect of higher emissions on health, and then determine the monetary value necessary to change the estimates obtained on the basis of actual human behavior. With a pandemic, the situation is more complicated because the negative effects are noticed very quickly, and if we do not act thoughtfully and effectively, the consequences are catastrophic.

In the case of situations involving ecosystems and the survival of different species, some economists use a conditional assessment technique to examine people for how much they would pay to conserve a natural resource in an imaginary situation, which is inefficient in a pandemic, simply – we must act immediately in every situation.

### *4.1.1. Compensation of negative externalities*

The prevailing opinion among economists is that state intervention is the right mechanism for reducing negative externalities, which is a much more complex activity in a pandemic. Partial compensation of negative externalities can be done in several ways: prohibitions, permits, regulation of behavior of economic entities that produce negative externalities, voluntary agreements between output producers and users of externalities, preventive measures, etc. - a special place is occupied by the so-called internalization of externalities.

It can be done in two ways: either by including an additional cost in the price of the product, or by creating new products from by-products (where possible). The internalization of negative externalities provides a modification of marginal private costs, so that they express social costs as a whole. Thus, the price of the product includes not only the private costs of the manufacturer, but also compensation for damage caused to third parties. Since these third parties are outside the relationship arising in the market transaction between the producer and the buyer of the goods, it is expected that the state intervention will ensure the inclusion of the costs of negative externalities in the price of the product. This, among other things, explains the role of the so-called corrective tax. In the conditions of a pandemic, that would mean that employers take rigorous measures so that the infection does not spread and the production process survives in the dry, because in case of organizational failures, the costs will be borne by the employer (not only court ones). The introduction of a corrective tax, directly by increasing the tax rate, as the simplest way to fill the budget, is quite certain, which would certainly have extremely negative consequences in the long run because it inevitably leads to a narrowing of the market.

The role of the corrective tax is to raise marginal private costs to the level of marginal social costs, which results in an increase in the price of goods, ie a market that accepts less goods, which should influence producers to reduce supply as long as their marginal costs ( increased by tax) do not equate with marginal social utility. On the other hand, the existence of tax revenue allows to compensate the damage to third parties who are victims of negative externalities (in this case, the whole society) (Tešanović, Puharić, 2019, pp.85-86).

### *4.1.2. Other state regulation programs*

Policies to correct the negative effects of externalities include national anti-pollution programs that can be implemented as follows:

Direct control - social regulation. In this case, the one who regulates the regulator (legislator, state) simply orders the companies to take all measures to reduce pollution

and gives detailed instructions. In the conditions of a pandemic, it is much more complicated to apply this measure because everyone is a potential polluter. In reality, regulations on infection (pollution) are passed without comparing marginal costs and marginal benefits, and without that there is no way to determine the most appropriate level of pollution control. Standards seem like a good way, but they also have a lot of shortcomings. Effective reduction of contamination requires that the marginal cost of pollution be the same for all sources of pollution. Regulations such as orders and controls generally do not differentiate between companies, regions or sectors, so the regulations are the same for large and small companies, for cities and rural areas, because the degree of infection with high and low levels can be specific to any business entity. In this case, there will be no incentive for the low-cost company to reduce infections (pollution) more than the standard. A pandemic requires efficient and purposeful measures, production remains and the risk is minimized

Market solution - fees for spreading the infection. This solution is mainly applied when there is a lack of direct control, but it would certainly significantly increase the level of responsibility of economic entities, which perform work tasks in the classic way. The pandemic by the nature of action and spread does not allow such a solution because it would lead to self-destruction, which is inadmissible from an economic point of view and the herd theory - the acquisition of collective immunity is out of the question for the reasons already mentioned.

Helicopter money. Payment to Americans $ 1,200 for adults and $ 500 for children. The Fed bought government bonds and thus financed direct payments to the population ...

One hundred euros were thrown from a helicopter in Serbia, 110 euros are planned for each citizen by the end of 2021. If the pandemic had stopped, the positive effects of the increase in aggregate demand could have been discussed, but the pandemic continues and the end is not in sight. Now, a discussion could be opened on how much the state could (can) help the most endangered with that money, which will be more and more, but since it is not worth discussing the cost of spilled milk, we will remain on the conclusion.

*Not everything is black, there is electronic trade*

For many years now, there is the question when internet sales would start" rulinfg in our country. At the very beginning of 2020, that came true. The reason for that is the COVID-19 pandemic, that is, the new reality has imposed new procedures.

Big brands, but also small entrepreneurs, focused on online sales and not a small number of people who opted for this way of shopping in order to protect themselves

and others in this unpleasant situation. Buyers have a large offer for a variety of goods, they can buy at any time of the day, and the same goods arrive immediately at their home address.

Experts say that we should expect a sharp increase in internet sales in the near future. It's hard to find a store that doesn't count double-digit growth.

There is an example of "Tehnomania", when in March 2020 alone, the web shop registered 100,000 new users on the site. Now we analyze only about Tehnomania, and there are so many other companies.

The most wanted online products in Tehnomania in the previous period have been the following:

1. laptops, web cameras, monitors, printers, sceners and other paraphernalia;
2. kitchen appliances (especially electric bread bakeries);
3. beautifying apparatus (hair trimmers, depilatories, hair dryers);
4. Play Station consoles and video games;
5. air purifiers;
6. refrigerators and freezers.

## CONCLUSION

In considering the various aspects of management in protecting against the Covid-19 pandemic, both the environment and each individual is one of the central issues. Regardless of technological development, as the basis of overall development, the pandemic has opened a number of completely new questions that modern civilization is facing and to which there is no adequate answer.

We live in a capitalist socio-economic system in which profit is of the utmost importance, but so is the issue of environmental protection and the quality of life of the population - high on the agenda of value criteria. These two goals do not have to be mutually exclusive, but there should be a compromise that will be efficient and bring benefits, both to economic entities, without which people would not be able to imagine life, and the quality of life of all residents. On the other hand, the population and companies will put pressure on measures, pay more attention to actions that cause harmful consequences to others, and objectively the living environment will be of better quality, which is the main goal of taking measures to prevent negative externalities.

