



STRUCTURE OF HEALTH SYSTEMS ECONOMY LINKAGE WITH COVID 19: ALBANIAN CASE AND REGIONS

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Abstract

The impact of Covid-19 has been felt adversely in nearly all sectors since early 2020 to date. However, health care has felt the impact more over this period (1). The increased number of crude deaths, infant mortality, maternal mortality, job losses are some of the effects caused by Covid-19 in the health care system (2). This paper, therefore, focuses on evaluating the impact of Covid 19 in restructuring the economy of the health care system in Western Balkan Societies and probably its environs. The research focused on using an economic regression model to establish 100 medical officers, including nurses and practitioners in the Western Balkan. The questionnaires were distributed through email. Regression analysis was used to analyze the sample data on monthly income, infant mortality rate, maternal mortality rate, and change in income over the last year, and crude deaths in the health facilities. The findings indicated an increase include deaths, infant mortality, maternal mortality, and unstable income for most of the workers in the health care sector. The researcher concluded that there was a positive correlation between income and economic growth from the regression model. Also, increased mortality rates thwart economic developments. There was a realization that restructuring the health care systems from Covid-19 would boost other sectors to regain normalcy.

Keywords: Digital Hospital Systems, Economy, Covid 19, Western Balkan, Corelation Analysis



INTRODUCTION

The world is currently healing at a slower pace from the economic crisis which resulted from the Covid-19 pandemic, which affected nearly all departments in the economic sector. According to the World Health Organization (W.H.O.) report, more than 95% of the countries in the world have suffered the effect of Covid-19 and are yet to regain their normal operations (1). Even though the world had suffered an economic crisis in 2008, the challenges posed by the Covid-19 have been sported have adverse effects, especially in the economic sector (3). Comparatively, the 2008 economic crisis affected the business sector more than other sectors instead of the 2020/2021 Covid-19 pandemic, which has greatly affected the health care sector. World economists use various indicators to detect changes in economic growth. For instance, personal income, a measure of Gross Domestic Product, is commonly used along with other parameters such as crude deaths, infant mortality rate, maternal mortality rate, proportional mortality, per capita, and employment rate (4).

As a result of these effects, health care systems required rapid restructuring to meet the challenges posed by Covid-19. However, the impact of Covid-19 has been overwhelming in the recent past (5). Therefore, this paper explores Covid 19 in restructuring the Economic of Health Care System Focused in Western Balkan Societies. In exploring this economic aspect, the researcher used multiple economic regression and correlational analysis to establish the relationship between the restructuring aspect in the health care system and infant mortality, maternal mortality, crude deaths, and proportional mortality.

Significance of the study

Even though there are several reasons for this research, the research focused primarily on restructuring health care systems, especially during Covid-19 in Western Balkan (6). This research would serve a greater purpose of protecting the medical professional and medical practitioners from the infectious virus and other contagious diseases since they are put to the spot as they try to reduce the death rates resulting from the Covid-19 pandemic (7). As the report by W.H.O. indicates, the number of medical personnel dying of the coronavirus is on the rise, and an immediate invention is necessary (8). Besides, this would provide ground for making informed decisions, especially those regarding facial aspects and expansion of the health care system to restore normalcy in the health care sector. Additionally, this research would facilitate the research previously conducted, which focused on improving the working conditions of workers in the health care sector (9).

Research Questions

- i. What is the impact of Covid-19 in restructuring the health care system in Western Balkan societies?
- ii. Economic growth is expected to increase in the Western Balkan states
- iii. There is a significant relationship between economic growth and infant mortality, maternal mortality, doctors' income, and crude death in Western Balkan societies.

RESEARCH METHODS

The researcher used both qualitative and quantitative methods to effect Covid 19 in restructuring the Economic of Health Care System Focused in Western Balkan Societies. The qualitative method was to explain the phenomenological aspects of Covid-19 among the society members in Western Balkan. This is supported by the Korean journal of medical research, which explains the importance of using qualitative methods as research designs in health care (10). In explaining the experience people go through either daily or a given period, it is important to use qualitative methods that the researcher employed in this research (10)—for example, restructuring the health care, doctor, nurses, medical practitioners, and Western Balkan society experience many health challenges that could not be quantified but explained phenomenologically through qualitative research. Some of the challenges explained by restructuring the health care system include working conditions, experiences due to huge deaths recorded daily, and how possible they could overcome such challenges and their economic impact.

