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Reviewer A	
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Recommendation	: Revisions required

CORRECTION REPORT Corrections made by the author Q. Comments by reviewer Α. Does the English text of the manuscript 1. The grammar has been completely revised. 1. require revision to grammar, syntax or The authors use the services of quality **English expression?** proofreading. Not only words, but almost all sentences in the paper are corrected by The English text of the manuscript proofreading services. requires revision to grammar. 2. 2. Figure 2 is replaced with a new one to avoid Can you suggest improvements in the illustrations and/or tables? Are they all double interpretation. This new image displays necessary? Are additional illustrations the relevant information. In addition, the and/or tables desirable or required? location of the arrow was revised with a red dot indicating the lockdown zone in Indonesia. Improve the quality of the map. The information in the map is not clear. The legend should clearly indicate meaning of the graduated color on map, and what is the unit. Why the locations are drawn with arrows? Why not using dots. 3. Please indicate any errors or necessary 3. Three correlations (Spearman, Kendall, and improvements to the discussions of fact, Person) are simultaneously used because each interpretation or calculations. parameter in the variable is different (e.g. nominal and ratio). Another reason for mixing The author does not have to conduct analyzes is the advantage of correlational three correlation analysis at the same time research that can be used to investigate the and compare them. Use Pearson relationship of two or more variables correlation when the data type is ratio simultaneously. Correlation provides data. Use Spearman's correlation if the information regarding the level of strength of data type is not ratio. the relationship between variables, addressing problems related to several fields at once. such as social and economic. It should be noted that panel data is the database for this study. Thus, correlation is very useful in predicting large sample sizes, both partial effects and coefficients that examine two-way relationships. Corrections to the experimental model were 4. Are the experimental methods adequately 4. described? made in the methodology. Before processing the data, it is important for the statistical Not clearly articulated in the text. dimension to first formulate the regression equation function and the correlation formula based on probability standards.

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5.	Has the author cited the most pertinent literature?	5.	There is 1 citation that needs to be accompanied by the author's name.
6.	Yes. Is the abstract specific and representative of the paper? The abstract needs improvement, so that it can represent the content of this paper in efficient manner. The first two sentences of the abstract can be omitted. Be concise in the abstract. At the end of the abstract, the author need to state the result of this study and what are the implications.	6.	The first two sentences of the abstract are omitted and the statement of study implications is clarified. Therefore, the authors replace the sentences that are not clear are deleted and added with a new abstract.
7.	Is the title of the paper appropriate and likely to serve its purpose? The title of the paper need some revision to represent the content of this paper.	7.	The title was revised by adding relevant words to represent the contents of the paper.
8.	Is the article prepared according to the journal's Submission Guidelines? Are the references cited according to the APA citation style? Yes. However, some corrections in the citation style in the reference list are still needed.	8.	Correction in citation style (APA) has been adjusted in the reference list
9.	Do you think that the manuscript is acceptable for publication in Geographica Pannonica? With copy-editing and attention to English expression. With major revisions and re-reviewing by yourself.	9.	Large-scale change is attempted by the authors constructively.
10.	More additions	10.	The addition of 1 year of data (from the 2020- 2022 period, now to 2020-2023), where it is urgent to review the dynamics or developments of the 2 periods (2020-2021) during the Covid-19 spike with predictive data towards the new normal (2022-2023). Improvements to the literature review, where the chapter is not applied according to the writing guidelines. We removed the hypothesis development and included it in the introductory session.

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	It will be published in June Issue. We will send you technically prepared PDF version of your paper to check it before it is posted online.			
	We wish you (and us) many citations.			
	Thank you for the cooperation.			
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# Using Correlationto Explore the Impact of Corona Virus Disease on<br/>Socioeconomics:Socioeconomics:Case Studies in Indonesia\*Using CorrelationAnalysis to Examine the Impact of Covid-19 Pandemics on Various<br/>Socioeconomic Aspects:Case study of Indonesia\*

**Comment [A1]:** Using Correlation Analysis to Examine the Impact of Covid-19 Pandemics on Various Socioeconomic Aspects

Comment [A2]: Case study of Indonesia

#### Abstract

In the 21<sup>st</sup> century, the tragedy of the pandemic shocks the world. This non natural disaster is called COVID 19. Its dominant effect is also worrying about social and economic conflicts at local, national, and even international levels. The orientation of this research is to investigate the impact of COVID 19 on the socioeconomic aspects in Indonesia for the 2020 2022. We set the research using official/secondary publications. Data analysis was interpreted in three formats: Pearson, Kendall's, and Spearman's correlations. It channeled empirical testing through Microsoft Excel and SPSS v.25. Social items include migration, mortality, domestic violence, and sexual harassment, while the nine economic items are spending per capita, well being, unemployment, poverty, and labor productivity. Then, statistical instruments were reviewed based on the correlation coefficient and level of significance (5% for Pearson and 1% for Kendall's and Spearman's). The results are not much different between Pearson's approach with Kendall's and Spearman's. In the Pearson model, it proved a negative correlation when COVID-19 increases, so migration, unemployment, poverty, and labor productivity decrease. COVID 19 has had a positive impact on mortality, domestic violence, sexual harassment, per capita spending, and well being. In Kendall's and Spearman's tests, poverty and labor productivity have actually increased because of COVID 19. Implementing semi-lockdown is a priority, so that the social and macroeconomic constellations continue without ignoring the latent dangers of COVID 19. The limitations of the study are discussed in the future.