**REFERENCES:**


1. Mankju G, (2008). Principi ekonomije, Ekonomski fakultet, Beograd.
2. Tešanović B, (2019). Zagađenje kao posledica neuspeha tržišta-alternativna rešenja, Puharić Mirjana, Monografija, Tehnološki i ekonomski izazovi u istraživanju životne sredine, Fakultet za poslovne studije i pravo, Univerzitet Union – Nikol Tesla, Beograd.
3. Todk D., (2008). Ekološki menadžment u uslovima globalizacije, Megatrend univerzitet Beograd.
4. Smiljić S, (2016). Zaštita životne sredine, Fakultet za strateški i operativni menadžment, Univerzitet Union – Nikol Tesla, Beograd.
5. Tešnović B, (2021). Mikroekonomija, Beograd, Fakultet za poslovne studije i pravo, Univerzitet Union – Nikol Tesla, Beograd.
6. Narodna banka Srbije, Makroekonomska kretanja u Srbiji, jul 2020.
7. Chine-CEE Institute, Serbia economy briefing: Economic forecasts after the COVID-19 pandemic in Serbia IIPE, June 2020.
8. Republički zavod za statistiku, Statistička ilustracija industrije,Juli 2020.
9. Republički zavod za statistiku, Statistika zarada, 2020.

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# CRIMINAL EXPLOITATION OF COVID-19

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***Abstract:*** *The world is put under enormous pressure by the COVID-19 pandemic and everyone's life is affected. Our times are marked by lockdowns and curfews as an attempt to overpower the virus. In this worldwide agenda, the governmental efforts gather civil society, individuals and international capacities of UN agencies, Interpol and Europol to turn back crime and mitigate its impact on world's health condition. Having in mind sharpness of pandemic global influence on safety and security, the authors try to detect and establish the particular connection between COVID-19 and a certain criminal activities emerging subsequently.*

*The authors use methodological approach dealing with backhand expert reports based on international organizations supports and provided by in-the-field immediate response. This is backed up with systematic analysis of open sources, official evidence, media and institutional brief research.*

*The very results are shown in the article regarding the importance of economic and social inequalities, hit by pandemic, as a key factors of generating material and virtual illegal acts and presented through actual types of emerging criminal activities.*

*Criminals have been adapting their modi operandi to the pandemic rapidly, so far. Therefore, this article covers the criminal exploitation of the COVID-19 virus and its consequential illicit forms.*

***Key words:*** *COVID-19, pandemic, criminal exploitation, criminal opportunities, cybercrime, corruption, fraud.*

## INTRODUCTION

Governments in whole world, almost, doubled their efforts to prevent and stop the global expansion of the COVID-19. Facing this major crisis, one tries to enact different kinds of measures to help public health systems, to maintain safety and public order and not to let down the expectations of global economy network.

Some of these measures have had notable effects regarding the activities within the serious and organized crime framework. However, opportunities have been seized quickly by criminals. They manage to exploit the virus crisis by converting their modi operandi and running new types of illegal acts. Indicators that rapidly switched in criminal swirls have to do with facts (European Union Agency for Law Enforcement Cooperation [Europol], 2020-1):

- People stay at home depending very much on digital remote ways of working and electronic banking
- There has been an increase of teleworking among citizens themselves, just as while corresponding to institutions
- Pharmaceutical products and protective gears turn out to be highly demanded as special goods
- Certain criminal acts become low profiled and rerouted to online and home settings caused by limitations to public life
- Flow and mobility of people decreased all over the world
- Transborder supplying of illicit goods complicates and decreased
- Vulnerability to criminal exploitation are boosted by rise of pandemic fear and existential anxiety
- Spread of disinformation

Taking into consideration data provided by United Nations Office on Drugs and Crimes (UNODC), International Organization of Criminal Police (Interpol), Council of Europe (CoE), World Health Organization (WHO) and European Union Agency for Law Enforcement Cooperation (Europol) and these international organizations' situational reports on ongoing developments, one can make a certain typology of most frequent criminal activities that exploit the COVID-19 pandemic crisis. The typology includes illegal acts emerging in the next areas of crime:

1. Domestic violence and child sexual abuse
2. Intimidation and deliberate contamination spread
3. Fake and counterfeit medical products
4. Organized property crime
5. Fraud and money laundering

6. Embezzlement and corruption
7. Cybercrime
8. Trafficking in persons

No matter numerous discussions and projecting imagined models related to possible pandemic crisis over last decades, the COVID-19 has shown devastating impact capacity of such crisis to the detriment of our everyday lives in the modern world. Lately, due to online conditions of life some kinds of criminal activities, as quoted ones, have started to be more frequent than they were before pandemic expansion. Undoubtedly, since last year, arrival of pandemic played a key role in emerging of some specific crimes as it is cybercrime (Europol, 2020-2). Though the quoted criminal activities remain presented notably, criminal subjects change the narrative. They do adapt their ways how to fit the social matrix to get their degree of success enhanced. In fact, one can compare it with tailoring of any other business in the times of pandemic. However, COVID-19 brings out the major difference based on physical restrictions ordered to stop the pandemic outbreak, with a consequential padding of being-at-home-to-work mode in running remote businesses and long distanced exploring of resources (Europol, 2020-3). Hence, a vast number of jobs and individuals that had not been active online in pre-pandemic period, have become lucrative targets and compromised by cyber possibilities.