The consequences of qualitative challenges result in quantifiable economic problems that needed to be addressed as an agency (11). The quantifiable issues addressed in restructuring the health care system in Western Balkan included the medical front-liners monthly income, the infant mortality rate every week, maternal weekly mortality rate, and crude deaths in various health facilities in western Balkan (12).

Data Collection and Analysis Methods

The researcher used a partially close-ended questionnaire to collect the relevant information from the foresaid individuals. In this method, the researcher had control of the research since the questionnaires were sent to the targeted individuals. Some of the questionnaires were distributed through emails, and respondents emailed back after completing the survey. The researcher opted for this method due to its convenience and time management, and ease of controlling the information (13). Each respondent was given a unique code for ease

of analysis. The collected data was analyzed by an excel-15 version with a focus on correlation and multiple regression. The data collected are included in the attached excel file.

Internal and external validity

To ensure internal validity, the researcher consulted with medical experts and economic experts to develop the questions which would otherwise show the meaningful relationship between the parameters (14). Even though the sample was 100 individuals who work in various health care facilities, the information collected was adequate to use in the remaining health facilities in Western Balkan since the pandemic affected the region with nearly the same magnitude (12).

Conflicts of Interest

Covid-19 brought Marginalized population and the same time, psychosocial impact. When the pandemic emerged, different governments reacted differently in curbing its spread (15). From the various cases analyzed in this study, other subcommittees started by the governments to discuss the measures to implement in preventing the spread of Coronavirus crises tend to prose different agents who can be trusted in offering essential services to the citizens. Such announcements tend to bring a conflict of interest between the government agencies and the pharmaceutical companies, especially when it concerns the delivery of medication services (16). There is also a conflict of interest between Bilateral donors and local-based donors as, in most cases, conflicted on who should be mandated with overseeing the utilization of funds and other resources set aside to support the vulnerable communities during the pandemic.

Ethical clearance

As a requirement, it is ethical to conduct research that does not conflict with any of the ethical issues (17). The major ethical issues in research include confidentiality, respondents' consent, the respondents should be disengaged from harm (17). The researcher confirmed all the ethical issues in the research. For instance, the research sought the respondent's consent and asked questions that did violate any of the respondent's rights or freedom. Also, the research was conducted in a manner that did harm to the respondent with an assurance of confidentiality in the information provided.

FINDINGS AND DISCUSSION OF RESULTS

The research did not consider the designation of the respondents but concentrated on the fact that they were front-liners in health care. Restructuring of the health care systems was used as the dependent variable measure in terms of economic growth indicated by the percentage G.D.P. The independent variables were infant mortality rate, maternal mortality rate, crude deaths, and proportional mortality rate. At the onset of Covid-19, there no country in the Western Balkan with an economic index lower than 2%, according to available reports (18).

Table 1: Descriptive statistics

	Age	Gross Income	Income change	Crude Deaths	Infant Mortality	Maternal Mortality
Average	35.7	6585.61	728.49	17.01	7.15	10.77
Maximum	52	10000	1048	25	10	15
Minimum	20	5000	451	10	4	6
Standard Dev	6.726	831.326	167.098	4.6133	1.9352	2.8634
Mode	35	6347.5	705	17	7	11

The information collected from the 100 respondents was summarized in table 1 above using descriptive statistics where the mean, maximum, mode, the standard deviation of the sample size were calculated on gross income, crude deaths, infant and maternal mortality.

According to economists, the parameters used as economic growth indicators are calculated annually, and a report is tabled for decision making (19). These indicators are normally linked with another such life expectancy, fertility rate recorded through births per day, per week, and finally annually. Considering these, the data present the monthly picture of the economic status in western Balkan, which can be translated into annual figures. For example, with the persistence of Covid-19, the infant mortality rate would be 85.8 per year for every 100 individuals. At the same time, the reduction in medics and medical practitioners would be \$ 8741.88 for every 100 personnel working in a health facility in western Balkan. This will have a direct impact on the economic growth since (20).