This paper diagnoses the determination of Covid-19 on economic and social aspects in Indonesia. Panel data collected from 34 provinces in Indonesia for the 2020-2023 period supports the quantitative method. Three analyzes (Spearman, Kendall, and Pearson) were used to measuring the relationship and its partial effect. Research findings indicate that Covid-19 cases have a negative impact on labor productivity, migration, domestic violence, and sexual harassment. From other results, per capita spending, well-being, unemployment, and poverty actually increased when there was a surge in Covid-19. For the Spearman rho correlation, with a degree of 1 percent (p < 0.01), there is a significant effect between capita spending on well-being, per capita spending and well-being on migration, and poverty on labor productivity. Tested by Kendall's tau and Pearson, the Covid-19 tragedy positively affected per capita spending, wellbeing, unemployment, poverty, and mortality, but labor productivity, migration, domestic violence, and sexual harassment were negatively affected by Covid-19. The partial probability level (p < 0.05 and p < 0.01) reveals a significant effect of per capita spending on well-being, migration on per capita spending and well-being, and poverty on labor productivity. Although per capita spending has a significant impact on well-being (5 percent confidence level), there is a slight difference from the Pearson test, where with a tolerance limit of 1 percent, poverty affects

Comment [A3]: These two sentences can be
omitted. Start from the third sentence.

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Comment [A5]: secondary data sources.

**Comment [A6]:** Why did you have to conduct three correlation analysis at the same time and compare them? Use Pearson correlation when the data type is ratio data. Use Spearman correlation if the data type is not ratio.

**Comment [A7]:** Yes, because you don't need to perform three correlation analysis method and compare the results. Since your data type is mostly ration, you can perform Pearson's correlation. Then you analyze the results thoroughly.

**Comment [A8]:** At the end of this abstract, the author should mention the result of the analysis and its implications.

sexual harassment significantly. Covid-19 has taught many things, so that humanity does not disappear with conditions that seek peace. Policy makers need to schedule a more inclusive national and regional resilience system.

Keywords: Social; economy; Covid-19; Correlation; panel data

\*Corresponding authors: Jiuhardi Jiuhardi, e-mail: jiuhardi@feb.unmul.ac.id

# Introduction

Although in some countries declared the status of Coronavirus disease 2019 (Covid-19) from 'pandemic' to 'endemic', it will always be known as a global disease in the 21st century (e.g. Melimopoulos, 2022; Katzourakis, 2022; The Lancet Infectious Diseases, 2022). This transition of status does not guarantee a brief holistic recovery (Rahmawati et al., 2022). The domino effect is that humans are threatened with extinction because they spend a lot of energy to fight this virus, continuity across generations, it tested the phase of caring in navigating the existence of the ecosystem. Recently, Donthu (2020) and van Barneveld et al. (2020) find that the peak of the fall in prosperity and a crisis of confidence also hit the wealthy, or those who were previously considered upper class, to make it through difficult times.

After going through two periods, since its emergence was detected in China in 2019, local, domestic, and cross-border governments have again focused on thinking about and perfecting regulations that prioritize economic and social resilience (Rahman et al., 2021). For example in Indonesia, for the long term, the government maneuvered through large-scale social restrictions (PSBB) and claimed that this policy was more stringent which was channeled to limit routines such as tightening transportation modes, restricting cultural attractions, reducing activities in public facilities, school holidays, stop religious celebrations and activities in places of worship, and insulate offices (Anugerah et al., 2021). In the short term or after easing, it is now turning to imposing restrictions on community activities (PPKM). The second regulation emphasizes more on the microscale, where the Java-Bali PPKM is focused on the islands of Bali and Java as the 'epicenters' in Indonesia (Khoirunurrofik et al., 2021). In practice, the government centralizes offices and educational networks (Maria et al., 2021). Without compromising the health aspect, only 75 percent of implementing work from home (WFH) and teaching processes, while 25 percent direct these activities in offices (WFO), school buildings, and universities through epidemiology.

The government's success in driving the spread of Covid-19 has actually broken economic and social mobility (Ibn-Mohammed et al., 2021). The high control of operating hours in all fields is contrary to the desire of business people, communities, media, and scholars to immediately escape from the bondage of welfare. Considering the population size in Indonesia is classified as densely fourth after China, India, and the USA, it is difficult to imagine getting out of suffering (Irwansyah et al., 2022). Uniquely, of the 4 countries, only two countries are classified as economic market forces, referring to an inclusive economic growth rate (GDP). The large demographic bonus from Indonesia and India does not reflect an even proportion of prosperity. The portrait of the 'middle income trap' only rests on the dilemma of a decline in happiness (Kurniawan et al., 2021).

Towards economic stability is relatively long, but there are certain clauses that are met. Its vital condition relates to political courage in decision-making that maintains the framework of

national independence. With managing social visits, work spaces, gatherings, and even restoring community psychology, Panneer et al. (2022), Popkova et al. (2021), Muhyiddin and Nugroho (2022), and Mustari et al. (2022) emphasized that the response of stakeholders in integrating a complex economic empowerment system is the most ideal thing. In an instant, developments that allow full awareness of being devoted to organizations, households, and social groups at least give birth to closeness and moral commitment. Covid-19 is not only the responsibility of the government, but all components. Sustainable development embodies mechanisms that automatically facilitate the achievement of international goals (Shulla et al., 2021).