## 1. METHODS

While gathering data the authors used branched like approach of methodological proceeding. It, surely, includes various sources of information. First of all, reports derived from relevant international organizations, such as United Nations Office on Drugs and Crime (UNODC), International Organization of Criminal Police (Interpol), Council of Europe (CoE), World Health Organization (WHO) and European Union Agency for Law Enforcement Cooperation (Europol), proved to be sourceful and valid to be explored. These international organizations are provided police intelligence by the-first-response teams as a support given by Member States and the cooperating third-party countries. A particular police unit, just like any other law enforcement agency, does the survey on the exact prioritized area of crime covering, especially, those related mostly to the impact of COVID-19 as next ones: domestic violence, child sexual abuse, intimidation and deliberate contamination spread, fake and counterfeit medical products, organized property crime, fraud and money laundering, embezzlement, corruption, cybercrime and trafficking in persons (International Organization of Criminal Police [Interpol], 2020-1).

This format of methodological strategy is analytically backed up with open sources and media as much as with official evidence and brief research done institutionally by core global security organization, as named previously. Nevertheless, the authors take into consideration the importance of balanced methodological use of in-depth information gotten from in-the field immediate response and interviews conducted with UNODC, CoE, Interpol and Europol experts mattered, at first, financial services, telecommunication providers and internet security.

As methodological tool, so-called semi-structured interview contains open type of questions. It results with broader ranged answers giving an opportunity to present the multileveled phenomenon of certain kind of criminal activity exposed together with pandemic impact on threat assessment (Europol, 2020-3). This could lead the way, as authors do hope, of priorities in combating crime to be established with respect to quoted ones (Interpol, 2020-1). This methodological technique is analytical reflection of taking steps further into phenomenological researching of crime areas boosted by COVID-19 (United Nations Office on Drugs and Crime [UNODC], 2020-2).

By all means, each of mentioned crime areas are complex essentially created of many specific parameters. The very subject of this article implies various profiles of perpetrators, vast number of unique motives and targets, enhanced and completely new modi operandi causing sequenced variables to be gathered and compared before examined (Europol, 2020-3). Subsequently, research results are faced by a lot of challenges to be accurately recorded with methodological limitations to be taken into consideration as a heavy load of every report to be made (UNODC, 2020-2).

One can stress out that the methodological goal of this article is to bring out changed picture of criminal activities matrix presented in the pandemic period by using tools and techniques as mentioned and built on information collected from:

- Data disseminated by field offices of UNODC, Interpol and Europol
- UNODC, CoE, Interpol and Europol Member States' reports done as feedback to the pandemic impact on particular emerging criminal activities
- Media minutes
- Official evidence of national law enforcement agencies
- Institutional summaries of CoE branch units

According to the authors' stand, this methodological framework is a solid ground for scoping out criminal exploitation of COVID-19 regarding modi operandi of mattered illegal activities.

## 2. RESULTS

Let us have an overview of results gotten from methodologically researched sources. Following crime areas are to be highlighted due to their emerging and dynamic development.

Domestic violence and child sexual abuse

Pandemic creates countless asocial surroundings and makes violence more possible and present. Living conditions become difficult hit by financial insecurity, endangered health and psychological stress. According to Interpol typology this crime area can be branched having next subtypes (Interpol, 2020-1):

- Domestic violence

The cases of domestic violence have been raised rapidly after lockdown measures had been enforced. Victims of domestic violence are isolated with slim chances to leave their homes and seek for a help in broader community. This is kind of global trend and competent authorities need to have a multidisciplinary answer and resources prepared to deal with the crisis.

- Child sexual exploitation and abuse

This problem seriously affects exploited victims of domestic child sexual abuse due to the fact of being gathered in lockdown with quite hidden offender. There has been limited access to typical guardians, such as medical staff, school teachers or social services personnel. Therefore, lack in detecting causes reduced reporting of this type of criminal danger. Then again, victims are obstructed to ask for medical treatment, police protection and support of every kind needed. So, these criminal activities remains underreported certainly during the dominated presence of the COVID-19.

- Online child sexual abuse

Socially distanced life conditions make numerous and constant opportunities recognized by cyber sexual predators to the detriment of children exposed at risk of being online sexually abused. Hence, there is increase of detected cases regarding cyber sexual offenders' activities related to far more intensive online distribution of

child exploitation material. Detecting, reporting and removal of cyber predators' attacks are not effective, as usual, but rather slower and enhanced by work-from-home circumstances. Not every moderator of Internet service providers is really able to review the illicit material.

- Darknet child sexual offender activities

Easy availability of cyber space keeps the gate of Darknet wide open. Online sexual offenders are presented in this hidden part of web and very active in discussing and exchanging information how to misuse pandemic crisis to create new modi operandi of online accessing to juvenile victims. Due to Darknet surroundings online sexual predators become even more global, low profiled, effective and danger. Quite oppositely, minor victims are more and more numerous, vulnerable and less protected.

Intimidation and deliberate contamination spread

Based on Interpol member countries information exchanged mutually, there have been established five possible cases of very specific different ways of intimidation and deliberate contamination spread of COVID-19 (Interpol, 2020-1). Let us present actual recorded forms of this illicit behavior.

- Medical employees are exposed to coughing and spitting in the faces just as officers of law enforcement or public service workers being susceptible to pandemic infection
- Contamination of public services caused by coughing and spitting intentionally
- Dispatching of letters infected by COVID-19 to targeted ordinary mail receivers on purpose
- Freely moving from area compromised by virus to non-affected one, no matter particular health condition of individual and given travel restrictions
- Online selling of infectious body fluids samples such as: nasal secretions, sweat, urine, saliva, semen, vaginal secretions, feces, lymph and others

Fake and counterfeit medical products

Undoubtedly, opportunities had been created by pandemic and have tuned up organized criminal groups to detect and misuse breaches and gaps as sensitive parts of healthcare and criminal justice infrastructures (World Health Organization [WHO], 2017). Criminal exploiting of victims uncertainties, lack of information and fear of pandemic creates misunderstandings between citizens and the competent

public agencies and generates a need for deficient medical products. Major risk for public health is raised by medical output falsified at the initial stage of manufacturing. Obviously, counterfeited products cannot help to patients in the proper way. Unfortunately, there has been strong indication of false producing and trafficking of illicit medical products close connection to the pandemic expansion (UNODC, 2020-3). Therefore, we can face the international problem of drug resistance development. Europol member states have reported this kind of criminality having to do with increase of illegal manufacturing and illicit trafficking of altered medical products while pandemic crisis (Europol, 2020-4).

