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THE EDUCATION, LABOR MARKET, AND SOCIAL CAPITAL CHALLENGES POSED BY COVID-19

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Abstract:

This paper investigates the effects of Covid -19 on education and labor market and through the challenges posted by pandemic on the social capital development in the organization. In order to gather the required data, an online questionnaire was designed and randomly sent to the 241 enterprises of all size from manufacturing and services sectors, in 2020 in Serbia. The results reveal that there is a significant influence of the pandemic on the labor market demand, and also on the supply and unemployment and self-employment. Also the impact is presented on the education, first on the teaching model driven by technology with growing tendency to e-learning opportunities, on the changing structure

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of schooling, learning, teaching and assessment methodologies and on VET & NFE programs. Social capital is challenged most in its Structural, less in the relation and cognitive social capital development issues. Descriptive statistical analysis and multi regression and correlation analysis were used in this research. This research developed a new integrated approach to the social capital development addressing the deficiencies found in past studies on organization performance development, by exploring the correlation among more pandemic risks and supporting decisions on the social capital of the organization development by managing exposure to these risks.

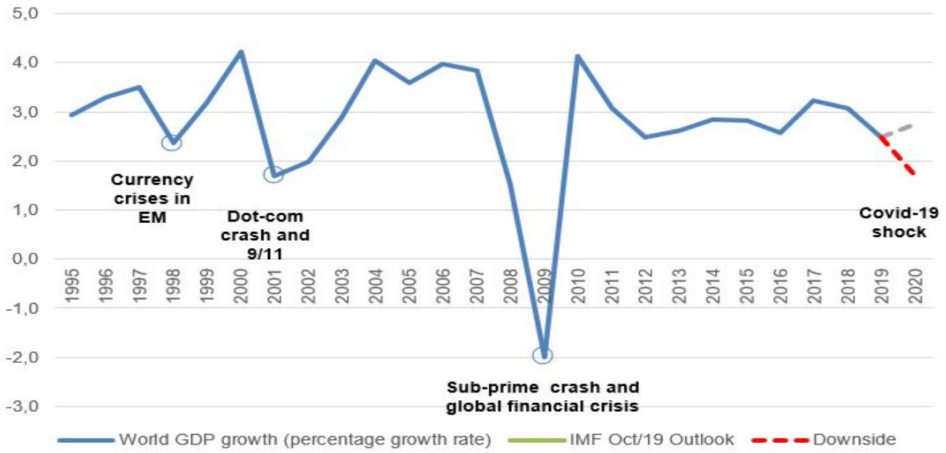
Keywords: E-learning, Labor market, Social capital, Covid-19 pandemic

JEL: I21,0350, J45, Z13, I10

1. INTRODUCTION

Trying to contribute to the research of the economic and social questions addressed to the Covid-19 impact on the human capital development the authors in this article focus their interest on exploring the reflections of the pandemic on the labour market and education.

The spread of the corona virus is not only a public health emergency, but it depresses global annual growth with the losses of consumer and investor confidence (D'Arcy 2012; Ball 2014). However, a combination of asset price deflation, weaker aggregate demand, heightened debt distress and a worsening income distribution could trigger a more vicious downward spiral (Yagan 2019), Figure 1.

Figure 1. Global GDP Growth, 1995-2020

Source: UNCTAD calculations based on IMF, October, 2019.

The crisis caused by the Covid-19 pandemic has already transformed into an economic and labour market shock. Prospects for the economy and the quantity and quality of employment are deteriorating rapidly, and sustaining business operations will be particularly difficult for Small and Medium Enterprises (SMEs) with a real threat of significant declines also in revenue and insolvencies (Johns Hopkins University 2021). The most recent data shows that the total value added of industrial enterprises declined during the first two months of 2020. Global and regional supply chains have been disrupted. The services sector, as travel retail and tourism are also especially vulnerable (Baldwin & DiMauro 2020). Beyond the urgent concerns about the health of workers, the virus and the subsequent economic shocks will impact the world of work across dimensions (Lee & Cho 2016):

- The quantity of jobs, unemployment and underemployment (Hellerstein, Kutzbach & Neumark 2016; Yagan 2019; Andrews 2020),
- The quality of work (e.g. wages and access to social protection); and

- The vulnerable groups to adverse labour market outcomes.
- Impact on global unemployment can rise in unemployment and underemployment in the wake of the virus.
- The supply and demand side of labour market (Antoni & Jackson 2007; Boston, Blackwell, Yannis & Loury 2004).

