Abstract:

**Purpose:** This research presents a general framework for analysing factors associated with pandemic crisis management. The study intends to sharpen one thinking about improving the fight against Covid-19 and better understand the multiple drivers of planning and implementing a multidimensional anti-pandemic prevention system.

**Approach/Methodology/Design:** This paper's insights have emerged iteratively by considering both theory and empirical data. The abductive reasoning and grounded theory were used during this study.

**Findings:** TTT strategy, maintaining a social distance, and the consistency of decisions regarding the sanitary regime's conditions contribute to fighting the pandemic. However, duplicating solutions adopted in countries that are successful in combating Covid-19 by other countries requires considering social capital determinants. Countries that neglected sustainable development, including the care for social capital development, suffer consequences today. Other external factors caused the efficiency of combating Covid-19.

**Practical Implications:** This study continues developing the pandemic crisis management theory and attempts to enrich it by pointing to success and failure factors. From the practical side, the research allows for several directional proposals, improving combating Covid-19.

**Originality/Value:** This original study aims to determine universal factors of pandemic prevention efficacy. The research highlights the role of social capital in effectively combating the pandemic.

**Keywords:** Crisis management, Covid-19, anti-pandemic strategy, sustainability, uncertainty.

**JEL Code:** M4.

**Paper Type:** A research study.

---

1Institute of Public Affairs, Jagiellonian University, Kraków, Poland, zbyslaw.dobrowolski@uj.edu.pl
1. Introduction

The latest threat to global health, which creates an outbreak of the respiratory disease named Covid-19, should not be a surprise. Meanwhile, it was a shock not only to the medical community but also to politics and business. It was rapidly proven that Covid-19 is caused by a virus that is structurally related to the recognised virus that causes severe acute respiratory syndrome (SARS) and the Middle East respiratory syndrome (MERS). It was only a matter of time before the new coronavirus emerged, given the speed and frequency of global migration of people and goods under the conditions of globalisation and potential terrorist attacks. Meanwhile, in almost all countries, the new coronavirus surprised everybody and effectively revealed the elite and society's unpreparedness to combat this deadly disease. This article is based on analysing Poland's epidemic situation and other European Union member states enriched by literature study.

Recently, many studies have been published on Covid-19 (Fauci et al., 2020; Velavancorres and Meyer, 2020; Chakraborty and Maity, 2020; Dobrowolski, 2020; 2021; Pfefeerbaum and North, 2020; Marini and Gattinoni, 2020; Daniel, 2020; Berlin et al., 2020; Yancy, 2020; Boccia et al., 2020; Kouril and Ferencuhová, 2020; Remuzzi and Remuzzi, 2020; Gudan et al., 2020; Ting et al., 2020; Anderson et al., 2020; Tomar and Gupta, 2020; Grima et al., 2020; Khan et al., 2020; Vo-Thanh et al., 2021; Schneider et al., 2021; Plohl and Musil, 2021). However, little is still known about which system to counter the spread of Covid-19 is more effective in globalisation conditions.

This study is based on grounded theory and attempts to enrich pandemic crisis management theory by pointing to the preventive measures Covid-19 spread and organisational factors of failures in the fight against this disease. The research allows for several directional proposals, improving the health care management system from the practical side.

The paper proceeds as follows: First, the data about Covid-19 spread is presented. After that, the author discusses the research method, followed by analysing preventive measures efficacy and points out organisational failures in the fight against Covid-19. Finally, the author presents conclusions and opportunities for further research.

2. Covid-19 and the Trust in Government

As of April 10, 2021, 135,438,291, Coronavirus cases and 2,931,589 deaths resulting from this disease were recorded worldwide. Among the top twenty countries whose population is most infected with Coronavirus, there are 6 European Union Member States (France - 4,980,501; Italy - 3,736,526; Spain - 3,347,512; Germany - 2,974,110; Poland - 2,552,898; Czechia - 1,577,972 Coronavirus cases) (Worldometer, 2021). In a report entitled "Health at a Glance:
Zbysław Dobrowolski

Europe 2020”, the OECD shows comparative data on how European countries, including the European Union member states, have experienced, and responded to the pandemic. OECD stated that only a few European countries, such as Norway and Finland, implemented organisational solutions that enabled a better limit of the virus's spread. The OECD aptly notes that the lower spread of Covid-19 caused geographic factors (lower population density). However, the rapid implementation test, track, and trace (TTT) strategy also helped fight against Covid-19. Besides, societies from those countries have stronger trust and compliance with government rules and recommendations. One may notice that it helped with the fight against Covid-19. OECD also argues that the pandemic has highlighted the shortages of health staff in many countries and the necessity to create a health care system that can also be worked in times of crisis. It means that the health care system should enable people with other diseases than COVID-19 to access needed care during the pandemic occurrence (OECD, 2021).