The very beginning of pandemic was followed by intensive need for medical products and personal protective equipment especially. By all means, it had caused misbalance between demand and supply of this specific kind of goods and has obstructed COVID-19 to be prevented. Criminals offered substandard and altered medical equipment to deceive individual and public demands for protection by presenting false impression of having nonexistent supplies of required products. Hence, organized criminal groups have taken chances to misuse public pressure on healthcare infrastructure to make profit out of procurement agencies funds and due to inefficient government control (UNODC, 2020-3).

Quite obvious, exploiting of fear and uncertainty led to criminalization of COVID-19 and affect validity of cures, personal protective equipment and in vitro diagnostic test kits. Illicit gains criminally diverted genuine medicinal substances from official markets to falsified and substandard versions and these criminal activities are supposed to even emerge (WHO, 2020).

Fast cash opportunity offered by pandemic provided criminal subjects to create conditions related to purchasing of hygiene and personal protection products. Recently, there have been established next examples of medical items had been misused by criminal groups, presented on real and online black markets (Interpol, 2020-1):

- Vaccines
- COVID-19 test kits
- Hand sanitizers
- Disposable surgical masks
- Antiviral medication
- Antimalarial cures

Besides the fact of distributing low-quality overpriced goods masked by desperate public demand for an urgent providing of medical supplies, there is a

subsequent increase of medical equipment being unreliable, unsafe, forged and uncertified (Council of Europe [CoE], 2020). As a unique modus operandi it is worth to notice the case of forged sold guarantees demanded for taking part in public tenders. Their prices have been kept low and conditioned with cash payment to be given in advance. If legal entity, presented as guaranteed, happened to be insolvent and unable to fulfill its obligation, public funds are exposed to losses because the lack of guarantees (CoE, 2020). So, forged medical certificates bring criminal earnings realized straight to the detriment of public funds.

According to some sources, supply shortages of sanitary products are presumed to be used by counterfeiters. Thus, online and offline ways of counterfeiting are expected to be increased (Europol, 2020-2). This was indicated by Europol's action in March 2020, when 34.000 altered surgical masks were confiscated (Europol, 2020-2).

Organized property crime

Different kinds of criminal activities have been flourished, lastly. As a matter of adapting to pandemic crisis, the phenomenon of theft has also been intensified through various criminal models of exploiting COVID-19. The good example of it is impersonating medical employees to get access to private dwellings gained. The modus operandi considers phony providing of hygiene equipment, sanitary material, information guidelines or test kits to potential victims in the door-to-door style (Europol, 2020-2). One can abstract next types of offences in this crime area:

- Scams
- Aggravated thefts
- Impersonation of public services staff
- Targeting commercial premises
- Aiming medical facilities
- Organized burglaries

Although, lockdowns and quarantine measures are on globally, this criminal activities are very rapid, highly adaptable and supposed to be emerged even in the pandemic aftermaths (Europol, 2020-2).

Fraud and money laundering

Due to their fears and anxieties victims of fraud are extremely vulnerable to fraudsters and their very fast fraud schemes. So, victims' weaknesses are capitalized by this specific kind of professional delinquents. This relation becomes more detrimental to victims during pandemic situation. So far, previous schemes of supply scams, telephone frauds and decontamination swindles have been upgraded in

criminalization of COVID-19 getting their new and more effective forms (Europol, 2020-2).

New pandemic reality impact on business forced jobs to be remote and social interaction to be kept online. It affected individual and group relationships just as ways to obtain goods and to run both public and private services. Thus, cyber security breaches multiplied to the detriment of reduced physical movement and increased social distancing.

Vast number of malicious websites, phishing emails, hidden malwares, social engineering and contaminated text messages are spread out globally targeting personal and banking data of countless cyber victims. Various hygiene products including personal protective masks and even vaccines are constantly offered online by criminal groups or individual offenders trying to obtain victims' data by SMS or email communication. The very message is sent containing the false information in the form of a file or a link, triggering the loss of attacked data when clicked or infecting digital devices and installations by tracking malware (CoE, 2020).

Quite often, public services provide aid to fake beneficiaries due to false emails sent on behalf of some international charity or health care organization. Also, this kind of messages may have attached malicious software to get sensitive particulars or squeeze virus to encrypt hacked device's information (CoE, 2020). This modus operandi implies fake email presumed to provide recommendations and instructions on treating pandemic issues. Nevertheless, fake companies fraudulently offer very urgent delivery of medicinal items through online communication with goods never to be provided (Europol, 2020-2).

Interpol categorized certain forms of detected scam and fraud schemes being very active while outbreak of COVID-19. Hence, these criminal activities can be systematized like next ones (Interpol, 2020-1):

- Online fraud

Electronic commerce platforms, fake websites, media and social accounts and emails considering fraudulent online selling and distributing of medical items are created by scammers. They simply misuse logos and names of the notable companies dealing with health care products and services. Finally, criminals get their profits paid out from victims' funds through bank transfers.

- Telephone fraud

Frequent telephone fraud and telecom deception have been reported as linked to pandemic issues. This kind of fraud is based on pretending of caller to be a

cousin of phoned aged victims. In this criminal "scenario" fake relative asks victims to cover fictitious hospital treatment cost in cash or by transferring currency. If not transferred, funds are to be paid in hand to false employee of public health service.

- Phishing

Cyber offenders send emails or letters regarding COVID-19 pretending to be medical agencies. They trick victims to stay connected to particular Internet address by exposing passwords and usernames to be logged in. Fake webpages are decoy for getting victims' credentials to be misused by scammers for obtaining sensitive data from personal and banking sources which is just a step before hacking funds.