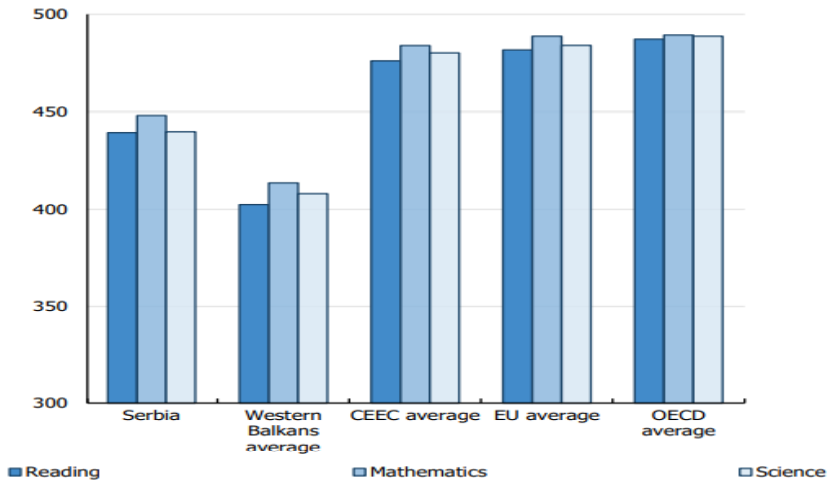
Many institutions estimated a substantial rise in unemployment, where the shock to labor demand is likely to translate into significant downward adjustments to wages and working hours. For this reason, informal employment tends to increase during crises (McKibbin & Fernando 2020; Montgomery 1991). To increase during crises on a large scale is expected for underemployment, informal employment.

Employment impacts imply large income losses for workers, which will translate into lower consumption of goods and services, which is detrimental to the continuity of businesses and ensuring that economies are resilient. Working poverty (below US\$3.20 at PPP) estimates pertain to an absolute poverty threshold for many low income countries. Further groups can be identified too:

- Young persons, and women already facing higher rates of unemployment and underemployment, are more vulnerable to falling labor demand, as witnessed during the global financial crisis,
- Older workers can also suffer from economic vulnerabilities and experience higher unemployment and underemployment rates, as well as decreased working hours.
- Recent graduates in Serbia are fearing withdrawal of job offers from corporates because of the current situation.
- self-employed, casual and gig workers, asicly unprotected wirhouth the access to paid social protection mechanisms.

In general, education system in Serbia performs around what would be predicted by its level of economic development (OECD 2019), Figure 2.

Figure 2. Performance in reading, mathematics and science in Serbian education systems, 2018.



Source: OECD (2019[5]). PISA 2018 Database. <https://www.oecd.org/pisa/data/2018database/> (accessed 17 February 2021). StatLink 2 <https://doi.org/10.1787/888934199577>

The pandemic has significantly disrupted the education, from primary to higher education sector as well, which is a critical determinant of a Serbian economic future. Through education results it directly influence the social capital and further the human capital development (Portes 1998; Putnam 1994; Glaeser, Laibson & Sacerdote 2002; Coleman 1988).

This is a crucial time for the education sector-board examinations, nursery school admissions, entrance tests of various universities and competitive examinations, among others, are all held during this period (Kvrgic, Popovic & Coric 2020).

The pandemic has significantly disrupted the education sector. Looking to the existing curriculum, it can be seen that it is mainly academic, with a heavy emphasis on classic subjects of mathematics, serbian language and

literature, sciences, geography and history. The structure of schooling and learning, including teaching and assessment methodologies, was the first to be affected by these closures, what is corrected partly by the opportunity to adopt online teaching methods. The mode of transfer is classroom-based with authoritarian, teacher-dominated and lecture-driven pedagogical practices. Several ambitious educational reform programmes in Serbia to move away from teacher-centered instruction to child-centered pedagogy, encompassing reforms in teacher training, curriculum development, the supply of instructional materials, language policy, universal primary and secondary education, have been undertaken since the mid-2020s. In the response to the educational disruption there are many opened problems like:

- The access to the internet (10.8% of all households had at least one member who had Internet access, 99.1% used their mobile phones to access the Internet. (IT survey, 2020),
- Secondary education Serbia's capacity for distance learning,
- barriers to accessing these types of delivery platforms (5.9% households had access to a computer at home, 10.8% of households owned a household telephone, 70.9% of all individuals owned a mobile phone IT survey, 2020),
- the use of mass media (65.3 % of Serbian households owned a radio, 21.8% owned a Television set (IT survey, 2020).