Not always disasters in the world like the Covid-19 outbreak are gradual. In this period, humans must survive and confine themselves for a moment in the fight to prevent transmission. Referring to the pattern of dependence on humanity from the cycle of empirical, theoretical, and recent phenomena, the urgency of the paper is to identify the effects of Covid-19 growth on socioeconomic in Indonesia. The agenda for the paper is composed of five points sections. The first phase is the introduction. Followed by data and methods in the second phase. Results are in the third phase. Furthermore, the fourth and fifth phases include discussion and conclusion sessions. The essence of the study maps the effects of the Covid-19 pandemic that hinders or improves social and economic structures based on seven pillars (per capita spending, well-being, unemployment, poverty, labor productivity, migration, mortality, domestic violence, and sexual harassment).

Publications highlighting the relevance of Covid-19 to social and economic factors support research motivation. Examining the decline in household consumption due to Covid-19, it is traced in the capacity of families who tend to spend their spending on medicines, increasing internet quota while children are studying at home, and preparing food supplies whose intensity is higher than the normal situation (Amalia et al., 2020). Not enough, it predicted economic uncertainty to reduce well-being (Thygesen et al., 2021; Bathina et al., 2021). Survahadi et al. (2021), Haldar and Sethi (2022), and Ohrnberger et al. (2021) linked the government's anticipation through intensive lockdowns, so that various industries reformed the system and rejuvenated with more modern technology. Companies quickly adapt and adopt production tools dynamically, but labor productivity fluctuations trigger employees to lose their jobs, mass unemployment, and encourage poverty. For the sake of locking at the regional level and domestic borders, the government will prohibit job seekers from abroad from entering and leaving the country for a while. Tightening regulations also stop urbanites from migrating to minimize physical contact.

In essence, human habitats cannot lock themselves away for too long, be it at home, in certain locations, and for an uncertain of time. People find it hard to shine like they used to because of the pleasures of continuing to grow isolated. This has prompted the UK government to allocate a portion of public spending into Covid-19 disaster mitigation (Minister for Patient Safety, Suicide Prevention and Mental Health of the UK, 2021). At an enormous cost, the government is trying to offer special assistance to patients with mental disorders and feelings of out-of-bounds anxiety to re-motivate the population (Li et al., 2019). Volunteers, doctors, psychiatrists, and medical personnel are mobilized so that sufferers stimulate an inspiring unity of life (Shroff et al., 2022). Planning combined with careful tracking, control, and mentoring becomes a synchronized health insurance. In other places, for example, poor countries and developing countries, they are still rethinking whether to try this crucial regulation or are they are still fighting with physical safety. The distribution of vaccines is only limited to a program to reduce the death rate, but concrete steps to trace the traces of sexual harassment and domestic violence are still constant. In fact, if you follow the counseling transformation that is intended for

Comment [i-[9]: sections

the public, it makes sense rather than only targeting the body's immune system to reduce the risk of exposure. It is known that the world mortality ratio because of being positive for Covid-19 is not much compared to people who have experienced domestic violence and sexual harassment. (Kotlar et al., 2021; Mittal & Singh, 2020; Usta et al., 2021). Traits (2020), Kaukinen (2020), Evans et al. (2020), Campbell (2020), and Sacco et al. (2020) suspect that wives and children are more often victims while staying at home during the pandemic.

## Literature review and conceptual model

#### COVID 19 and migration

The response from COVID 19 undermines migration in Tajikistan. The inflow of remittances has a disastrous effect on household welfare. Although the effect declined sharply, temporary expectations on migrant stocks were severe. Although the border closure policy is only temporary, they force those who work abroad in the spring to stay in their home countries. Ironically, immigrant workers still work in the destination country and cannot return. Incumbent migrants are looking forward to returning in the summer (Shimizutani & Yamada, 2020). A publication by Balakrishnan (2021) states that for Europe, the migrant population is getting out of control. Not only the risk of transmission, but crime and discrimination are always increasing. The social effects of prolonged lockdown as part of restrictions on mass movement have forced governments to close borders, leaving those who work desperate for asylum and desperate to be reunited with families in their home countries. Interestingly, Sanchez & Achilli (2020) concludes the movement of government policies has restricted that migrant travel. Not only that, asylum seekers and refugees in various communities transit irregularly. As a result, facilitators emerged who smuggled migrants illegally, which resulted in clandestine travel activities. An important implication is the impeded dynamics of world mobility. Therefore, the first hypothesis is assumed:

Hypothesis 1: As the COVID 19 trend increases, migration decreases.

**Comment [A10]:** The hypothesis should be put in the methods section.

# **Data and methods**

#### Data set

In the context of sources of information, data is collected from official government publications. National scale data are simulated over four periods (2020 to 2023). Specifically, for data in 2022-2023, it is a linear prediction that implies future developments and is still temporary. The research output limits only nine parameters. Economic factors comprise five elements (per capita spending, well-being, unemployment, poverty, and labor productivity) and four social factors (migration, mortality, domestic violence, and sexual harassment).