- Misuse of public funds

Criminals clone websites of public services to get diverted funds from government recovery program for supporting small and medium enterprises or individuals being self-employed. It is followed by forging necessary application documents. Hence, breaches in the application protection or in the process of its dissemination are criminally exploited.

- COVID-19 cover-up businesses

Selling, purchasing, distributing, exporting and importing of sanitary equipment or hygienic personal protective products through fake health care services intermediation are criminally tailored for masking illegal transactions in the terms of integrating criminal funds into legal flows.

- Unregulated financial services

Illicit money can be transferred through unregulated financial services as cryptocurrencies or Hawala in online surroundings. Of course, pandemic reductions are self-explanatory enough to stimulate staying away from formal banking and unregulated offering of financial aid to individuals or investing in some company business activities.

- Money mules

Pandemic makes people unemployed and this is opportunity taken by criminals to engage money couriers or so-called money mules. The role of money mule can be played by both person and money account. Financially struggling subjects are targeted to be criminally recruited, too. Money derived from pandemic fraud, also, can be internationally transferred through networks of mule account.

- Other scams by impersonation

Cyber swindlers may falsely represent investment firms by posing as public service officials, miracle opportunities makers or pandemic charity suppliers.

According to specialized branch of Council of Europe there are three detected modi operandi of fraud having to do with pandemic in the sense of medical equipment, economic relief measures and public procurement contract (CoE, 2020).

Shortage of sanitary equipment created opportunity for trafficking in illicit medical products, so dynamic of their shipments increased consequently. More demands for personal protective items, lack in needed equipment and online alternatives of requesting and supplying caused fertile ground for criminal groups to divert prevention of COVID-19 to the way of getting illegal profit. The most frequent, rapid and very easy to be done has been criminal scheme of online purchasing never to be delivered. This kind of illegal activity has numerous modalities like fraudulent duplications of genuine platforms for online supplying, web presence of Eastern Asian companies and scamming websites, as well (CoE, 2020).

No less, fraud has been detected very much regarding states' economic relief measures while pandemic. These measures are attempt of governments worldwide to fund citizens because of reduced national, regional and global economic flows. Such government actions are done through bank transfers or vouchers to make citizens be paid directly. Also, there are a lot more other ways to do social support as keeping national level of employment with providing financial help to enterprises, social aid raising, stimulating businesses with interest-free loans or giving tax incentives (CoE, 2020). These forms of economic and social support are easy target for criminal subjects to get the score.

Embezzlement and corruption

There are so many faces of crime in this line of criminal activities, but we deem necessary to stress out misrepresentation of resources, pretending to be authorized for economic relief as fake company, manipulating with economic indicators to get value of aid increased and so on. In fact, false enterprise is never created to run bona fide commercial activity but to obtain funds illegally and both local and regional authorities are influenced by corruption and supposed to embezzle payrolls of economic reliefs for the ones who lost their jobs while lockdowns and quarantines were on (CoE, 2020).

Overpricing of hygiene kits and other medical supplies are very often reported regarding embezzlement to the detriment of public funds. Hence, criminal targeting

of production and procurement of health care goods has been raised since pandemic outbreak. In this respect, crowdfunding platforms in cyber surroundings, connected to fundraising, play an important role of criminal mechanism for funds diverting (CoE, 2020).

It is to be highlighted that the lack of needed medical items swift delivery makes gaps and breaches in the official system of procurement. Criminal groups are not obliged to respect procedures. Thus, they abuse vulnerable slowness of public sector impacted heavily by corruptive influence. Let us have an example of it. Sanitary items were to be delivered due to contracts concluded between targeted companies and enterprises selling vegetables and fruits or dealing with tourist accommodation management. So, the latter ones fraudulently presented their activities as close to an output of clothing, hygiene equipment, sanitary items, medical products and devices and personal protective kits (CoE, 2020). It was obvious that fake suppliers were not in capacity to run even basic production of health care goods to get their contract-based duties executed. More than that, city official monitored a stock company as the beneficial owner of these fake companies. Finally, contracts were overpriced as a major issue of suppliers' financial transactions based on corrupted public official position (CoE, 2020). Pandemic crisis has been just an occasion good enough to be criminally exploited.

Cybercrime

Variety of cyberattacks is launched by online criminals while COVID-19 situation develops unpredictably. The recent threats have been about next ways of performing criminal activities online (Interpol, 2020-1):

- There has been noticed a vast number of cyberattacks through ransomwares and malwares aiming to infect perosnal and webbed computer systems.
- Higher ransoms are demanded by cybercriminals on getting access to critical parts of system or databases affecting critical infrastructure and sector of public healthcare.
- Online scams, phishing and malicious domains are very frequent as cyber criminals' "tools" for misusing need for supply of health care goods and digitalization of public services.
- It is obvious that remote workforce is associated with vulnerabilities of online data protecting and it results with constantly presented security threats.

Having in mind Europol member states' reports it is to be expected that legal entities and citizens are to be cyberattacked even more frequently (Europol, 2020-1). Thus, pandemic crisis is turned out to be very suitable for performing social engineering activities in distributing numerous packages of various kinds of malware (Europol, 2020-1).

It is very likely that online criminals look for opportunities to focus vast number of attack vectors pretending to be telework employees to abuse accessing to companies' infrastructures and sensitive sectors. Accordingly, case of a cyberattack to one hospital triggered shutting down of its complete internal digital network, delayed surgical interventions and forced emergency transportation of patients to the nearest hospital.

