



The interplay of corruption, human capital, and unemployment in Indonesia: Implications for economic development

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Abstract

This study was conducted by examining the interrelationships between Corruption, Human Resources, and Unemployment in Indonesia. We use data sourced from the World Bank and Transparency International with the period used from 1996 to 2021. This study aims to examine the relationship that exists between Corruption, Human Resources, and Unemployment so as to provide information in understanding the benefits of investing towards developing Human Resources. in order to improve the quality of society. We use Vector error Correction Model (VECM) analysis with the research variables used are Corruption, Human Capital, and Unemployment. Our conclusions indicate that corruption makes a considerable contribution to the growth and progress of the nation and its people. In light of this, we strongly advise the Indonesian government to take decisive action to tackle the issue of corruption head-on. This can be achieved through a combination of measures, such as the implementation of stricter regulations and penalties for corrupt activities, the promotion of transparency and accountability in government operations, and a significant investment in human capital development programs. By addressing the root causes of the problem, the government can create a pathway towards sustainable positive change for the nation. Furthermore, our research highlights the importance of addressing corruption With the aim of establishing a more advantageous atmosphere for the expansion of the economy and progress. It is well established that corruption can stifle innovation, undermine the rule of law, and reduce investment. Thus, it is imperative that the government take a proactive approach to combating corruption in order to ensure that the country remains on a trajectory of progress and prosperity. In conclusion, our research provides clear evidence of the negative impact of corruption on unemployment and human capital in Indonesia. By taking decisive action to address this issue, the government can create a more favourable environment for economic growth and development while also improving the lives of its citizens. It is our desire that this study will be a useful tool for decision-makers. in their efforts to create a brighter future for Indonesia.

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JEL Classification

I21; J24; J64; J65; K42; K49

Keywords

Corruption; Human capital; Unemployment

Introduction

The crime of corruption is a crime that can be categorized as a crime of gross human rights violations because the impact of this crime can disrupt the country's economy and also hinder the country's development and even this crime can also disrupt the world economy (Sviatun et al., 2021). Combating corruption is a crucial objective for governments to eliminate corruption, collaboration, and favouritism (Ismail et al., 2020). Corruption is a monstrous and well-structured offence that demands exceptional endeavours to put an end to it. Besides being a nationwide priority, the elimination of corruption is also a worldwide concern (Wang, 2020).

The presence of an anti-corruption organization holds immense strategic and political significance for a country's government (Masud et al., 2022). Presently, corruption is not only a domestic challenge but also a global one. For nations undergoing development, achieving a reduction in corruption is a triumph in its own right. This will have an impact on the flow of foreign investment into the country (Mohammed et al., 2022). Countries with high levels of corruption will certainly lose their competitiveness in seizing foreign capital, which is needed by developing countries (Jazuli et al., 2022). Developed countries and international donor agencies are very concerned about corruption ratings issued by international survey institutions such as Transparency International and PERC (Alfaro, 2022).

Corruption is a social parasite which destroys the structure of government and becomes an obstacle to the main roads of governance and development (Peake and Forsyth, 2022). The Corruption Eradication Effort is one of the efforts to uphold the Anti-Corruption motto in the country (Muzaffar, 2022). In an effort to eradicate public corruption, the government and all of its institutions must play an active role in upholding an anti-corruption culture by providing early knowledge of the dangers and negative impacts of corruption. With knowledge of moral values and principles of corruption, it is hoped that society will not fall into corrupt behaviour (Firman et al., 2021). Corruption as a method of proxy war is an attempt to influence domestic policy through legal or illegal approaches to legal or private entities holding public authority or related to public interests (Marks, 2019). The police, as one of the agencies that are supposed to eradicate corruption, is required to optimize the eradication of corruption through its function in the field of prevention and prosecution or law enforcement. So that a reformulation is needed in eradicating corruption, especially from the perspective of the police handling corruption as a threat of proxy wars (Yanto et al., 2019).

Corruption is an act carried out with the intention of obtaining profit that is contrary to the obligations and correctness of the position (Kartika, 2020). Anti-corruption education is a lifelong education which is very important to be instilled from an early age (Zulqarnain et al., 2022). The calibre of the human workforce is the most crucial asset in nation-building (Onday, 2019). Cultivating character is one of the prerequisites for successful human resource development as a campus that creates the environment for the nation's next generation. It is also very concerned about anti-corruption education among students (Kramar, 2022). Anti-corruption education by developing the formation of anti-corruption characters is, in principle, a big challenge from the current conditions of corruption, which are so large, so the formation of this anti-corruption character must continue to be pursued as a form of dealing with corruption in the future (Sotola and Pillay, 2022).