OECD research on trust in governments leaves no doubt. In the Scandinavian countries that coped better with the pandemic, the level of trust in the government is higher than in the countries of Western, Central and Southern Europe (OECD, 2021a), which coped with the pandemic much worse when considering the number of cases and deaths caused by Covid-19 (Worldometer, 2021). Among all the European Union countries, the case of Poland seems interesting. Trust in government has reduced to 27.3% in 2020, i.e., almost by half compared to previous years. In 2016-2019, trust in the government in Poland was much higher. In 2017, it was as high as 50.25%. In 2016, it was 38.27%, i.e., more than 2020 (OECD, 2021a).

The importance of trust in socio-economic life is well recognised in theory and business practice. Trust being a feature of social capital, which cause institutional balance and enable networks Putnam (1993; 2000). Researchers emphasise the benefits of trust, such as reciprocity, willingness to participate in transactions, information exchange (Coleman, 1988; Baker, 1990; Boxman et al., 1991; Williamson, 1993; Fukuyama, 1995; Brehm and Rahn, 1997; Nahapiet and Ghoshal, 1998; Gambetta, 2000; Dasgupta, 2000; Lochner et al., 2003; Moran 2005; Zak and Knack, 2011; Sapienza and Toldra, 2013).

Some researchers emphasise the links between trust and civic engagement within a country and economic outcome (Svensson, 2001; Pennington et al., 2003; Stam et al., 2014). One may argue that social capital should positively affect societal well-being, and public administration should help in the formation and distribution of social capital with positive characteristics (Wacquant, 1998).

3. Material and Methods

The research was based on Strauss and Glaser's arguments (Strauss and Corbin, 1997; Glaser, 1999; Bowen, 2009) and the grounded theory. The literature study
was enriched by daily observations of the functioning of the anti-Covid-19 system in Poland. Besides, the data obtained from the European Centre for Disease Prevention and Control, the OECD, the World Health Organization, the U.S. Centers for Disease Control and Prevention and other sources listed in the bibliography were analysed. It enabled the analysis of the Covid-19 situation in various countries.

This research has some limitation. The author observed the fight against Covid-19 among the small group of Poles and analysed daily information from various Poland and European regions. It was assumed that the data obtained from various sources, including the number of infections and deaths, are reliable. However, it cannot be ruled out that the tasks' actual performance may differ from that shown in different reports. The inability to verify all data is a limitation of the research. Due to these limitations, the author needs to show modesty towards the generalizability of research findings and encourage future researchers to test whether research findings hold in other health care systems in different countries.

4. Research Results and Discussion

The OECD pointed to exogenous and endogenous factors of Finland and Norway's success in the fight against Covid-19. Indeed, the lower population density and the terrain made it difficult to maintain social contact, facilitating the fight against the pandemic. However, two more elements depended on the government's health policy and more broadly on the State's social policy.

First, one may point out a test, track, and trace (TTT) strategy. In Poland's case, which is in highest risk level 4 (it means that because of the current situation in Poland, even fully vaccinated travellers may be at high risk for getting and spreading COVID-19 variants and should avoid all travel to Poland) (U.S. Centers for Disease Control and Prevention, 2021), the number of tests performed was not big. As of April 11, 2021, there were 2,574,631 cases of Covid-19 infection in Poland, which means that it is the 11th most infected country globally. In the number of deaths, there are countries with more deaths caused by Covid-19 than in Poland (e.g., in Poland, 58,421 cases, and in Germany, 78,858 deaths).