Activities close to disinformation campaigns have been given rise by COVID-19 situation, too (Europol, 2020-3). Subsequently, spreading of fake information is presumed to be supportive to cybercrime opportunities. As a matter of fact, trying to detect disinformation is nothing but tracing hybrid threats as quite specific phenomena shown up as aggregated acts derived from military and civil actions, formed conventionally or unconventionally and run by government or non-government actors to get political intentions achieved (The European Union External Action Service [EEAS], 2020). Criminal hybrid offensives are consisted of fake information disseminating, critical infrastructures crashing, sensitive and complex services disrupting, public trust diverting and undermining, government institutions and agencies' vulnerabilities exploiting and socio-economic problems criminalizing (EEAS, 2020). Essentially, false information became major support of criminal threats during pandemic crisis and spreading disinformation was even worse than that (Europol, 2020-3).

Having lack of reliable sources of data and exposed to false news, media users got vulnerable due to receiving of disinformation and oversaturated by with quite opposite beliefs, various notions and self-explanatory facts. Additionally, fake information is very possible to be connected to cybercrime as a solid ground for criminal activities of phishing attacks and social engineering frauds.

At the beginning of COVID-19 expansion, the significant number of websites hopped just as new domains both regarding to the pandemic (Europol, 2020-1). However, there is an important difference between opportunistic persons and occasional cybercriminals when hitting the profitable targets. Ultimate criminal goal is always linked to getting profit. Otherwise, some individuals like to have straight financial illegal income by dispatching fake news considering COVID-19 and

through creating and setting up malicious digital advertisements to spread malware (Europol, 2020-3).

Sharing false news regarding extraordinary cures and self-made health care products for "effective" prevention is, yet another, criminal tactic to extract financial gain from pandemic crisis. These activities are highly present in the surroundings of both Darknet and Clearnet emerging the covert illicit selling of false medical and medicinal items (Europol, 2020-3).

By all means, hybrid criminal threats request hybrid law enforcement response, although it is not typically for criminal justice performing due to a lot of legal obstacles banning traditional police investigative approach related to disinformation or fake news (Europol, 2020-3).

Trafficking in persons

Pandemic has been putting intensive pressure on everyday life globally. Our daily routine has been changed undoubtedly. Basic needs for traveling and keeping public life on are reduced and restricted facing obstacles constantly. Economic activities are considerably limited, too. At first glance, law enforcement presence in the field multiplied, especially on the city streets and in the zone of border crossings. It seemed like crime was about to be notably decreased but at the same time it was driven rapidly unnoticed (UNODC, 2020-2). Today's technologies in communications could come in handy to criminal cause and in trafficking in human beings especially. However, pandemic made deep impact on functionality of either non-governmental organizations or public authorities to support victims of trafficking in persons. Nevertheless, societal and economic problems rose while pandemic giving boost to human trafficking as its original mainsprings (UNODC, 2020-2). So, this kind of crime has been backboned by COVID-19 situation.

Even, before, in pre-pandemic times it was quite a challenge to identify victims of human trafficking due to the fact that trafficked persons were usually exploited in the surroundings of informal, unregulated and illegal parts of social life, such as sex industry, forced labor, petty crimes, drug dealing and smuggling, forced housekeeping and clandestine removal of human organs and tissues (UNODC, 2020-2). Unfortunately, it is to be expected that victims are not willing to cooperate because of being exposed to constant intimidation by organized crime groups. It reduces detection of this type of criminal activity and obstructs it additionally while COVID-19 crisis.

Bigger problem than difficult identification of trafficked persons for sure is victims' vulnerability to get infected by COVID-19 after exposure to it living

unprotected, without personal protective equipment and with no access to healthcare system and medical services. It is a real challenge to give shelter to trafficked person since they are almost invisible to the public sector and well hidden in the criminal vortex of black markets and red light districts in the backstreets. With unemployment upsurge and salary drop position of human trafficking victims got worsened rapidly. Trafficking in persons has been detected very often in the branch of agriculture, industry, farming, clothing production, household services, babysitting, street prostitution, network of massage parlors and catering establishment. Exploitation rate is very high due to economic reasons for reducing the costs of production as well as employees' incomes. Additionally, corruption influences lack of authorities' control but raises general expenses and even more increases level of getting trafficked persons exploited (UNODC, 2020-2). Then again, victims of human trafficking got more abused, more vulnerable, more harmed and more exposed to COVID-19. Also, it is very difficult for trafficked persons when being protected to get secured basic needs during pandemic crisis. Funds, food and lodging are not easy to be provided for longer period of time and according to planned schedule due to lockdowns and curfews (UNODC, 2020-2).

Trafficked children are extremely jeopardized staying without possibility to be supported by shelter and supplied by organized meal. Pandemic caused school closures, so pupils are pushed to the streets looking for nourishment and the ways to make a living on their own. Risk of juvenile victims to be infected is heightened just as the possibility to get exploited. In fact, street children are very likely to be trafficked and abused. On the other hand, minors ordered to stay online connected to virtual schooling suffer very much for lack of real social relations and are exposed to be catch in the trap of pedophile chains in cyber space or to be targeted by traffickers (UNODC, 2020-2). Anyway, pandemic threatens children both online and in real life circumstances harming them as well as online sexual predators.

Official response to pandemic crisis makes victims' position more difficult due to the fact that slave relationship between trafficked persons and either traffickers or exploiters puts victims into even greater isolation and off the range of healthcare system. Lockdowns and curfews create opportunities for increase of domestic violence to the detriment of trafficked women forced to do household or being sex trafficked (UNODC, 2020-2). Unfortunately, pandemic crisis enables criminals run their trafficking operations easier hiding victims more successful to the point of making them almost invisible for the law enforcement "radars". Hence, this brings more challenges to detection of criminal activities, victims' identification, social protection mechanism and medical support to trafficked persons, children especially.

Maybe, some of possible solution could be mattered to monitoring of immigration detention centers and prisons to detect victims, separate them from offenders and provide them with social protection and health care.

Reduction of public services is one of the major obstacles to getting victims supported by government. Community volunteering groups are just a temporary solution. In the living conditions during COVID-19 presence when services are not to be accessed, isolation is to be reinforced, social distance is to be kept, movement of victims is to be even more rigidly controlled, it is to be presumed that victims' mental health is expected to be exacerbated (UNODC, 2020-2). Hence, victims will not be mentally strong enough to be ready for opportunities of escaping from their both traffickers and exploiters.