Table 2: Multiple Regression for the Economic Indicators in health care

Regression Statistics	
Multiple R	0.2136833
R Square	0.0456605
Adjusted R Square	-0.005102
Standard Error	1.1634164
Observations	100

ANOVA					
	<i>Df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Sig. F</i>
Regression	5	6.0874632	1.217493	0.899489	0.4849068
Residual	94	127.23254	1.353538		
Total	99	133.32			

	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>	<i>Lower 95.0%</i>	<i>Upper 95.0%</i>
Intercept	4.1136216	1.3715475	2.999256	0.003464	1.3903818	6.8368614	1.390382	6.837
Gross Income	0.0001525	0.0001433	1.064239	0.289947	-0.000132	0.0004371	-0.00013	4E-04
Income change	5.172E-05	0.0006987	0.074012	0.941158	-0.001336	0.0014391	-0.00134	0.001
Crude Deaths	-0.034664	0.0248953	-	0.167087	-0.084094	0.014766	-0.08409	0.015
Infant Mortality	-0.058704	0.0585283	-	0.318437	-0.174913	0.0575056	-0.17491	0.058
Maternal Mortality	-0.011297	0.0435856	-	0.79606	-0.097837	0.0752436	-0.09784	0.075

Table 2 is a multiple regression output that the researcher used to establish the relationship between the parameters of economic growth. According to existing literature, economic restructuring a sector based on economic indicators require an in-depth understanding of the relationship between the indicators (21). Therefore, the researcher used multiple regression to build the model through which economic growth as an indicator of restructuring the health care system may predict, especially during the Covid-19 pandemic. Focusing on the output, the economic regression model would be established as:

Economic growth (restructuring) = 0.0001525Gross income + 5.172E-05 Income Change-0.034664 Crude Deaths -0.058704 Infant Mortality -0.011297 Maternal Mortality +4.1136216.

From this model, one can deduce that for a better health care system, it was expected that infant mortality rate, maternal mortality rate, and crude deaths should go down. Therefore,

this model conforms to other models used in explaining economic changes and how to mitigate them. For example, according to Linus Ekel, regression models are the best predictors of economic trends, more so during a crisis (22). The economic status in this model was predicted to be 5.9% when the crude deaths, infant, and maternal mortality were assumed to be zero in the ideal economic model (23). However, an increase in gross income has a positive impact on restructuring the health care system since the model depicts a positive correlation between the two aspects. When the gross income of workers increases, it implies that there are better working conditions, and the workers would perform their duties with due diligence (24).

Additionally, better working conditions improve workers' purchasing power since most of their income is not used elsewhere (25). Restructuring of the health is vital based on this model since most of the parameters discussed are practical in a health care system and were the significant challenges imposed by the current pandemic in Western Balkan societies. Other tests, including correlation, showed there is a significant relationship between economic growth and increased income of the workers' results in a reduced infant mortality rate. A positive correlation coefficient depicts a positive connection between the variable (26). The results showed a strong positive correlation between income and economic growth and a strong negative correlation between mortality and economic growth.

CONCLUSION

The effect of Covid-19 has an impact differently in various sectors; however, the health care systems were the most hit-hard by the Covid-19 pandemic. The impact on the health care systems, which include increase infant mortality, the maternal mortality rate in Western Balkan, culminated into an economic drop in nearly all societies in the Western Balkan. Restructuring the health care system in Western Balkan is one way of restoring normal economic operations within and beyond the region. Models were used to facilitate the decision-making process in health care to curb the pandemic's short and long-term challenges. A linear regression model indicated that economic growth, which was used to measure restructuring, showed a positive correlation with income and positive change income. However, the same model showed a negative correlation with infant mortality, crude deaths, and maternal mortality. It was essential to reduce the death rates and increase the gross income of workers while improving their working conditions in a bid to restructure the health care system. The researcher focused major on the economic parameter in the health care system with minimal attention to employments rate since this did not include the research framework as factors that have resulted from Covid-19, but factors that Western Balkan has been battling over the years. The scope for further

studies will study on the mechanisms and different technological software programs in order to help the easiness for hospital management and data gathering online.