**Figure 1.** Conceptual framework (*Source:* compiled from Varlamovaa dan Larionova , 2015; Tapsin dan Hepsag, 2014; Gaucher et al., 2022; Musikanski et al., 2017; Soylu et al., 2018; Streeten, 1994; Yulia dan Irina, 2020; Salehi et al., 2012; Muñoz-Mora et al., 2022; Melde, 2012; Akin dan Banfi, 2019; Choi et al., 2019; Bhaskaran et al., 2021; Walby et al., 2017; Robinson, 2003; Rakovec-Felser, 2014; Merkin, 2012; Bondestam dan Lundqvist, 2020; Focacci et al., 2022; Patel et al., 2020).

Each indicator refers to concepts and definitions by the discoveries of professionals, scholars, and scholars who are competent in their field. The functions and terms of all variables are summarized in *Fig. 1*.

#### Data processing

It presented the data interpretation instrument through a quantitative approach. The investigative technique uses the panel regression method based on associations between 34 provinces in Indonesia, so that the cross-section and time-series data are 1,360 samples. Social and business studies with Covid-19 issues tied to panel regression analysis are still ongoing (e.g. Khalid et al., 2021; Tinungki et al., 2022; Barría-Sandoval et al., 2022; Çivak et al., 2021; Abdelkafi et al., 2022; Pan, 2022; Haldar and Sethi, 2021; Junaidi et al., 2020; Ong and Marheni, 2021). There are two formulations in the panel regression, including models that only consider individual effects ( $\alpha_i$ ) and include the effects of time or time variables as follows:

One way model:

$$Y_{it} = \alpha + \alpha_i + X'_{it}\beta + \varepsilon_{it}$$

Two way model:

$$Y_{it} = \alpha + \alpha_i + \delta_t + X'_{it}\beta + \varepsilon_{it}$$

As shown in *Fig. 1*, the two functions of the above equation are played by Covid-19 as independent variables and eight dependent variables positioned by per capita spending, wellbeing, unemployment, poverty, labor productivity, migration, mortality, domestic violence, and sexual harassment. Constants ( $\alpha$ ) represent terms in algebraic operations in the form numbers and do not contain variables. Then, is the vector or parameter of the estimation result, it is the observation, and it defines the regression error term. This equation also shows where there is an additional time effect denoted by delta, which is fixed or random between periods.

**Table 1.** Interpretation of correlation coefficient and significance type (*Source:* modified from Schmidt and Osebold, 2017; Singh, 2013).

<b>Coefficient interval</b>	Relationship	Level of confidence	Specification
> 0.9	Very high correlation	p ≤ 0.001 (99.9 percent)	Highly significant
<u>&lt;</u> 0.9	High correlation	p ≤ 0.01 (99 percent)	Very significant
<u>&lt;</u> 0.7	Medium correlation	$p \le 0.05$ (95 percent)	Significant
<u>&lt;</u> 0.5	Low correlation	p > 0.05 (95 percent)	Not significant
<u>&lt;</u> 0.2	Very low correlation	$p \le 0.1 (90 \text{ percent})$	Considerable

Correlation analysis examines trends in the impact of Covid-19 on economic and social factors. In standard statistical rules, there are three correlation assumptions, namely Spearman, Kendall, and Pearson (Chok, 2008; Bolboacă and Jäntschi, 2006; Bishara and Hittner, 2012; May and Looney, 2022). After the data was tabulated, the statistical software was programmed via IBM-SPSS v.25. The sophistication of this tool not only concludes positive (+) and negative (-) coefficients, but also combines probabilities. The absolute values of the correlations and their associated p-values are described in *Table 1*.

Wonu et al. (2021), Kozak (2008), and Schober et al. (2018) claim that correlation analysis can solve the hypothesis. In the proof, the correlation tests the partial effect between variables with tolerances above or below the tolerance limit. It is worth testing other hypotheses. If the probability is less than alpha, then  $H_1$  is accepted and  $H_0$  is rejected and vice versa.

 $H_1: r \neq 0$ There is a significant correlation between x and y.

*H*<sub>0</sub>: r = 0

*There is no significant correlation between x and y.* 

## Hypothesis development

Research design to set detailed parameters in variables (see *Table 2*). Collectively, the hypothesis offering frames the connections between variables whose outcome is the hypothesis accepted or otherwise.

 Table 2. Variable specifications and range of hypotheses (Source: compiled from Databoks, 2022; Central Bureau of Statistics, 2022; Kemenenterian Hukum dan HAM Republik

 Indonesia, 2022
 .