From the formal side, it is very complicated to renew either immigration documents issued as timely limited or short-ordered services for victims of human trafficking while pandemic. Borders are rather closed, repatriations are difficult to take place and social and medical supports are expired in most of the cases. Accordingly, some countries solved these problems out with having transitory and temporary visas extended or just left not allowed stay to be unpunished. Also, medical support for immigrants was prolonged to any person waiting to be decided on having certain status in the particular case (UNODC, 2020-2).

Countermeasures related to COVID-19 have an uneven effect on particular groups of vulnerable and marginalized persons as potentially victimized as trafficked and exploited. For example, workers engaged seasonally and migrants without documents are especially jeopardized by very difficult circumstances of life and work being an easy target to organized criminal groups (UNODC, 2020-2). Therefore, persons trafficked for both housekeeping and sex industry are in serious risk of health hazards regarding pandemic spread while being abused and exploited.

Subsequently, referral proceedings considering victims' detection and identification as well as enabling of access to their rights are slowed or even ceased (UNODC, 2020-2). Creating, maintaining and monitoring protection schemes start to be more demanding. Hence, many of supportive sub-processes suffered of backlogs and delaying, particularly in providing of legal aid, personal counseling, giving assistance to victims or representing the trafficked persons (UNODC, 2020-2). Getting support may be hardened as consultations are given online, no matter substandard living conditions of trafficked ones.

Due to infections among victims certain number of shelters got closed down. Consequently, various aid services have been partially suspended since pandemic

outbreak. Actual legal services, healthcare infrastructure and housing are overpowered by COVID-19 developing dynamic making trafficked persons even more exposed to pandemic. Although, government-funded accommodation is safe it is still far from being general solution while pandemic crisis (UNODC, 2020-2). It is to be underlined that victims of trafficking in persons are between the rock and hard place because of being exposed to both menace of COVID-19 and endless cycle of re-trafficking.

## CONCLUSION

Pandemic changes circumstances, every now and then. Criminals follow it and adapt to it. Movement restrictions, increase of police engagement, frequent street controls, borders closing, lockdowns, social distance, personal isolation look like whole lot of attempts to block the virus spreading, but even though certain types of criminal activities remain and emerge.

Various faces of crime are impacted by COVID-19. Thus, illegal acts become online, more and more, targeting victims connected at home or enhance their low profile in cyber underground surroundings (UNODC, 2020-3). There is no doubt that cyber security is harmed by global trends of cyber frauds through email communication and ransomware (Milošević et al., 2016). Victims turn out to be hidden and less visible to law enforcement agencies and it does get along with more demanding investigation and crimes hard to be detected. Helpline and hotline internet services stay solely as some kind of opportunity for victims to protect themselves. Then again, even this option is not possible in some countries due to poor infrastructure or complete lack of it. According to some stands, every business is posed by cyber security vulnerabilities (Milošević et al., 2016). So, in many cases internet users act all alone and unsafe totally exposed to cyber-attacks. Indeed, recently, the extent of cyber-attacks has increased and there are strong believes that the severity of future attacks will be greater than they are, so far (Milošević et al., 2016).

Although looking like having ordinary importance, some inspections and police sites are also marked to be affected by criminal intentions. Governments ought to make resources diverted and police is preoccupied with implementing COVID-19 counter measures to the detriment of its expected operational capacity (UNODC, 2020-3). This reduces efforts in detecting suspect sites proactively, as much as investigating trafficking in human beings or drug smuggling. Accordingly, criminals

run their illegal operations with less risk of being spotted, investigated and convicted. Literally, they have been exploiting COVID-19 crisis since the very beginning of it. On the contrary, our impression of criminal behavior and illicit activities is overwhelmed by stereotypical messages of a sensationalistic media approach, in which images of violent crimes and spectacular police pursuits are presented dominantly (Uljanov, 2020).

Service of justice systems becomes limited. Therefore, adjudication of cases is very possible to be halted and victims' rights to be compensated are left prolonged. Subsequently, courts decisions are compromised to be missed and collection of evidence even not to be realized and impeded investigating and judicial agendas. Finally, providers of legal assistance face challenges with deadlines caused by poor access to data or minimized capacity of interpreting and translating. It is to be concluded that pandemic strikes criminal justice system very much and makes it dysfunctional in many segments.

International cooperation of law enforcement suffers, too (UNODC, 2020-3). Closed borders and broken communication are logical consequence of movement reducing. Each country, no matter regional partnership and the fact of membership in international associations, is forced to stay focused internally to public health determined issues.

Yet, there is clear and present danger of spreading out infection because of unstandardized equipment for medical and police employees in some part of the world and vast number of people living in poverty. By all means, avoiding regulatory controls creates illegal traders' opportunities in the terms of offering quite dangerous products with a complete disregard for the health and safety of users (Uljanov, 2017).

Pandemic gives strong impetus to global criminal markets related to trafficking of falsified and substandard medical products including unreliable personal protective equipment, as a sure sign of organized criminal exploitation of COVID-19 (Interpol, 2020-2). Hence, a strong connection between transnational organized crime and the trafficking of illicit goods has been established, as well. (Uljanov, 2017). It puts together two sides of the very same coin.

It is pretty obvious that criminal groups have misused new opportunities offered by pandemic life conditions. This affects various types of crime to be enabled, emerged and even enhanced. As a feedback, these offences confirm further criminal exploitation of COVID-19. As a consequence, following criminal activities are supposed to be mostly upgraded: domestic violence and child sexual abuse, intimidation and deliberate contamination spread, fake and counterfeit medical

products, organized property crime, fraud and money laundering, embezzlement and corruption, cybercrime and trafficking in persons. It is more than obvious that criminal purpose uses differences among national legislatives and strings between the global finance, economic and transportation systems (Uljanov, 2017).