However, it is not this measure that should worry policymakers, but the number of deaths per million inhabitants. For example, one noted 939 deaths per 1 million people in Germany, and in Poland, significantly more 1,545 deaths. The data on the number of tests per 1 million inhabitants are also poor. Three hundred forty-one thousand four hundred seventy-three such tests have been performed in Poland. In Germany 613,862, while in Germany there are 83,991,585 people and in Poland twice less 37,814,435 people. The absolute highest number of infections in the European Union countries was recorded in France 5,023,785 cases. However, the number of deaths per million people amounted to 1.508, which is less than Poland (Worldometer, 2021).
Testing not only people who feel unwell but also, more broadly, each person declaring the need to be tested to confirm or deny Covid-19 infection is crucial to fight the spread of this pandemic effectively. The author of this article has verified the method of testing infected people in Poland empirically. For example, one of the people the author knows was included in the test, while the other one who lives with this person was not tested. There seems to be some logic. If one person is infected, the other is immediately prohibited from leaving their home under quarantine. This system can work well provided that the infected person honestly discloses whom he or she lives with and that the person living with the test subject refrains from travelling until her/his partner receives the test result. Therefore, such action is based on social responsibility and reliability.

Meanwhile, Transparency International's research shows a different risk of negative social capital occurrence in individual countries. The Scandinavian countries have a low level of corruption threat, unlike Central and Southern Europe (Transparency International, 2021). The conclusion is as follows. One cannot copy the solutions adopted in each country to fight the pandemic without considering the similarities and differences of social capital.

Another issue is track and trace strategy. The author of this article has found that the sources of infection of studied people have been little verified by the State institutions. Meanwhile, in the case of the British Coronavirus variety, the speed of establishing the route of infection is crucial.

The monitoring system for people remaining in quarantine worked very well. They were obliged to upload the application on their mobile device and take pictures of their faces at randomly selected times. Such a system verifies these people's whereabouts and may limit irresponsible social behaviour in the form of breaking the quarantine rules. Simultaneously, these people were checked by the Police, and they had to show up in the window of their house or apartment after answering the phone. One may generalise that this system works based on trust rather than on the analysis of verified data. During the study, the author did not establish whether the Police and other State representatives were sure that they recognised people who have quarantine regime. It seems that a better solution would be to temporarily equip these people with chip wristbands that would send a signal to checkpoints about their place to stay during quarantine. The effectiveness of social isolation in such a pandemic is critical, and the government should project the most efficient preventive measures.

As a positive example of State aid, it is worth mentioning that infected persons are provided with borrowed portable devices for measuring blood saturation. However, these devices should automatically connect to the checkpoints during the measurement of the saturation level by infected people staying at homes. Such a preventive system makes sense when it allows identifying people who require hospitalisation on time, not when infected people decide to be hospitalised.
The scale of air pollution is a factor that facilitates or hinders the fight against Coronavirus. In Finland and Norway, praised by the OECD, air pollution is significantly lower than in Poland (World Health Organization, 2021a; European Environment Agency, 2020). Poland continues to be the most polluted country in European Union. 36 of the 50 most polluted European cities is in Poland.

Nearly one in nine premature deaths caused by pollution in the EU was found in Poland (the World Bank, 2019). To sum up, the effectiveness of the fight against a pandemic attacking patients' respiratory system cannot be analysed in isolation from the quality of environmental protection, including air protection. Countries that are not coping with environmental protection may lose the long-term fight against Covid-19.

The OECD states that the pandemic showed the shortages of health staff in many countries and the necessity to create a health care system that can also be worked in times of crisis. In Poland's case, staff shortages in the health service are related, among others, to the emigration of many people abroad in search of better remuneration. The estimated hourly labour cost in Poland is one of the lowest in the entire European Union. Worse in this respect than in Poland is only in Croatia, Bulgaria, Romania, Hungary, Latvia, and Lithuania (Eurostat, 2021).

Moreover, Poland's expenditure on health care was still unsatisfactory compared to the needs caused by delays resulting from Poland's long-term being in the so-called bloc of socialist countries after the Yalta agreement and the Second World War. Health spending in Poland is still one of the lowest in the European Union member states. "In 2015, health expenditure was EUR 1,259 per capita or 6.3% of GDP compared to the EU average of EUR 2,781 or 9.9%. Public funds account for 72% of spending, lower than the EU average (79%)". Out-of-pocket spending is comparatively high (22%), raising accessibility concerns. Despite reductions, Poland's mortality rate is still higher than in most European countries. It may suggest that the health care system could be more effective in treating people with life-threatening conditions (OECD / European Observatory on Health Systems and Policies, 2017).