 Variables and
 Scope

 Unit
 Hypotheses and expected markers

Comment [i-[11]: Typo: Kementerian

symbols			
Covid-19 (X)	Annual	Incidence	
	positive/confirmed		
	cases		
Spending per Per	Household	Rp (IDR)	<u>H<sub>1</sub>: The higher the Covid-19 case,</u>
capita spending	consumption		the lower the per capita spending.
(Y1)			
Well-being (Y2)	Human happiness	Index	H <sub>2</sub> : The higher the Covid-19 case,
			the lower the well-being.
Unemployment	Conjuncture	Percent	H <sub>3</sub> : The higher the Covid-19 case,
(Y3)	unemployment		the stronger the unemployment.
Poverty (Y4)	Relative poverty	Percent	<u>H<sub>4</sub>: The higher the Covid-19 case,</u>
			the stronger poverty.
Labor productivity	Value added workforce	\$ (USD) per	<u><math>H_5</math>: The higher the Covid-19 case</u> ,
(Y5)		hour	the lower the labor productivity.
Migration (Y6)	Groups that move	Person	H <sub>6</sub> : The higher the Covid-19 case,
	abroad looking for		the lower the migration.
	formal and informal		
	jobs		
Mortality (Y7)	Died due to Covid-19	Person	H <sub>7</sub> : The higher the Covid-19 case,
			the stronger the mortality.
Domestic violence	Psychological and	Case	H <sub>8</sub> : The higher the Covid-19 cases,
(Y8)	physical violence in the		the stronger the domestic violence.
	household		
Sexual harassment	Sexual acts that	Case	H <sub>9</sub> : The higher the Covid-19 case,
(Y9)	can happen and not		the stronger the sexual harassment.
	wanted by anyone and		
	anywhere		

The operationalization of the above variables decorates nine hypothetical targets based on the premise. There is a similarity in size among the six variables. The first is unemployment and poverty (percentage). Second, between migration and mortality (person). Third, domestic violence and sexual harassment (cases). However, Covid-19, per capita spending, well-being, and labor productivity have diverged.

## Results

# Descriptive statistics

*Table 3* accommodates the recapitulation of national data from 34 provinces. Descriptive statistical data informs that there is a different slope of the ten variables. The gap in per capita spending with unemployment referring to the minimum, maximum, mean, and standard deviation (SD) scores looks fantastic. Regarding the acquisition of the largest value from the minimum, it reached 4,170,994.71, while the smallest was 4.94. From the maximum version, the dominant one is 4,822,910.12 and 6.26 is the smallest. Looking at the mean, the highest is up to 4,529,290.74, then the lowest is at 5.56. During 2020-2023, SD scores were striking, with the largest being 273,542.79, but 0.59 being the lowest.

 Table 3. Descriptive statistical unit (Source: SPSS v. 25 compiled from Databoks, 2022; Central Bureau of Statistics, 2022).

Comment [i-[12]: Infection rate or confirmed case (?)

Comment [i-[13]: Per capita spending

**Comment [i-[14]:** SPSS v.25 is not the source of the content of this table. It is a software you used to do the statistical analysis.

Var.	Min.	Max.	Mean	SD	Ν
Х	743,198	6,057,142	3,049,478.50	2,549,687	1,360
y1	4,170,994.71	4,822,910.12	4,529,290.74	273,542.79	1,360
y2	68.28	73.98	71.11	2.35	1,360
y3	4.94	6.26	5.56	.59	1,360
y4	8.50	10.19	9.67	.79	1,360
y5	12.10	15.04	13.75	1.40	1,360
уб	234,451	512,168	363,056.75	130,208.54	1,360
у7	22,138	156,553	118,303.75	64,311.97	1,360
y8	299,911	431,471	358,360	55,326.73	1,360
y9	5,237	6,872	5,720	778.18	1,360

## Correlation analysis

Starting from the Spearman's rho correlation, the use of this statistical method is to test allegations about the existence of a relationship between variables in an ordinal database (ranking) or on a ratio scale without meeting the assumption of normality (Hauke and Kossowski, 2011; Bobera et al., 2016). Within four periods, *Table 4* depicts the negative and positive correlations or in very low to very high items. At this moment, it is clear that the relationship from Covid-19 to labor productivity, migration, domestic violence, and sexual harassment is negative (C = -0.600, C = -0.400, C = -0.800, and C = -0.800). The rest, if Covid-19 cases increase, per capita spending, well-being, unemployment, and poverty will actually increase. The partial coefficients of the five (C = 0.400, C = 0.400, C = 0.400, C = 0.600, and C = 0.800), are positive correlations. Five hypotheses are accepted and the remaining four are rejected. The probability level refers to 1 percent, so there is a two-way significance of per capita spending on well-being (p = 0.000), then per capita spending and well-being on migration (p = 0.000), and poverty on labor productivity (p = 0.000). Interestingly, the correlation from Covid-19 to mortality and vice versa as the highest coefficient is up to 80 percent.