These problems are even bigger in the realisation of the educational programs in the Technical and Vocational Education and Training Level schools, Tertiary Education Level, and Non-Formal Education connected with obvious training programs and practical work (Gray 2011). This disruption in the delivery of education is pushing policymakers to figure out how to drive engagement at scale while ensuring inclusive e-learning solutions and tackling the digital divide (Al-Sakran 2006). Beside the integration of technology in the present Serbian education system, it is also important to establish quality assurance mechanisms and quality benchmark for online learning, as well as e-learning platforms (growing rapidly). The quality of courses may dif-

fer across different e-learning platforms (Radovic 2012a, 2012b). Carlsson et al. (2015), and Lavy (2015), consider Covid-19 impact on schooling and found a significant impact on problem-solving skills, on learning of differences in instructional time (Grozdanic, Obradović, Danilović, Mladjenović & Jevtić 2011, 2012; Jevtic, Dedjanski, Beslac, Grozdanic & Papic 2013; Oreopoulos, von Wachter & Heisz 2012). But their point is to give information about the child's progress for families and teachers (Andersen & Nielsen 2019; Piopiunik, Schwerdt, Simon & Woessman 2020; Fredriksson, Hensvik & Skans 2018; Oreopoulos, von Wachter & Heisz 2012).

The paper unfolds as follows. It provides an introduction, a brief overview of the relevant literature, followed by an field research of the education and labor market impact on the concept organizational human capital challenged by the Covid-19, and a discussion on findings, and ends by drawing major conclusions for future research.

2. LITERATURE REVIEW

Many studies have found that population health (Obstfeld & Rogoff 2000; OECD 2020; Palese 2004; Potter 2001), as measured by life expectancy, infant and child mortality and maternal mortality, is positively related to economic welfare and growth (Pritchett & Summers 1996; Bloom & Sachs 1998; Bhargava, Jamison, Lawrence & Murray 2001; Cuddington & Hancock 1994; WHO Commission on Macroeconomics and Health 2001). There are many channels through which an infectious disease outbreak influences the economy, human capital and education. Direct and indirect economic costs of illness are often the subject of the health economics studies on the burden of disease that: prevents work, estimate the loss of future income, direct expenditure on medical care and supporting services, in the estimate of the economic costs associated with the disease.

The implications of COVID-19 on households, businesses and governments are significant among which the increased public expenditure on health care is most visible (Haacker 2004; Cuddington 1993; Over 2002; The World Bank 2006). Further characteristics are the impacts of COVID-19 to a larger group of countries, using updated data that captures the greater interdependence. The main category researched in the paper is social capital. According to literature (Nahapiet & Ghoshal 1998) the organizational social capital differs further components: structural social capital connected to the connections among actors, cognitive social capital which refers to the level of shared goals and values among actors, and relational presenting the trust among actors, and, what was the base for deterring the structure of the factors for this category.

3. METHODS AND MATERIALS

3.1. *Research Hypothesis*

The objective of this research was to explore the labor market, education and social capital of the organization posed by Covid-19 pandemic.

The main hypotheses of the research were:

- H_0 = Levels of Covid-19 pandemic challenges on Labour market (abbrv. C-19 LM) and on education (abbrv. C-19 E), significantly affect Social capital development (abbrv. C-19 SCD) of serbian

The two specific hypotheses of the research were:

- H_1 : Level of Covid-19 pandemic challenges on Labour market (abbrv. C-19 LM) significantly affects social capital development (abbrv. C-19 SCD) of Serbian enterprises in 2020, and in the medium term.

- H₂: Level of Covid-19 pandemic challenges on education (abbrv. C-19 E), significantly affects social capital development (abbrv. C-19 SCD) of Serbian enterprises in 2020, and in the medium term.

There are 3 variables with their factors defined:

1. Independent variable, Social capital development (C-19 SCD), with its factors:

- Structural social capital (SCD1),
- Relational social capital (SCD2), and
- Cognitive social capital (SCD3).

2. independent variables:

2.1. Labour market (*C-19 LM*), with its factors:

- Self-employment (LM4),
- Labour market demand (LM2) .
- Unemployment (LM3), and
- Labour market supply (LM1).

2.2. Education (*C-19 E*), with its factors:

- Teaching model driven by technology (*E1*),
- Structure of schooling, learning, teaching and assessment methodologies (*E2*), and
- VET & Non-Formal Education programs (*E3*).