However, these delays in modernising the healthcare system do not fully justify the current state of the fight against the pandemic. After the disclosure of the new pandemic in China, it could be assumed that the spread of Covid-19 was only a matter of time in globalisation conditions. From November 2019 to October 2020, when the number of Covid-19 cases rapidly increased, Poland had almost 12 months to implement the pandemic crisis management, purchase the necessary equipment, and implement the efficient TTT system.

Meanwhile, instead of a firm and unequivocal attitude aiming to maintain social distance, the Prime Minister announced in the summer of 2020 that Poland successfully fights against Covid-19, and next, the schools were opened. During
the tourist season, tens of thousands of people rested at the seaside, mountains, and lakes, which could have contributed to lowering the social awareness of how dangerous the Covid-19 is. The lack of an unequivocally consistent decision to maintain restrictions and social distance also took place in the winter, when it is unknown why permission to open ski facilities was opened. As a result, the social discipline in the field of observing epidemic obligations was loosened once again.

Meanwhile, any organisational operations, especially related to pandemic restrictions, require firmness, fullness, and articulation of opinion. In opposition, vacillation, indifference, or weakly held opinions are considered a symptom of decision-makers weaknesses (Hirschman, 1989; Dobrowolski, 2021).

5. Conclusion

Based on the grounded theory's assumptions, this research allowed the identification of success and failure factors in the fight against Covid-19. Success in reducing the size of a pandemic depends on external and internal factors. The quality of environmental protection, including protection against air pollution, facilitate or hinder combating Covid-19.

An equally important factor is the level of organization of the health care system and its financing. Long-term delays in co-financing this system and the low level of remuneration of medical staff result in a shortage of necessary resources. Additionally, the level of negative social capital should be considered. Its influence on combating Covid-19 is indisputable and manifests itself in the failure to respect the sanitary regime.

Fighting this pandemic and others in the future requires a multi-faceted strategy. It is not only about the TTT strategy but also about increasing trust in the government. Ambiguous decisions and lack of consistency in following a predetermined direction are not conducive to creating such trust.

There may be a temptation to duplicate the solutions that have succeeded in reducing the pandemic. However, it should be considered that each society has a different level of social capital, and ad hoc government solutions will not cause an immediate increase in this capital. Countries that neglected sustainable development, including the care for social capital development, suffer consequences today. Future research should focus on the role of social capital in fighting the pandemic.

References:

Anderson, R.M., Heesterbeek, H., Klinkenberg, D., Hollingsworth, T.D. 2020. How will country-based mitigation measures influence the course of the COVID-19 epidemic? The Lancet, 395(10228), 931-934.
Baker, W. 1990. Market Networks and Corporate Behaviour. American Journal of Sociology, 96(3), 589-625.
Berlin, D.A., Gulick, R.M., Fernando, J., Martinez, F.J. 2020. Severe Covid-19. The New England Journal of Medicine, 383, 2451-2460.
Boccia, S., Ricciardi, W., Ioannidis, J.P.A. 2020. What Other Countries Can Learn From Italy During the COVID-19 Pandemic. JAMA, 180(7), 927-298.
Boxman, E., De Grant, P., Flap, H.D. 1991. The Impact of Social and Human Capital on the Income attainment of Dutch managers. Social Networks, 13(1), 51-73.
B Bowen, G.A. 2009. Supporting a grounded theory with an audit trail: an illustration. International Journal of Social Research Methodology, 12(4), 305-316.
Brehm, J., Rahn, W. 1997. Individual-Level Evidence for the Causes and Consequences of Social Capital. American Journal of Political Science, 41(3), 999-1023.
Centers for Disease Control and Prevention. United States COVID-19 Cases and Deaths by State. Retrieved from: https://www.cdc.gov/
Chakraborty, I., Maity, P. 2020. COVID-19 outbreak: Migration, effects on society, global environment and prevention. Science of the Total Environment, 728, 138882.
Coleman, J.S. 1988. Social Capital in the Creation of Human Capital. American Journal of Sociology, 94, 95-120.
Daniel, S.J. 2020. Education and the COVID-19 pandemic. Prospects, 49, 91-96.
Dasgupta, P. 2000. Trust as a Commodity. In Gambetta, D. (ed.) Trust: Making and Breaking Cooperative Relations, Department of Sociology, University of Oxford, Oxford, chapter 4, 49-72.
Dobrowolski, Z. 2020. After COVID-19: reorientation of crisis management in crisis. Entrepreneurship and Sustainability Issues, 8(2), 799-810.
Dobrowolski, Z. 2021. The Strategy of Vaccination and Global Pandemic: How Framing May Thrive on Strategy During and After Covid-19. European Research Studies Journal, 24(1), 532-541.
European Centre for Disease Prevention and Control. COVID-19 situation update worldwide, as of week 13, updated 8 April 2021. Retrieved from: https://www.ecdc.europa.eu/en/geographical-distribution-2019-ncov-cases
European Environment Agency. Poland - Air pollution country fact sheet 2020. Published 23 Nov 2020. Retrieved from: https://www.eea.europa.eu/themes/air/country-fact-sheets/2020-country-fact-sheets/poland
Eurostat. File: Estimated hourly labour costs, 2020 (EUR) F2 Final.png. 11 April 2021. Retrieved from: https://ec.europa.eu/eurostat/statistics-explained/index.php?title=File:Estimated_hourly_labour_costs_2020_(EUR)_F2_Final.png
Fauci, A.S., Lane, C., Redfield, R.R. 2020. Covid-19: Navigating the Uncharted. The New England Journal of Medicine, 382, 1268-1269.
Fukuyama, F. 1995. Trust: The Social Virtues and The Creation of Prosperity. New York: Free Press.
Gambetta, D. 2000. Can We Trust? In Gambetta, D. (ed.) Trust: Making and Breaking Cooperative Relations, electronic edition. Department of Sociology, University of Oxford, Oxford, chapter 13, 213-237.
Glaser, B.G. 1999. The Future of Grounded Theory. Qualitative Health Research, 9(6), 836-845.
Grima, S., Dalli Gonzi, R., Thalassinos, I.E. 2020. The Impact of COVID-19 on Malta and its Economy and Sustainable Strategies. Available at SSRN:
Guan, Y., Deng, H., Zhou, X. 2020. Understanding the impact of the COVID-19 pandemic on career development: Insights from cultural psychology. Journal of Vocational Behavior, 119, 103438.

Hirschman, A.O. 1989. Having Opinions—One of the Elements of Well-Being? The American Economic Review, 79(2), 75-79.

Khan, S., Rabbani, R.M., Thalassinos, I.E., Atif, M. 2020. Corona Virus Pandemic Paving Ways to Next Generation of Learning and Teaching: Futuristic Cloud Based Educational Model. Available at SSRN: https://ssrn.com/abstract=3669832.

Kouřil, P., Ferenčuhová, S. 2020. “Smart” quarantine and “blanket” quarantine: the Czech response to the COVID-19 pandemic. Eurasian Geography and Economics, 61(4-5), 587-597.

Lochner, K.A., Kawachi, I., Brennan, R.T., Buka, S.L. 2003. Social capital and neighborhood mortality rates in Chicago. Social Science & Medicine, 56(8), 1797-1805.

Marini, J.J., Gattinoni, L. 2020. Management of COVID-19 Respiratory Distress. JAMA, 323(22), 2329-2330.

Mayer, R.C., James, H., Davis, J.H., Schoorman, F.D. 1995. An Integrative Model of Organizational Trust. The Academy of Management Review, 20(3), 709-734.

Moran, P. 2005. Structural vs. relational embeddedness: social capital and managerial performance. Strategic Management Journal, 26(12), 1129-1151.

Nahapiet, J., Ghoshal, S. 1998. Social capital, intellectual capital and the organizational advantage. Academy of Management Review, 23(2), 242-266.

OECD. Europe needs to prepare better for coming out of new strict containment measures. 10 April 2021. Retrieved from: https://www.oecd.org/health/europe-needs-to-prepare-better-for-coming-out-of-new-strict-containment-measures.htm

OECD. Trust in government. 10 April 2021a. Retrieved from: https://data.oecd.org/gga/trust-in-government.htm

OECD/European Observatory on Health Systems and Policies. 2017. Poland: Country Health Profile 2017, State of Health in the EU. OECD Publishing, Paris/European Observatory on Health Systems and Policies, Brussels. http://dx.doi.org/10.1787/9789264283510-en

Pennington, R., Wilcox, H.D., Grover, V. 2003. The Role of System Trust in Business-to-Consumer Transactions. Journal of Management Information Systems, 20(3), 197-226.