Var.	x	y1	y2	y3	y4	y5	y6	y7	y8	y9
х	1	.400	.400	.400	.600	600	400	.800	800	800
		(.600)	(.600)	(.600)	(.400)	(.400)	(.600)	(.200)	(.200)	(.200)
y1	.400	1	1**	.600	400	.400	-1**	.800	200	.200
	(.600)		(.000)	(.400)	(.600)	(.600)	(.000)	(.200)	(.800)	(.800)
y2	.400	1**	1	.600	400	.400	-1**	.800	200	.200
	(.600)	(.000)		(.400)	(.600)	(.600)	(.000)	(.200)	(.800)	(.800)
y3	.400	.600	.600	1	400	.400	600	.800	.200	200
	(.600)	(.400)	(.400)		(.600)	(.600)	(.400)	(.200)	(.800)	(.800)
y4	.600	400	400	400	1	-1**	.400	.000	800	800
	(.400)	(.600)	(.600)	(.600)		(.000)	(.600)	(1.000)	(.200)	(.200)
y5	600	.400	.400	.400	-1**	1	400	.000	.800	.800
	(.400)	(.600)	(.600)	(.600)	(.000)		(.600)	(1.000)	(.200)	(.200)
уб	400	-1**	-1**	600	.400	400	1	800	.200	200
	(.600)	(.000)	(.000)	(.400)	(.600)	(.600)		(.200)	(.800)	(.800)
y7	.800	.800	.800	.800	.000	.000	1	1	400	400
	(.200)	(.200)	(.200)	(.200)	(1.000)	(1.000)	(.000)		(.600)	(.600)
y8	800	200	200	.200	800	.800	400	400	1	.600
	(.200)	(.800)	(.800)	(.800)	(.200)	(.200)	(.600)	(.600)		(.400)
y9	800	.200	.200	200	800	.800	400	400	.600	1
	(.200)	(.800)	(.800)	(.800)	(.200)	(.200)	(.600)	(.600)	(.400)	

**Table 4.** Spearman's Test (Source: SPSS v.25).

Obs.	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360
Notation: **p < 0.01										

The next session examines the correlation of Kendall's tau ( $\tau$ ). This correlation is the group of non-parametric statistical tests (Puka, 2011). In the presentation process, there are no assumptions that require observations or samples to be normally distributed. In addition, there is also no provision in which a construct formed from a variable must be linear (Dehling et al., 2017). Ho et al. (2021) argue that the use of research data is not normal (not linear). This is, of course, quite different from parametric statistical tests because there are special provisions regarding data that have a linear and normal distribution.

Curiosity on partial and two-way effects in Kendall's test is presented in *Table 5*. For the correlation coefficient, the correlation of the independent variable's relationship to the dependent variable seems too far away. There is a mix of negative to positive coefficient points. The biggest one is the correlation between Covid-19 and mortality with the acquisition of 0.667 (66.7 percent), so it is classified as a medium correlation. The rest, more to the very low correlation, where there is reaching -0.667. Practically, the correction level starts from  $\leq 0.2 - \leq 0.7$  or in the very low to medium classification. Here, it explains that the increase in Covid-19 so far has increased per capita spending, well-being, unemployment, poverty, and mortality. Then, the Covid-19 tragedy in Indonesia has actually reduced labor productivity, migration, domestic violence, and sexual harassment. In other words, hypotheses 1, 2, 8, and 9 are rejected. However, there are no significant obstacles for hypotheses 3, 4, 5, 6, and 7.

Var.	Х	y1	y2	y3	y4	y5	y6	y7	y8	y9
Х	1	.333	.333	.333	.333	333	333	.667	667	667
		(.497)	(.497)	(.497)	(.497)	(.497)	(.497)	(.174)	(.174)	(.174)
y1	.333	1	1*	.333	333	.333	-1**	.667	.000	.000
	(.497)		(.000)	(.497)	(.497)	(.497)	(.000)	(.174)	(1.000)	(1.000)
y2	.333	1**	1	.333	333	.333	-1**	.667	.000	.000
	(.497)	(.000)		(.497)	(.497)	(.497)	(.000)	(.174)	(1.000)	(1.000)
y3	.333	.333	.333	1	333	.333	333	.667	.000	.000
	(.497)	(.497)	(.497)		(.497)	(.497)	(.497)	(.174)	(1.000)	(1.000)
y4	.333	333	333	333	1	-1**	.333	.000	667	667
	(.497)	(.497)	(.497)	(.497)		(.000)	(.497)	(1.000)	(.174)	(.174)
y5	333	.333	.333	.333	-1**	1	333	.000	.667	.667
	(.497)	(.497)	(.497)	(.497)	(.000)		(.497)	(1.000)	(.174)	(.174)
уб	333	-1**	-1**	333	.333	333	1	667	.000	.000
	(.497)	(.000)	(.000)	(.497)	(.497)	(.497)		(.174)	(1.000)	(1.000)
y7	.667	.667	.667	.667	.000	.000	667	1	333	333
	(.174)	(.174)	(.174)	(.174)	(1.000)	(1.000)	(.174)		(.497)	(.497)
y8	667	.000	.000	.000	667	.667	.000	333	1	.333
	(.174)	(1.000)	(1.000)	(1.000)	(.174)	(.174)	(1.000)	(.497)		(.497)
y9	667	.000	.000	.000	667	.667	.000	333	.333	1
	(.174)	(.1000)	(1.000)	(1.000)	(.174)	(.174)	(1.000)	(.497)	(.497)	
Obs.	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360	1,360
Notation	*** < 0.04	***** < 0	01							

Table 5. Uji-Kendall's Test (Source: SPSS v.25).

Notation:  $*p \le 0.05, **p \le 0.01$ 

In both partial probabilities ( $p \le 0.05$  and  $p \le 0.01$ ), there is a significant effect of per capita spending on well-being (p = 0.000). On the other hand, migration also affects per capita spending and well-being (p = 0.000), and poverty with labor productivity (p = 0.000).

According to Sinnema and Robinson (2012), the Pearson correlation is addressed to the strength of the direction and calculates the linearity of the two variable relationships. The Pearson correlation measure examines the change from one predictor variable to another, with the main aim being in the same direction or in the opposite direction.