Corruption is a bad act that is carried out not only by bureaucratic apparatus and people who are competent with the bureaucracy but also come from ordinary people, figures, religious leaders and officials (Yusubboevich, 2022). The causes of corruption are very diverse, and some are from internal and external factors as well. Corruption is classified as a destructive crime, not only for state finances and the country's economic potential but also has devastated the pillars of social culture, morals, politics, legal order, and national security looks like it still needs a lot of effort. Because the crime of corruption is an extraordinary crime that is different from ordinary criminal crimes, the efforts that must be made require an integrated and extraordinary system (Suramin, 2021). The battle against corruption cannot solely rely on enforcement actions carried out by law enforcement agencies. It is equally crucial to participate in constructing an anti-corruption culture within society as a preventative measure in the quest to eliminate corruption (de La Feria, 2020).

The criminal act of corruption ultimately has implications for the low quality of education not only at the graduation level of students but also in the field of facilities and infrastructure, acts against the law, abuses power, opportunities, or facilities, enriches oneself, other people or corporations, and damages finances public or the national economy (Mandagie and Damayanti, 2023). Most corruption cases often involve individuals who hold positions of authority in the government, and events can range in complexity (Levi and Soudijn, 2020). Corruption or theft is a practice carried out by people such as public officials, state apparatus, politicians, and business people, taking advantage of the trust given to brands to gain unilateral benefits (Bakken and Wang, 2021).

Given that corruption has a substantial impact on the human workforce, it is essential to clearly define the various control factors to thoroughly comprehend and tackle its impact, corruption control plays a big role in the human capital component. Indicators of institutional quality (corruption) may also be used to determine human capital (Mtiraoui, 2021). Crucial to understanding how human work capacities are formed, passed down through generations, and used effectively in order to achieve Social and financial prosperity (Huang et al., 2022). In the current context of global interconnectedness and total informationization, a person's knowledge, creativity, and intellectual attributes are brought to the forefront (Widarni and Bawono, 2023). Economics is now more focused on the challenge of forming a new generation of human resources that possess higher quality as a form of human capital rather than just utilizing labour resources also there is Human development is a global problem that affects practically all nations (Bawono et al., 2023). Because the poor quality of human capital can impede the economic growth of society and prevent it from achieving prosperity, the issue of human development becomes one that needs to be tackled in a sustainable way (Triurina et al., 2022).

Stylized truths regarding human capital since Becker (1962). First, As the world becomes more globalized and information-driven, the importance of a person's knowledge, creativity, and intellectual qualities becomes increasingly evident (Deming, 2022). The concept of "human capital market" is considered a vital aspect of the labour market and a cornerstone in driving economic growth through innovation, and the Global Index of Innovation are evaluated as the notion of "human capital" is defined (Afonasova et al., 2019). To foster an innovative economy, a model was proposed to regulate the market for human capital. The significance of enhancing human capital for retaining skilled workers and attracting new talent. Investment in human resources is also shown to have a Having a positive effect on efficiency, organizational atmosphere, and employee contentment (Abdurakhmanova et al. (2020).

Human capital plays a crucial role in a country's economic growth and development. It encompasses individuals' knowledge, skills, and experience that can increase productivity and economic growth. The study also emphasizes that human capital is not confined to formal education and can include on-the-job training, apprenticeships, and other types of experiential learning (Akkemik et al., 2020).

Research has established a positive correlation between human capital and economic growth. Countries that invest in education and training tend to experience higher levels of economic growth, with human capital being a key determinant. As such, policymakers should prioritize investing in education and training to promote human capital development (Mankiw et al., 2018). However, despite the importance of human capital, many countries face significant challenges in developing and sustaining a skilled workforce. These include inadequate funding for education and training, poor education and training quality, and a mismatch between skills and labour market demand (Ngoc Su et al., 2021).

Governments must implement policies that prioritize improving the quality of education and training, enhancing labour market flexibility, and promoting lifelong learning to address the issue of inadequate human capital. Human capital is an essential aspect of a country's economic growth and development. Although challenges exist in developing and maintaining a skilled workforce, policymakers must prioritize investments in education and training and enact policies that tackle the underlying causes of inadequate human capital (Hill, 2019). The identification of crucial risk groups in the human capital reproduction process in a particular region. The study also underlined the significance of incorporating media technologies in human capital to promote the formation of new knowledge and to examine people's involvement with teasers and book trailers (Zhilina et al., 2020).