3.1. Research Methods

Means, standard deviations, and Pearson's product-moment correlation coefficients (r) were used to observe data in the distribution and cross-correlation structure between various kinds of challenges. It takes a value from 0 to 1 (positive correlation), and the dependence of the direction of correlation between two variables was observed. In order to qualitatively determine

the strength of the correlation, the following interpretation of its absolute value $|r|$ is often used: $|r|=0$: Complete absence of correlation; $0 \leq |r| < 0.25$: Weak correlation; $0.26 \leq |r| < 0.50$: Relatively weak correlation; $0.51 \leq |r| < 0.75$: Emphasized correlation; $0.76 \leq |r| < 1$: High correlation; $|r|=1$: Very high correlation. The correlation and regression analysis from the paper is used for research and quantification of the correlation of the observed phenomena (variables). Regression analysis determined the analytical correlation between the phenomena and variables and dependency was used in the research.

3.2. Research Population

A total of 241 companies from the industries of manufacturing (60), agriculture, forestry, fishing & individual farming (19), construction (24), financial and insurance activities (22), tourism, transport & trade services, 29.9%, education & human health 10.00%, and ICT, marketing & other service activities 8.30%, were interviewed using online questionnaires in 2020, on the challenges posted by COVID-19 on the social capital development of their organizations. Basic descriptive statistics for the main industrial activity are provided in table 1.

Table 1. Descriptive statistics for the main activity of the company in 2020.

Main activity	Frequency	Percent	Valid Percent	Cumulative Percent
Manufacturing	60	24.9	24.9	24.9
Agriculture, forestry, fishing & individual farming	19	7.9	7.9	32.8
Construction	24	10.0	10.0	42.7
Financial and insurance activities	22	9.1	9.1	51.9
Tourism, Transport & Trade	72	29.9	29.9	81.7
Education & Human health	24	10.0	10.0	91.7
ICT, marketing & other service activities	20	8.3	8.3	100.0
Total	241	100.0	100.0	

The company's revenue in 2020 are given in Table 2. From: €10,001–€50,000, 24 or 5.64%; from €50,001 to €100,000, 91 or 21.41%; from €100,001 to €500,000, 124 or 29.17%; from €500,001 to €2,000,000, 93 or 21.82%; and over €2,000,001, 93 or 21.82%.

Table 2. Descriptive statistics according to company's revenues in 2020.

Revenues in 2020	Frequency	Percent	Valid Percent	Cumulative Percent
from 10,000 to 50,000€	82	34.0	34.0	34.0
from 50,001 to 100,000€	99	41.1	41.1	75.1
from 100,001 to 500,000€	31	12.9	12.9	88.0
over 500,001€	29	12.0	12.0	100.0
Total	241	100.0	100.0	

Revenue origins of the company are presented in table 3. Revenues realised at the domestic market 206 firms or 85.50%, and at foreign market 35 or 14.501% companies.

Table 3. Descriptive statistics by market 2020.

The origin of income	Frequency	Percent	Valid Percent	Cumulative Percent
Domestic market	206	85.5	85.5	85.5
Foreign market	35	14.5	14.5	100.0
Total	241	100.0	100.0	

In table 4 are presented descriptive statistics on the number of employees of the companies in 2020: 94 companies had from 1 to 20 employees, from 21 to 50 employees 124 companies, from 51 to 100 employees 17 firms, and over 101 employees, 2,50% of interviewed firms.

Table 4. Descriptive statistics according to the number of employees in 2020.

Number of employees in 2020	Frequency	Percent	Valid Percent	Cumulative Percent
from 1 to 20 employees	94	39.0	39.0	39.0
from 21 to 50 employees	124	51.5	51.5	90.5
from 51 to 100 employees	17	7.1	7.1	97.5
over 101 employees	6	2.5	2.5	100.0
Total	241	100.0	100.0	

In table 5 are given the values of descriptive statistics of the education level of employees: 50.00% has a secondary education, 19.90% primary, 17,00% Higher Vocational education and High education, and 12.00% of employees are without education, or not finished level.

Table 5. Descriptive statistics according to the level of education of employees

Level of employee education	Frequency	Percent	Valid Percent	Cumulative Percent
No education	29	12.0	12.0	12.0
Primary education	48	19.9	19.9	32.0
Secondary education	121	50.2	50.2	82.2
Higher Vocational education and High education	43	17.8	17.8	100.0
Total	241	100.0	100.0	

In table 6 are given statistics on the age of employees: the most, 34,90% are from 36-45 ages old, from 46-55 years old are 27,8%, from 26-35 years are 17,00%, 7,90% have 18-25%, and older than 56 are 12,40% of employees.

Table 6. Descriptive statistics by age of employees

Age of employees	Frequency	Percent	Valid Percent	Cumulative Percent
18-25	19	7.9	7.9	7.9
26-35	41	17.0	17.0	24.9
36-45	84	34.9	34.9	59.8
46-55	67	27.8	27.8	87.6
older than 56	30	12.4	12.4	100.0
Total	241	100.0	100.0	

In table 7 are given descriptive statistics on the skills of the employees: most have Technical production skills, than ICT basic and advanced skills. Teamwork skills have 7.90%, organization and Internet marketin skills have 135, leadership skills 14.00%, innovation 10.00%, and E-commerce skills 21.00%.