Var.	х	y1	y2	y3	y4	y5	y6	y7	y8	y9
Х	1	.245	.093	.352	.646	822	280	.623	731	629
		(.755)	(.907)	(.648)	(.354)	(.178)	(.720)	(.377)	(.269)	(.371)
y1	.245	1	.988*	.580	572	.001	950	.886	546	.596
•	(.755)		(.012)	(.420)	(.428)	(.999)	(.050)	(.144)	(.454)	(.404)
y2	.093	.988*	1	.534	689	.128	929	.812	449	.711
-	(.907)	(.012)		(.466)	(.311)	(.872)	(.071)	(.188)	(.551)	(.289)
у3	.352	.580	.534	1	257	.233	805	.447	004	.237
-	(.648)	(.420)	(.466)		(.743)	(.767)	(.195)	(.553)	(.996)	(.763)
y4	.646	572	689	257	1	756	.543	141	259	999**
-	(.354)	(.428)	(.311)	(.743)		(.244)	(.457)	(.859)	(.741)	(.001)
y5	822	.001	.128	.233	756	1	123	460	.823	.721
	(.178)	(.999)	(.872)	(.767)	(.244)		(.877)	(.540)	(.177)	(.279)
уб	280	950	929	805	.543	123	1	800	.373	522
-	(.720)	(.050)	(.071)	(.195)	(.457)	(.877)		(.200)	(.627)	(.448)
у7	.623	.886	.812	.447	141	460	800	1	855	.177
-	(.377)	(.114)	(.188)	(.553)	(.859)	(.540)	(.200)		(.145)	(.823)
y8	731	546	449	004	259	.823	.373	855	1	.213
	(.269)	(.454)	(.551)	(.996)	(.741)	(.177)	(.627)	(.145)		(.787)
y9	629	.596	.711	.237	999**	.721	552	.177	.213	1
	(.371)	(.404)	(.289)	(.763)	(.001)	(.279)	(.448)	(.823)	(.787)	
Obs.	1.360	1.360	1.360	1.360	1.360	1.360	1.360	1.360	1.360	1.360

Table 6. Uji Pearson Test (Source: SPSS v.25)

Notation:  $*p \le 0.05, **p \le 0.01$ 

Broadly speaking, *Table 6* captures the opposite frequencies of the four relationships and the five relationships that are in line with the proposed hypothesis. Between 2020-2023, the level of causality proves that when Covid-19 rises, it will strengthen per capita spending (C = 0.245), well-being (C = 0.093), unemployment (C = 0.352), poverty (C = 0.646), and mortality (C =0.623). The increase in Covid-19 cases reduces labor productivity (C = -0.822), migration (C = -0.280), domestic violence (C = -0.731), and sexual harassment (C = -0.629). The highest determination when compared to other relationships is Covid-19 to poverty at 64.6 percent. At the level of p-values (5 percent), two-way significance occurs between per capita spending and well-being ( $p = 0.012 \le 0.05$ ) and a level of 1 percent or not exceeding the 0.01 limit is poverty against sexual harassment ( $p = 0.001 \le 0.01$ ).

# Discussion

The soaring number of Covid-19 infections in Indonesia during the last three periods was because of incomplete vaccination doses, lack of population interest in vaccine programs, government socialization that was not balanced with background knowledge, uneven infrastructure, homecoming flows during religious celebrations, and ideological heritage that clashes with the benefits of vaccines with individual beliefs. The government is waiting for the right time to campaign for a 'new normal' if that point of view is slowly eliminated. In turn, the struggle and holding on for a while is 'hibernation' it is not impossible that it will shine like other countries. This is not the end of everything. Moreover, Indonesia hopes that the Covid-19 chain will end or

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be broken by 2023. Closing access with a top line is not a logical solution to stopping the Covid-19 cluster as it was in early 2020, but an adaptive distribution that combines coordination and protection on all fronts, in harmony with restoring healthy living traditions.

The plurality of historical backgrounds, traditions, cultures, ethnicities, and races of the population in Indonesia in each region unites to fight Covid-19. Even though they live and are scattered on separate islands due to the sizeable area of Indonesia, this is not an excuse and instead becomes a geographical advantage that blocks the transmission route of the pandemic (Susanto et al., 2020). Here, the Indonesian government is not too bothered about limiting the mobility of the population. This position clearly benefits Indonesia, However, the vital problem is the level of density that accumulates in 2-3 areas, which are indeed the concentration of infection prevention. The predicate of Indonesia as one nation that failed to close access to the transmission of Covid-19 is an antithesis that hurts the field of epidemiology (Rozigin et al., 2021). Compared to neighboring areas such as Singapore in Southeast Asia, which have a minor population, they have made achievements because they make quick and responsive decisions. Therefore, Indonesia's superior climate and geographical composition have been wasted and have not hampered this virus. At the world level, performing the Indonesian government's policies is the 4<sup>th</sup> worst in solving the Covid-19 problem. Unfortunately, the government's ambiguous steps to comprehensively track Covid-19 do not represent a transparent framework (Ayuningtyas et al., 2021).