Public policy that subsidizes training's marginal costs in an effort to promote employment and the investment of human capital. The subsidy not only promotes training but also encourages people to pick up new skills on the job,

thus enhancing their on-the-job learning. Reduction in training's marginal costs would raise the proportion of trained workers, the rate of learning among workers, and the employment rate. Training subsidy has less of an impact in a rigid labour market than it does in a flexible one. This is mostly due to the fact that employees spend more time unemployed in a market with weak labour flows (Naval et al., 2020).

Disruptive technical advancements should be made for the benefit of both people and the environment. The Industry 4.0 paradigm suggests departing from conventional thinking and behaviour. Human labour will be significantly impacted by such changes. Therefore, ongoing work with holistic perspectives is required to facilitate the shift from a traditional to a new way of thinking and operating (Flores et al., 2020). The word "unemployment" refers to those who do not work at all, are seeking employment, work fewer than two days per week, or are actively seeking employment (Ranchhod and Daniels, 2021). Well-established risk factor for suicide is unemployment. The results of several studies point to the importance of government policy in mediating the association between unemployment and suicide (Shand et al., 2020).

Unemployment has been a long-standing concern for researchers and policymakers worldwide. The global unemployment rate stands at approximately 5%, with noticeable regional variations. The research also reveals that developing nations have higher unemployment rates due to the majority of the workforce being in low-skilled occupations, coupled with slow economic growth (Gamberoni et al., 2019). Unemployment not only impedes a country's economic growth, but it also has significant social consequences. Long-term unemployment can lead to physical and mental health issues, social exclusion, and an increase in crime rates. Furthermore, unemployment can raise poverty levels, leading to the aggravation of social and economic challenges encountered by a country (Kacar and Yildirim, 2020).

Unemployment is influenced by a multitude of factors, such as technological advancements, inadequate education and training, and an uneven distribution of employment opportunities. These factors play a pivotal role in the high unemployment rates witnessed in several nations. To mitigate this issue, it is essential for governments to formulate policies that prioritize job creation, education and training, and labour market flexibility. It is imperative for policymakers and researchers to recognize that unemployment is a global problem that demands their immediate attention (Mbunge et al., 2021). Although the causes of unemployment are intricate and diverse, the implementation of effective policies to tackle the issue is of paramount importance. Hence, policymakers and researchers must collaborate to devise policies that are based on research and promote job creation, improve education and training, and tackle the underlying causes of unemployment (Ali and Naeem, 2019).

In Indonesia, corruption, unemployment, and human capital are crucial concerns that significantly affect the country's development and welfare (Prasetyo and Kistanti, 2020). Corruption is the misuse of public power for personal gain, which adversely affects the state, society, and economy (Desta, 2019). Corruption impedes economic growth, decreases investment, erodes public trust in the government, and hampers the allocation of public budgets for infrastructure development, healthcare, education, and public services (Mlambo and Masuku, 2020). Corruption is a threat to the nation because of its damaging impact on the system and people's lives (Pertiwi, 2022).

The high unemployment rate is a serious challenge for Indonesia. Unemployment has a negative impact on the ability of individuals and society to achieve economic prosperity. The impacts include decreased income, poverty, social inequality, and conflict (Yunitasari et al., 2021). Unemployment can also cause long-term social and economic losses, as unemployed people have difficulty acquiring the skills and work experience necessary to enter the labor market. Unemployment also reduces individual contribution to economic growth and national development (Zhang and Banerjee, 2021).

Human capital refers to the knowledge, skills and health of a country's human resources. Development of human capital is very important because it is related to labor productivity, innovation, and economic growth (Baharin et al., 2020). If individuals have good access to quality education, skills training, and health services, they will have better opportunities to improve their quality of life, increase productivity, and contribute to economic development. In addition, quality human resources are also needed to advance the industrial and technological sectors, as well as increase a country's global competitiveness (Tzenios, 2019). By addressing issues of corruption, unemployment, and building strong human capital, Indonesia can achieve sustainable economic growth, reduce poverty, improve people's

quality of life, and strengthen its position at the global level (Lestari and Rahmawati, 2021). Governments and communities need to work together to address these problems through institutional reforms, strong law enforcement, investments in education and training, and policies that support inclusive economic development (Tanesab, 2020).

The increasing number of corruption cases in Indonesia has raised awareness of the damaging effects of corruption on economic development; as stated in Alim (2022) research, in Indonesia, the corruption perception index has a high correlation with macroeconomic variables such as tax revenues and government spending. Tax revenue and the corruption perception index have a long-term and short-term relationship. The tax revenue variable has a significant positive effect on the corruption perception index. Accordingly, government spending also has a significant positive effect on the corruption perception index.