Table 7. Descriptive statistics according to employee skills

Employee skills	Frequency	Percent	Valid Percent	Cumulative Percent
Technical production skills	81	33.6	33.6	33.6
ICT skills basic level	36	14.9	14.9	48.5
ICT skills advanced level	22	9.1	9.1	57.7
Leadership and Management	14	5.8	5.8	63.5
Problem solving and analytics	12	5.0	5.0	68.5
Teamwork	19	7.9	7.9	76.3
Creativity and innovation	10	4.1	4.1	80.5
Organizational skills	13	5.4	5.4	85.9
Internet marketing and social networking	13	5.4	5.4	91.3
E-commerce	21	8.7	8.7	100.0
Total	241	100.0	100.0	

Descriptive statistics on the changes in mode of operating during Covid-19 in 2020 are given in table 8. In normal production, services program worked 29.50% of employed, 14.10% experienced the transition from multiple shifts to single-shift work, from home worked 23.70%, teleworking 10.00% of them, digital communication 5.80%, and e-commerce pattern 5.00%.

Table 8. Descriptive statistics on changes in mode of operation during Covid-19 in 2020.

Mode of operation	Frequency	Percent	Valid Percent	Cumulative Percent
Working from home	57	23.7	23.7	23.7
Teleworking	24	10.0	10.0	33.6
Transition from multiple shifts to single-shift work	34	14.1	14.1	47.7
Digital communication	14	5.8	5.8	53.5
E-commerce	12	5.0	5.0	58.5
Transition to flexible working hours	29	12.0	12.0	70.5
Normal production / service program	71	29.5	29.5	100.0
Total	241	100.0	100.0	

An assessment of adjustment of employees to working conditions during Covid-19 in 2020 is presented by descriptive statistics in table 9. To new tools and means of modern technology adjusted 26.10% of employees, 32.00% to the changed working hours and shifts, to new forms of communication 22.00% of them, and to special measures of distancing and protection working in the same space, 19.90% of the employees.

Table 9. Assessment of adjustment of employees to working conditions during Covid-19, 2020

Working conditions adjustment	Frequency	Percent	Valid Percent	Cumulative Percent
New forms of communication	53	22.0	22.0	22.0
Change of working hours, shift	77	32.0	32.0	53.9
Work in the same space with special measures of distancing and protection	48	19.9	19.9	73.9
Access to new tools and means of modern technology (internet communication, trade, marketing, social networks, devices)	63	26.1	26.1	100.0
Total	241	100.0	100.0	

3.3. Key findings

The results concerning the values of challenges posted by COVID-19 on labor market and education, which were analyzed based on their impact on the social capital of the examined industrial companies development, are presented here.

In table 10 are listed the values of descriptive statistics for the first challenged phenomena - The impact of C-19 on LM (C-19 LM). It was analyzed through some of its factors, such as Self-employment (LM4), Labour makret demand (LM2), Unemployment (LM3), and Labour market supply (LM1). *The impact of C-19 on LM, Labour makret demand has the highest median score of 4.02, and Self-employment has the low-est median score of 3.72.*

Table 10. Claims and their values for The impact of C-19 on LM (C-19 LM)

Claim Name	Mean	Std. Deviation
Self-employment (LM4)	3.72	1.014
Labour makret demand (LM2)	4.02	0.889
Unemployment (LM3)	3.95	1.073
Labour market supply (LM1)	3.92	1.165

In Table 11 are listed the values of descriptive statistics for the second challenged phenomena - The impact of C-19 on education (C-19 E). It was analyzed through some of its factors, such as: teaching model driven by technology, structure of schooling, learning, teaching and assessment methodologies, and VET & NFE programs. In the impact of C-19 on E, Teaching model driven by technology has the highest median score of 3.94, and VET & NFE programs has the lowest median score of 3.72.