REFERENCES

- Organization WH. [Online]. Washington DC; 2019 [cited 2021 May 14. Available from: https://www.who.int/emergencies/diseases/novel-coronavirus-2019/interactive-timeline?gclid=CjwKCAjwv_iEBhASEiwARoemvEwuivv8gz4vf_ZPeLuJy4uPJCi-GV7Hz8v-Ypvb9rqDV-ALnktGRoCCrgQAvD_BwE#event-115.
- Alan D. Kaye, Chikezie N. Okeagu, Alex D. Pham, Rayce A. Silva, Joshua J. Hurley, & Brett L. Arron. Economic impact of COVID-19 pandemic on healthcare facilities and systems: International perspectives. Public Health Emergency COVID-19 Initiative. 2020 November;(<https://dx.doi.org/10.1016%2Fj.bpa.2020.11.009>).
- Sing Leea, Wan-jun Guob, Adley Tsangb, Arthur D.P.Mak , cJustin WudKing, & Lam NgaKathl. Evidence for the 2008 economic Crisis Exacerbating depression in Hong Kong. Journal of Affective Disorders. 2010 October; 126(1-2).
- CRAIGWELL-WALKES N. Indicators of social and economic Development. Economic Geography. 2018 March ;(<https://www.grin.com/document/418219>).
- Annette Alstadsæter Bernt Bratsberg Gaute Eielsen Wojciech Kopczuk Simen Markussen Oddbjorn Raaum Knut Røed. The First Weeks of the Coronavirus Crisis: Who Got Hit, When and Why? Evidence from Norway. NATIONAL BUREAU OF ECONOMIC RESEARCH. 2020 May;(<http://www.nber.org/papers/w27131>).
- Commission E. Western Balkans' leaders meeting: EU reinforces support to address COVID-19 crisis and outlines proposal for post-pandemic recovery. EU reinforces support to Western Balkans to address COVID-19. 2020 January ;(https://ec.europa.eu/commission/presscorner/detail/en/ip_20_777).
- Tanja Pekez-PavlisKO iRaIK. Medicine Availability and Prescribing Policy for Non-Communicable Diseases in the Western Balkan Countries. Frontiers in Public Health and Economics. 2017 November ;(<https://doi.org/10.3389/fpubh.2017.00295>).
- Mona Duggal, Neha Dahiya¹, Ankita Kankaria, Manav Chaudhary and Damodar Bachani⁴. Restructuring the Healthcare System to Protect Healthcare Personnel Amidst the COVID-19 Pandemic. Frontiers in Public Health Policy. 2020 December.;(<https://doi.org/10.3389/fpubh.2020.588203>).
- Zachary Pickell, Kathleen Gu, & Aaron M Williams. Virtual volunteers: the importance of restructuring medical volunteering during the COVID-19 pandemic. BMJ Journals: Medical Humanities. 2020 April.;(<http://dx.doi.org/10.1136/medhum-2020-011956>).
- Cleland JA. The Qualitative Orientation in Medical Education Research. Korean Journal o Medical Research. 2017 June; 29(2.).
- Union E. THE COVID-19 CRISIS IN THE WESTERN BALKANS. Economic impact, Policy Responses, and Short-term Sustainable Solutions. 2020;(<https://www.oecd.org/south-east-europe/COVID-19-Crisis-Response-Western-Balkans.pdf>).
- Commission E. ASSESSING THE QUALITY OF GOVERNMENT AT THE REGIONAL LEVEL USING PUBLIC PROCUREMENT DATA. MIHÁLY FAZEKAS, UNIVERSITY OF CAMBRIDGE AND GOVERNMENT TRANSPARENCY INSTITUTE. 2017 December;(https://ec.europa.eu/regional_policy/sources/docgener/work/201703_regional_pp_governance.pdf).
- Dawer N. Advantages and Disadvantages of Open-Ended Survey Questions. Zonka: Feedback Management. 2019.;; p. <https://www.zonkafeedback.com/blog/advantages-and-disadvantages-of-open-ended-questions>.
- Paula Roberts and Helena Priest. Reliability and validity in research. Nursing Standard. 2006 July ; 20(44).
- Sunčana Roksandić, www.frontiersin.orgKrešimir Mamić and Robert Mikac. Migration in the Time of COVID-19— Policy Responses and Practices in Croatia Concerning the Western Balkan Routes and Readiness for the Post-COVID-19 Society in Which the Right to Health Care for the Most Vulnerable Is Guaranteed. Frontiers in Human Dynamic, Refugee and Conflicts. 2021 APRIL.;(<https://doi.org/10.3389/fhumd.2021.595189>).
- F.Thompson D. The Challenge of Conflict of Interest in MedicineDie Problematik von Interessenkonflikten in der Medizin. Zeitschrift für Evidenz, Fortbildung und Qualität im Gesundheitswesen. 2009 April; 103(3).
- BMJ. Ethical issues in Qualitative Research on Internet Communities. The BMJ journals. 2001 October.; 323.(<https://doi.org/10.1136/bmj.323.7321.1103>).