One study research that examines the effect of corruption on economic growth in Indonesia with samples from several provinces and takes a nonlinear approach to determine the threshold for corruption concludes the same result that the impact of corruption shows a deteriorating growth effect for provinces with corruption levels below the threshold of 1765 points and the damaging effects of corruption appear to be stronger in provinces with above-threshold levels of corruption. Another finding is that most provinces struggle with corruption, although they manage to keep corruption levels below the threshold over time. Several provinces, such as Riau and West Java, have experienced severe corruption problems and have been in the high corruption bracket for the last three years. However, several provinces, such as Lampung and North Sulawesi, have succeeded in reducing their level of corruption and switching to low-corruption groups (Alfada, 2019). This study aims to examine the relationship that exists between Corruption, Human Resources, and Unemployment so as to provide information in understanding the benefits of investing towards developing Human Resources. in order to improve the quality of society.

Literature review

Corruption can be significantly reduced the influence of e-government. In addition, support from effective laws and open government will also help reduce corruption (Park and Kim, 2020). Corruption plays a role in hindering economic growth. This indicates that corruption triggers losses received by the state. Another factor is weak law enforcement which is not effective in reducing corruption. Human capital will have a positive impact on economic development, so improving the quality of education and health will become an alternative for decision-makers in improving the economy and reducing corruption (Aqeel et al., 2022).

Human resource development will have a negative impact on corruption. On the other hand, income inequality will play the opposite role in positively influencing corruption. Thus, corruption and income inequality are problems for countries, especially developing countries, in developing human resources (Khan and Naeem, 2020). In Pakistan, human capital and corruption together have a positive influence on crime rates. Human capital has a positive influence due to reduced employment opportunities, resulting in an increase in unemployment. Corruption has a positive effect in the long term (Qamar and Safdar, 2021).

Unemployment resistance can be predicted by technological resistance. Through technological resistance, it can be seen that there is an important interaction effect between technological resistance and human capital (Cappelli et al., 2021). The magnitude of the variation in convergence to the natural rate from country to country has been revealed by the adoption of a new index that assesses the difference between the unemployment rate and its natural rate (Le Page, 2022). Considering the unemployment rate, corruption has an impact on food security, so there is a need for increased innovation to support service delivery and community governance (Önder, 2021). On the other hand, corruption and unemployment together have a negative effect on poverty in Indonesia. So that every increase in the corruption index through the CPI will reduce the poverty rate, as well as an increase in unemployment will also reduce the poverty rate. However, corruption and unemployment are also problems that must be resolved by the government (Rizki and Solihati, 2022).

Based on the empirical study above with a discussion of corruption, human capital, and unemployment in Indonesia, the research hypothesis is (H1) Corruption has a significant positive impact on human capital and unemployment, (H2) Human capital has a significant positive impact on corruption and unemployment, and (H3) Unemployment has a positive and significant impact on corruption and human capital.

Research methods

Utilizing secondary data from the World Bank and Transparency International, the model used is to estimate Corruption, Human Resources and Unemployment in Indonesia. A 25-year research study was conducted from 1996 to 2021, and "autoregressive 'vectors'" were used to describe the relationship of one variable to another. We use a multivariate regression approach to analyze the relationship between CRPTN variables as Corruption, HCPT as Human Resources, and UMPY as Unemployment in Indonesia. Variable descriptions are presented in [Table 1](#).

Table 1. An explanation of the variable description that we will use.

Variable	Description	Source	Unit of Analysis
Corruption (CRPTCN)	Data on corruption found within 26 years, from 1996 to 2021, including information on the extent and nature of corruption within Indonesia.	Transparency International	Index
Human Capital (HMNCPTL)	Data on human capital found within 26 years, from 1996 to 2021, including measures of education levels, skills, and experience of the population within Indonesia.	World Bank	Percent
Unemployment (UMPLY)	Data on the number of individuals actively seeking employment but unable to find work in Indonesia taken over 20 years, from 1996 to 2021.	World Bank	Percent

$$CRPTN_t = \beta_0 + \beta_1 HMNCPTL_{t1} + \beta_2 UMPY_{t2} + e_t \text{ fma 1}$$

$$HMNCPTL_t = \beta_0 + \beta_1 CRPTN_{t1} + \beta_2 UMPY_{t2} + e_t \text{ fma 2}$$

$$UMPLY_t = \beta_0 + \beta_1 CRPTN_{t1} + \beta_2 HMNCPTL_{t2} + e_t \text{ fma 2}$$

Information:

CRPTN: Corruption

HMNCPTL: Human Capital

UMPLY: Unemployment

e: erroneous title

t: time sequence

β : degree in terms of causation influence

fma: method

For this study, every regression link is coupled using vector calculations, making each variable simultaneously the independent and dependent variable. We use vector analysis so that every variable change we investigate with 3 formulations. Our first formulation investigates the relationship of Corruption's influence on changes from Human Capital and Unemployment. The second formulation investigates the influence of Human Capital on changes from Corruption and Unemployment. The third formulation investigates the influence of Unemployment on changes in Corruption and Human Capital.