Table 11. Claims and their values for the impact of challenges of C-19 on education (C-19 E)

Claim	Mean	Std. Deviation
Teaching model driven by technology (E1)	3.94	1.166
Structure of schooling, learning, teaching and assessment methodologies (E2)	3.83	1.072
VET & NFE programs (E3)	3.72	1.017

In Table 12 are listed the values of descriptive statistics for the third challenged phenomena - The impact of C-19 *on the development of social capital of organizations (C-19 SDC)* It was analyzed through some of its factors, such as Structural social capital, Relational social capital, and Cognitive social capital. *The highest median score of 4.06 had structural social capital, and Relational social capital had the low-est median score of 3.76.*

Table 12. Claims and their values for the impact of C-19 on the development of social capital of organizations (C-19 SDC)

Claim Name	Mean	Std. Deviation
Structural social capital (SCD1)	4.06	0.916
Relational social capital (SCD2)	3.76	1.024
Cognitive social capital (SCD3)	3.96	1.110

In table 13 are provided the descriptive statistics for 3 variables and values of thier claims for the impact of C-19 on the development of social capital of organizations (C-19 SDC). Variable Claims and values for the impact of C-19 on the development of social capital of organizations (C-19 SDC) has the highest mean of 3.9267, and the variable Claims and values of the impact of C-19 on LM (C-19 LM) has the highest Std. Deviation of 0.95842

Table 13. Mean i Std. Deviation for variables

	Claims and their values for The impact of C-19 on LM (C-19 LM)	Claims and their values for the impact of challenges of C-19 on education (C-19 E)	Claims and values for the impact of C-19 on the development of social capital of organizations (C-19 SDC)
Mean	3.9025	3.8299	3.9267
Std. Deviation	0.95842	0.72973	0.68019

3.3.1. Corelation analysis

Opinion and analysis of the attitudes of respondents are interrelated by Pierson correlation in Table 14. The directions of all possible connections between independent and dependent variables are positive, which means that there is a positive correlation between these variables.

Correlation coefficient between the C-19LM and C-19E variables is 0.8609 and it is strong, and the determination coefficient – exactly how much it makes C-19LM compared to C-19E is 0.74114881 or 74.11%. Correlation coefficient - the correlation between C-19LM and C-19SDC variables is 0.7751 and it is strong, and the determination coefficient – exactly how much it can be predicted C-19LM versus C-19SCD is 0.60078001 or 60.07%. The correlation coefficient - the correlation between the C-19E and C-19SCD variables is 0.8459 and it is strong, and the determination coefficient –C-19E versus C-19SCD is 0.8459 or 0.71554681 or 71.55%. It can be concluded that between all groups of variables there is a strong positive correlation and a strong prediction of dependent variable with the help of independent variables.

Table 14. Correlation of the research model

	C-19LM	C-19E	C-19SCD
C-19LM	1.0000	0.8609	0.7751
C-19E	0.8609	1.0000	0.8459
C-19SCD	0.7751	0.8459	1.0000

Correlation and regression analysis for model variables C-19LM & C-19SCD

The independent variable of the formed model is C-19LM, and the dependent variable is C-19SCD. The review of statistical significance is shown in table 14 and ANOVA test of *specific hypothesis H1*, that $r^2=0$ is **confirmed**, because the statistical significance is <0.0001 [$F(1,239)=359.7590$, $p<0.0001$].

Table 15. ANOVA for variables C-19LM & C-19SCD

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	66.71635	66.7164	359.7590
Error	239	44.32191	0.1854	Prob > F
C. Total	240	111.03827		<0.0001

In the table 16 is determined the contribution size of the independent C-19LM variable to the C-19SCD dependent variable, which in this case is 0.775139. The VIF level is 1,000. Based on the results obtained, the *hypothesis H1 is confirmed*: C-19LM level, significantly affects C-19SCD levels.

Table 16. Coefficients for variables C-19LM & C-19SDC

Term	Estimate	Std Error	t Ratio	Prob> t	Std Beta	VIF
Intercept	1.77988	0.116535	15.27	<0.0001	0	.
C-19LM	0.550114	0.029003	18.97	<0.0001	0.775139	1

Non-standard coefficients from table 15 are used to assemble the regression equation, which is (1) or (2):

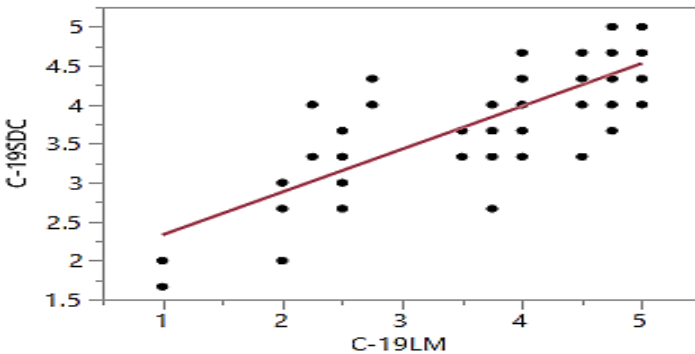
$$y=1.77988+0.550114 \cdot x_1 \quad (1)$$

or

$$C19SCD=1.77988+0.550114 \cdot C19LM \quad (2)$$

In Figure 3, a Diagram of the regression equation for the formed research model C-19LM, C-19SCD is presented.