The World Bank. Western Balkans Regular Economic Report: Spring 2021. [Online].; 2021 [cited 2021 May 13. Available from: <https://www.worldbank.org/en/region/eca/publication/western-balkans-regular-economic-report>.

Tekabe LF. Health and Long Run Economic Growth in Selected Low Income Countries of Africa South of the Sahara Cross country panel data analysis. Södertörns University Department of Social Sciences Economics. 2007 May.;(<https://www.diva-portal.org/smash/get/diva2:579350/FULLTEXT01.pdf>).

Panizza U. Income Inequality and Economic Growth: Evidence from American Data. *Journal of Economic Growth*. 2002 February; 7(1.).

Development DFI. Growth Building Jobs and Prosperity Development. Department For International Development. 2000;(<https://www.oecd.org/derec/unitedkingdom/40700982.pdf>).

Ekel L. A Multiple Linear Regression Model To Assess The Effects of Macroeconomic Factors On Small and Medium-Sized Enterprises. Degree Projects in Applied Mathematics and Industrial Economics. 2019;(<https://www.diva-portal.org/smash/get/diva2:1334739/FULLTEXT01.pdf>).

University of Minnesota. 13.2 Types of Economic Systems. [Online].; 2021 [cited 2021 May 14. Available from: <https://open.lib.umn.edu/sociology/chapter/13-2-types-of-economic-systems/>.

International Labour Organization. Can better Working Conditions Improve the Performance of SMEs? An International Literature Review. 2013 May.;(https://www.ilo.org/wcmsp5/groups/public/---ed_emp/---emp_ent/documents/publication/wcms_227760.pdf).

World Health Organization. Coronavirus disease (COVID-19): Health and safety in the workplace. World Health Organization. 2020 June; 12.(<https://www.who.int/news-room/q-a-detail/coronavirus-disease-covid-19-health-and-safety-in-the-workplace>).

Leeuw JD. Models and methods for the analysis of correlation coefficients. *Journal of Econometrics*. 1983 June; 22.(1-2:[https://doi.org/10.1016/0304-4076\(83\)90096-9](https://doi.org/10.1016/0304-4076(83)90096-9)).

Jesper Akesson SAHRHRDM&IR. FATALISM, BELIEFS, AND BEHAVIORS DURING THE COVID-19 PANDEMIC. NBER WORKING PAPER SERIES: NATIONAL BUREAU OF ECONOMIC RESEARCH. 2020 May ;(<http://www.nber.org/papers/w27245>).

Daphne Kaitelidou, Maria Katharaki, Maria Kalogeropoulou, & Charalampos Economou. The impact of economic crisis to hospital sector and the efficiency of Greek public hospitals. *European Journal of Business and Social Social Sciences*. 2016 January; 4(https://www.researchgate.net/publication/292975733_The_impact_of_economic_crisis_to_hospital_sector_and_the_efficiency_of_Greek_public_hospitals).

Battersby B LW. Ture E. Tracking the \$9 Trillion Global Fiscal Support to Fight COVID-19. 20 May. *Insight Analysis and Economic Finance* . 2020 May ;(<https://blogs.imf.org/2020/05/20/tracking-the-9-trillion-global-fiscal-support-to-fight-covid-19/>).

Barrero JM BNDS. Covid-19 is Also a Reallocation Shock. National Bureau of Economic Research;. 2020 May .