Recent studies that highlight geographical opportunities and weaknesses from demographic pressures in the face of the Covid-19 pandemic emergency support the scientific facts above. Covid-19 threatens to lose from this crisis, undermining the long-term social health insurance system, accumulating in social financing (Sparrow et al., 2020). Economic motives to dampen structural changes that are oriented it oriented to the strength of solidarity from the layers of society to contemporary ideas (Abdi et al., 2021). A transferable approach to an island-based country. Social responsibility makes people aware of prioritizing social actions (Sundawa et al., 2021). This truth became a 'topic of conversation' around the world because Indonesia changed the mode, which was originally a large-scale lockdown with full control of the central government, now returned to local governments (city – district – province).



Figure 2. Lockdown focus in Indonesia (*Source:* developed from Sevindik et al., 2021). Blocking zone (Source: The Harian Jogja, 2020).

However, the hard work of the Indonesian government needs to be appreciated. They have operated lockdown policies that represent a wider audience to various points. Fifty border gates are temporarily closed. The inflow and access to outside the area from the end of March 2020 to the end of August 2020, especially land transportation, is closed with a movable concrete barrier (MBC). To suppress the rate of development of new variants such as Beta, Delta, and Alpha, the government made an anatomy and locked the distribution of transmission starting from the center of the capital (Jakarta). The mapping of coherence to cover and limit the

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movement of the population extended not only to big cities but also to villages or villages (see *Fig. 2*). The special areas 'circled in red' are zones, the 'little red circles' are buffer zones or boundaries, and the 'non-red' ones are designated as separate zones.

The seriousness of the government in risking the way forward cannot be immediately felt. For a short period, pathology and social intervention were implemented through quarantine and psychotherapy courses. Responding to economic difficulties, the government willingly set policies on food subsidies, social help, discounts on primary needs, and online pre-employment training to control hunger.

Following the example of China, which made brilliant improvements to emerge from the Covid-19 invasion. Launching from The Worldometer (2022), the country that accounts for 18.47 percent of the global population and the largest in the world, takes preventive initiatives by neutralizing bad news in the media about the origins of the Covid-19 disease which is thought to be deadly, intentionally created and created as a weapon biological mass killers, the existence of a global conspiracy, smoothing the third world war, deciding international trade competition, and other misinformation (Zhao et al., 2021; AlTakarli, 2020; Keni et al., 2020). If public trust is hampered, it will disrupt psychology and trigger simultaneous anger (Yu et al., 2021).

## Conclusions

The intensity of COVID-19 as a barrier to its tested socioeconomic in this study. Three structures of correlation analysis: Pearson, Kendall's, and Spearman's conclude two different findings. From the Pearson method, it is confirmed if the four hypotheses are rejected, while the five hypotheses are accepted. Uniquely, when the COVID-19 pandemic hit Indonesia, spending per capita increased. After that, unemployment and poverty levels actually decreased in the 2020-2022 period. Not much different, referring to two different approaches which show that labor productivity and poverty increased by *33.3%* (Kendall's) and *50%* (Spearman's) after the pandemic. Meanwhile, in the Pearson correlation, it is exactly the opposite, where both aspects decrease by *2.4%* (poverty) and *10.7%* (labor productivity). Therefore, five hypotheses were accepted.

This finding becomes a theoretical contribution for stakeholders. Global pandemic phenomena, such as COVID 19, have caused socio economics to be eroded increasingly (Nicola et al., 2020). People seem unconcerned and many of them lose emotional control (Hsiang et al., 2020; Yaya et al., 2020). According to Crocker et al. (2017), selfishness grows when individuals take the opportunity of existing conditions for the benefit of themselves or their group without thinking about the impact on others. Such as the case of social panic, when COVID 19 was present, where many individuals were hoarding masks and hand sanitizer. In the end, it is relevant to material and non-material losses for various groups.

The aim of this paper is to study the socio-economic impact of the brutality of Covid-19 in Indonesia. The analysis determined by the three approaches concludes that a pandemic that is developing positively affects per capita spending, well-being, unemployment, poverty, and mortality. Other results also confirm that the growth of Covid-19 has negatively affected labor productivity, migration, domestic violence, and sexual harassment.

Learning from Indonesia, recommendations to the government to be careful and reconsider a fair middle ground in combining economic networks and health protocols. Must prioritize one of the two in lightening the multi-layered burden of all parties. The options chosen are expected to make it easier for elements of society. Innovative and creative programs are **Comment [A17]:** The message of this sentence is not clear. Try to rewrite the sentence.

**Comment [A18]:** Restate again, which hypothesis are accepted, and which hypothesis are rejected.

**Comment [A19]:** Theoretical contribution should be the contribution to the body of knowledge, not practical contribution to stakeholders. Does this research have contribution theoretically? State that clearly. worth fighting for. Without ignoring humanity, partnering outside government institutions is effective. There is no reason to abandon public demands only for the sake of the economic aspect, but government competence must also support the social aspect.

Because it limited the target data for 2020-2023, other researchers can absorb the shortcomings of the methodology by adding more mature instruments, such as variables related to complex social events and economic phenomena. Further work has implications for academic development. Practical contributions are concerned with improving welfare levels and taking the initiative toward incidental vulnerabilities.

#### Acknowledgements

We present this paper to stakeholders. All authors handle the division of tasks, writing, and data collection. The authors declare that there is no conflict of interest. We also appreciate the peer-review and critics by reviewers at Geographica Pannonica.

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