Figure 3. Diagram of the regression equation of the impact on the formed research model C-19LM, C-19SCD



Correlation and regression analysis for model variables C-19E, C-19SCD

The independent variable of the formed model is C-19E, and the dependent variable is C-19SDC. The review of statistical significance is shown in table 16 and ANOVA test of **second specific hypothesis H2** that $r^2=0$ is **confirmed**, because the statistical significance is <0.0001 [$F(1,239)=601.3604$, $p<0.0001$].

Table 17. ANOVA for variables C-19E, C-19SCD

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	1	79.45879	79.4588	601.3604
Error	239	31.57948	0.1321	Prob > F
C. Total	240	111.03827		<0.0001

In the table 18 is determined the contribution size of the independent C-19E in a prediction of dependent variable C-19SCD which in this case is 0.84593. The VIF level is 1,000. Based on the results obtained, **the specific hypothesis H₂ is confirmed: C-19E level of C-19 imapce significantly affects C-19SCD level.**

Table 18. Koeficijenti za varijable C-19E, C-19SCD

Term	Estimate	Std Error	t Ratio	Prob> t	Std Beta	VIF
Intercept	0.9068424	0.125352	7.23	<0.0001	0	.
C-19E	0.7884987	0.032154	24.52	<0.0001	0.84593	1

Non-standard coefficients from table 17 are used to assemble the regression equation, which is (3) or (4):

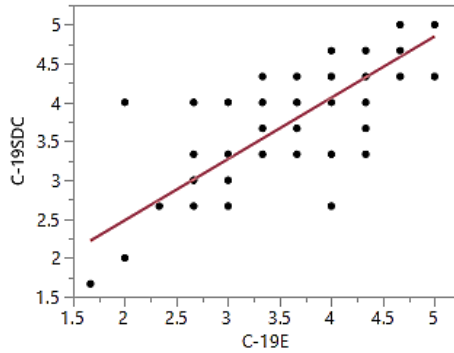
$$y = 0.9068424 + 0.7884987 \cdot x_2 \quad (3)$$

or

$$C19SDC = 0.9068424 + 0.7884987 \cdot C19E \quad (4)$$

In Figure 4, a Diagram of the regression equation for the formed research model C- C-19E, C-19SCD, is presented.

Figure 4. Diagram of the regression equation of the impact on the formed research model C-19E, C-19SCD



Multiple correlation and regression analysis for variables of the formed model C-19LM, C-19E and C-19SCD

The independent variables in this research are: C-19LM and C-19E, and the dependent variable is C-19SCD. The review of statistical significance is presented in table 18- ANOVA test of the **main hypothesis H0** that $r^2=0$, **is confirmed**, because the statistical significance <0.0001 [$F(2,238)=312.3060$, $p<0.0001$].

Table19. ANOVA for variables C-19LM, C-19E & C-19SCD

Source	DF	Sum of Squares	Mean Square	F Ratio
Model	2	80.40212	40.2011	312.3060
Error	238	30.63615	0.1287	Prob > F
C. Total	240	111.03827		<0.0001

In table 20 are determined the contribution sizes of independent variables: C-19LM and C-19E in the prediction of dependent variable C-19SCD. In this case, the independent C-19E variable contributes the most, to 0.689983. The variance growth factor is 3.862611. Based on the results obtained, main hypothesis H0 can be confirmed: C-19LM and C-19E levels of C-19 impact significantly affect C-19SCD levels.

Table 20. Coefficients for variables C-19LM, C-19E & C-19SCD

Term	Estimate	Std Error	t Ratio	Prob> t	Std Beta	VIF
Intercept	0.9618431	0.125382	7.67	<0.0001	0	.
C-19LM	0.1285609	0.04749	2.71	0.0073	0.181149	3.862611
C-19E	0.6431393	0.062373	10.31	<0.0001	0.689983	3.862611

Non-standard coefficients from table 19 are used to assemble the regression equation, which is (5) or (6):

$$y=0.9618431+0.1285609 \cdot x_1+0.6431393 \cdot x_2 \quad (5)$$

or

$$C19SDC=0.9618431+0.1285609 \cdot S19LM+0.6431393 \cdot C19E \quad (6)$$

In figure 5 partial diagram of regression equations for the formed model C-19LM, C-19E and C-19SCD are given, and in figure 4 multiple equation regressions are presented.