As an example of criminal groups' adaptability while exploiting pandemic crisis, one can present drug traffickers dealing with falsified and substandard medical products instead of opiates (UNODC, 2020-1). At short notice illegal manufacturing of personal protective equipment has increased. It would not be possible without capacity of production, access to resource materials and distributing ability as an indication organized criminal activities being quite adapted to pandemic crisis caused opportunities. Hence, organized criminal groups are not active locally but globally implying particular black markets and supplying effect on customers (UNODC, 2019).

In the terms of being criminally put to use, pandemic crisis turns out to be fertile ground for various modi operandi of fraud. Not to remain within the material sense of the term, fraud scheme simply flourish in online surroundings in the shadow of COVID-19. Compromised business emails, phishing, scamming, corporate websites manipulation to the detriment of purchasers, phantom firms establishing and data harvesting are just some of many numerous and aggressive ways of cyber fraud to be committed while pandemic lasts. Social distance and isolation enable buyer to be deprived of the purchase price. There have been a significant number of ransomwere attacks on hospitals and cyber harming of critical infrastructure dealing with pandemic challenges (Cimpanu, 2020-1). Not a common but a high profiled fraud scheme goes on along with pandemic expansion (Interpol, 2020-3). One can detect correlation between trends of illicit acts and dynamic of COVID-19 development (Cimpanu, 2020-2). Literally, everyday life's obstacles are transformed into benefits for criminal activities either in online conditions or in real world.

What is needed to be used to curb emerging opportunities for inevitable criminal exploitation of COVID-19? As we deem, the following issues are a must-have:

- effective regulatory system
- flexible legislative framework
- dynamic technical capacity
- free access to innovative solutions
- intensive and sustained criminal justice
- intelligence led policing
- random and possible law enforcement

- operationally visible police force
- targeted covert police actions
- strongly supportive mass media
- minimally tolerated criminal activities
- reduced punishment avoidance
- optimized effectiveness through research
- constantly educated criminal justice personnel
- cross-skilled trainings to establish preventive, detectable and responsive law enforcement and medical joint task forces
- consistent national coordination mechanism to face present and upcoming challenges

Last but not least, let us have a final conclusion with an old saying: "Victory loves preparation." So, there is no more time not to be ready for criminal effects of pandemic crisis.

**REFERENCES:**

1. Cimpanu, C. (2020-1). Czech hospital hit by cyberattack while in the midst of a COVID-19 outbreak. Coronavirus: Business and technology in a pandemic. Zero Day, March. http://www.ZDNet.com/article/czech-hospital-hit-by-cyberattack-while-in-the-midst-of-a-covid-19-outbreak/
2. Cimpanu, C. (2020-2). Thousands of COVID-19 scams and malware sites being created on a daily basis. Coronavirus: Business and technology in a pandemic. Zero Day, March. https://www.zdnet.com/article/thousands-of-covid-19-scams-and-malware-sites-being-created-on-a-daily-basis/
3. Council of Europe, Committee of Experts on the Evaluation of Anti-Money Laundering Measures and the Financing of Terrorism - MONEYVAL. (2020). Money laundering and terrorism financing trends in MONEYVAL jurisdictions during the COVID-19 crisis.
4. European Union Agency for Law Enforcement Cooperation. (2020-1). Catching the virus: cybercrime, disinformation and the COVID-19 pandemic.
5. European Union Agency for Law Enforcement Cooperation. (2020-2). How Criminals Profit from the COVID-19 Pandemic.
6. European Union Agency for Law Enforcement Cooperation. (2020-3). Internet Organised Crime Threat Assessment – IOCTA.

7. European Union Agency for Law Enforcement Cooperation. (2020-4). Viral Marketing: Counterfeit, substandard goods and intellectual property crime in the Covid-19 pandemic.
8. International Organization of Criminal Police. (2020-1). Interpol COVID-19 Pandemic Protecting Police and Communities Guidelines for Law Enforcement.
9. International Organization of Criminal Police. (2020-2). Preventing crime and protecting police: Interpol's COVID-19 global threat assessment.
10. International Organization of Criminal Police. (2020-3). Unmasked: International COVID-19 fraud exposed.
11. Milošević, M., Uljanov, S., & Urošević, V. (2016). Cyber Security in Small and Medium Sized Companies, in: International Monograph of Scientific-research Interdisciplinary Project, Entrepreneurship - Driver of Dynamic and Flexible Development of Sustainable Economy (pp. 253-266). Faculty of Business Studies and Law, Faculty of Strategic and Operational Management, University "Union-Nikola Tesla" of Belgrade.
12. The European Union External Action Service. (2020). A Europe that Protects: Countering Hybrid Threats
13. Uljanov, S. (2017). New Silk Road Security Challenges", in: Thematical Proceeding from the International Scientific Conference, Initiatives of the 'New Silk Road' - Achievements and Challenges (pp. 292-306). Institute of International Politics and Economics in Belgrade.
14. Uljanov, S. (2020). Overfishing Criminal Threat, in: Crimen: Journal for Criminal Justice, XI/3, 299-313.
15. United Nations Office on Drugs and Crime. (2019). Global Study on Homicide: Understanding homicide.
16. United Nations Office on Drugs and Crime. (2020-1). COVID-19 and the drug supply chain: from production and trafficking to use.
17. United Nations Office on Drugs and Crime, Human Trafficking and Migrant Smuggling Section. (2020-2). Impact of the COVID-19 Pandemic on Trafficking in Persons: Preliminary findings and messaging based on rapid stocktaking.
18. United Nations Office on Drugs and Crime, Research and Trend Analysis Branch. (2020-3). Report on COVID-19-related Trafficking of Medical Products as a Threat to Public Health.
19. World Health Organization. (2017). Global Surveillance and Monitoring System for substandard and falsified medical products: executive summary.
20. World Health Organization. (2020). Solidarity Clinical Trials for COVID-19 treatments.

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