Pfefferbaum, B., North, C.S. 2020. Mental Health and the Covid-19 Pandemic. The New England Journal of Medicine, 383, 510-512.

Plohl, N., Musil, B. 2021. Modelling compliance with COVID-19 prevention guidelines: the critical role of trust in science. Psychology, Health & Medicine, 26(1), 1-12.

Putnam, R.D. 1993. Making Democracy Work. Princeton: Princeton University Press.

Putnam, R.D. 2000. Bowling Alone. The Collapse and Revival of American Community. New York: Simon & Schuster Paperbacks.

Remuzzi, A., Remuzzi, G. 2020. COVID-19 and Italy: what next? The Lancet, 395(10231), 1225-1228.

Sapienza, P., Toldra-Simats, A., Zingales, L. 2013. Understanding Trust. The Economic Journal, 123(573), 1313-1332.

Schneider, C.R., Dryhurst, S., Kerr, J., Freeman, A.L.J., Recchia, G., Spiegelhalter, D., van
der Linden, S. 2021. COVID-19 risk perception: a longitudinal analysis of its predictors and associations with health protective behaviours in the United Kingdom. Journal of Risk Research, 1-20.

Stam, W., Arzlanian, S., Elfring, T. 2014. Social capital of entrepreneurs and small firm performance: A meta-analysis of contextual and methodological moderators. Journal of Business Venturing, 29(1), 152-173.

Strauss, A., Corbin, L. (Eds.) 1997. Grounded Theory in Practice. Sage Publications, Inc., Thousand Oaks.

Svensson, G. 2001. Extending trust and mutual trust in business relationships towards a synchronised trust chain in marketing channels. Management Decision, 39(6), 431-440.

The World Bank Group. In the Spotlight: Air Quality in Poland, what are the issues and what can be done? Fall 2019. Retrieved from: http://documents1.worldbank.org/curated/en/426051575639438457/pdf/Air-Quality-in-Poland-What-are-the-Issues-and-What-can-be-Done.pdf

Ting, D.S.W., Carin, L., Dzau, V., Wong, T.Y. 2020. Digital technology and COVID-19. Nature Medicine, 26, 459-461.

Tomar, A., Gupta, N. 2020. Prediction for the spread of COVID-19 in India and effectiveness of preventive measures. Science of the Total Environment, 728, 138762.

Transparency International. 2021. Corruption Perception Index. Retrieved from: https://www.transparency.org/en/cpi/2020/index/nzl

Velavancorres, T.P., Meyer, C.M. 2020. The COVID-19 epidemic. Tropical Medicine & International Health, 25(3), 278-280.

Vo-Thanh, T., Vu, T.V., Nguyen, N.P., Van Nguyen, D., Zaman, M., Chi, H. 2021. How does hotel employees’ satisfaction with the organization’s COVID-19 responses affect job insecurity and job performance? Journal of Sustainable Tourism, 29(6), 907-925.

Wacquant, L.J.D. 1998. Negative social capital: State breakdown and social destitution in America's urban core. Netherlands Journal of Housing and the Built Environment, 13(25), 25-40.

Williamson, O.E. 1993. Calculatedness, Trust, and Economic Organization. Journal of Law and Economics, 36(1/2), 453-486.

World Health Organization. Coronavirus disease (COVID-19) Weekly Epidemiological Update and Weekly Operational Update. 11 April 2021. Retrieved from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/situation-reports

World Health Organization. WHO releases country estimates on air pollution exposure and health impact. 11 April 2021a. Retrieved from: https://www.who.int/news/item/27-09-2016-who-releases-country-estimates-on-air-pollution-exposure-and-health-impact

Worldometer. Covid-19 Coronavirus Pandemic. 10 April 2021. Retrieved from: https://www.worldometers.info/coronavirus/#countries

Yancy, C.W. 2020. COVID-19 and African Americans. JAMA, 323(19),1891-1892.

Zak, P.J., Knack, K. 2011. Trust and Growth. The Economic Journal, 111(470), 295-321.