Figure 5. Partial diagram of regression equations for the formed model C-19LM, C-19E and C-19SCD

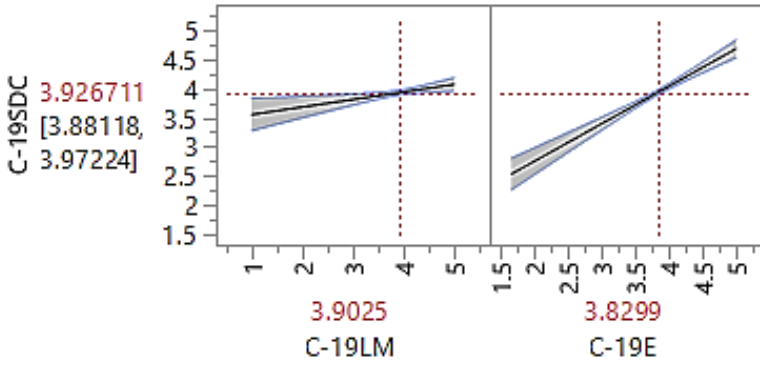
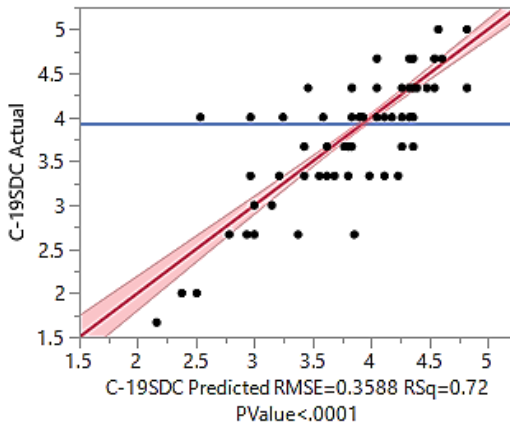


Figure 6. Multiple regression impact equation for formed model C-19LM, C-19E & C-19SCD



5. DISCUSSION AND CONCLUSIONS

The findings of the empirical and theoretical research presented in this paper confirmed the hypothesis of the article on the significant impact of Covid-19 pandemic on education, labor market and on social capital development as final research issue.

While updated forecasts vary considerably and largely underestimate the situation -- they all point to a significant negative impact on the economy showing growing signs of a global economic recession.

The activities with the protecting families and workers from pandemia have to be top priority, already disadvantaged groups of workers, stimulate policies, labor demand, active fiscal policy to stabilize economic activity, protecting workers in the workplace. To strengthen measures to adapt work arrangements (e.g. teleworking), supporting employment and incomes, extending social protection for all are some of the important activities of all stakeholders to be realized.

Concerning to the COVID-19 in the sector of Education, the rethinking e-Learning in Serbia is very important. The coronavirus pandemic highlights the ongoing need for education to be the first line of defense in crisis -not the first casualty. The digital divide in Serbia highlights the inequality gap. For the vast majority of learners living in rural Serbia, online learning is difficult. Talk and discussions on fully embracing ICT in education must be turned into action.

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IZAZOVI OBRAZOVANJA, TRŽIŠTA RADA I SOCIJALNOG KAPITALA UZROKOVANI COVIDOM-19

Rezime:

U radu se istražuju izazovi pandemije Covida-19 na tržište rada, obrazovanje u razvoju socijalnog kapitala organizacije. U cilju prikupljanja potrebnih podataka, elektronskim upitnikom obuhvaćeno je 241 preduzeće, svih veličina sa teritorije Srbije u 2020, iz proizvodnog i uslužnog sektora. Rezultati istraživanja upućuju na značajan uticaj pandemije na tražnju i ponudu na tržištu rada, na nezaposlenost i samozapošljavanje. Uticaji u oblasti obrazovanja su najjači na nastavni model vođen tehnologijom sa rastućom E-learning, na promenu strukture učenja, nastave i metodologije, te na programe neformalnog i strukovnog obrazovanja. Uticaji pandemije kroz dve nezavisne varijable obrazovanja i tržišta rada su u oblasti

socijalnog kapitala najveći na njegov strukturni razvoj u organizaciji. U istraživanju su korišćene metode deskriptivne statistike i višestruke regresione i korelacione analize. Ovo istraživanje je razvilo novi integrisani pristup razvoju socijalnog kapitala, dopunjava prethodne studije o razvoju performansi organizacije, istraživanjem korelacije između uticaja više rizika od pandemije i njihovom podrškom u donošenju odluka za upravljanje rizicima u razvoju socijalnog kapitala.

Ključne reči: E-learning, Tržište rada, Socijalni kapital, Covid-19

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