Dickey-definition Fuller's of zero as obtained from PP analysis, and $p=1$ with $\Delta y_t = (\rho - 1)y_{t-1} + ut$ being prepared, when Δ – This is some start attempt, diff operations were used. To "unit root test," In this investigation, the following equation was used:

$$\Delta Y_1 = \alpha_0 + \beta_0 T + \beta_1 Y_{t-1} + \sum_{q=1}^p (i-1)^q \alpha_1 \Delta Y_{t-1} + e_t$$

Caption:

Y are a unit root variables check.

T “linear pattern” variant portrayed, with “various in lag” are Y_{t-1} , 0 was showed as “one formula,” and “t” as “trend’s time” are indicated. The alternative theory (H_0) and alternative unit root test hypotheses include the ones listed below:
 $H_0: \alpha=0$

$H_1: \alpha \neq 0$

We perform data stationarity tests to ensure data is stationary using the unit root test. Then we ensure the optimum lag to choose the best lag in the test. In choosing to use an autoregressive vector, we have to ensure that there are no problems related to cointegration, so we do a cointegration test. After we completed all the testing stages, we performed an analysis using the autoregressive vector model (VAR Model) or Vector error Correction Model (VECM). Next, we confirm the causality relationship using the Granger causality test to present the impulse response between variables, and we present the Impulse Response Function. Lastly, we present the estimation results of the variance decomposition. The decomposition of variance is a statistical analysis used to determine the proportion of the variance of the forecast error in one variable that can be attributed to its own innovation or to innovations in other variables in the system.

Results and discussion

To determine whether a data set we use is good or stationary data, we use several stationarity tests. An analysis is also performed for several possibilities if the data is not truly stationary. [Table 2](#) shows some results from the effort to perform some unit root tests. The unit root test tries to prove whether data has a unit root or not. After performing some transformations, we can rerun the test to ensure that the data is truly stationary.

Table 2. The test of ADF’s Unit Root on CRPTN, HMNCPTL and UMPY data in Indonesia.

Variable	Unit Root	Incorporated in the evaluation formula	Examination of the Augmented Dickey-Fuller Test results	5% Critical Value	Description
Corruption (CRPTN)	Level	Intercept	-0.075132	0.9420	
	First Diff	Intercept	-4.560203	0.0016	Stationary
Human Capital (HMNCPTL)	Level	Intercept	-1.484561	0.5247	
	First Diff	Intercept	-5.122157	0.0004	Stationary
Unemployment (UMPLY)	Level	Intercept	-0.715087	0.8252	
	First Diff	Intercept	-4.475823	0.0018	Stationary

Based on the results of the Augmented Dickey-Fuller (ADF) Unit Root test, it can be seen that each variable has different outcomes based on the unit root that was incorporated into the evaluation formula. The Corruption variable (CRPTN) showed stationarity at first, as indicated by the ADF test statistic of -4.560203 , respectively, which was lower than the 5% critical value of 0.0016 . However, at this level, the ADF test statistic for CRPTN was -0.075132 , which was higher than the 5% critical value of 0.9420 , indicating non-stationarity.

On the other hand, the Human Capital variable (HMNCPTL) showed non-stationarity at the level, with an ADF test statistic of -1.484561 , which was higher than the 5% critical value of 0.5247 . However, the first difference of HMNCPTL showed stationarity, as indicated by the ADF test statistics of -5.122157 , respectively, which were lower than the 5% critical value of 0.0004 .

Similarly, the Unemployment variable (UMPLY) showed non-stationarity at the level, with an ADF test statistic of -0.715087 , which was higher than the 5% critical value of 0.8252 . However, the first of UMPY showed stationarity, as

indicated by the ADF test statistics of -4.475823 , respectively, both of which were lower than the 5% critical value of 0.0018 .

In conclusion, the ADF Unit Root test results show that all three variables, CRPTN, HMNCPTL, and UMPY, are stationary at first. These results suggest that the first of each variable should be used in further analysis. It is recommended to conduct the Optimum Lag test as the next step in the analysis [Table 3](#).

Table 3. The examination of the best Lag from 0 to 4 has been conducted on the data of CRPTN, HMNCPTL and UMPY in Indonesia.

Lag	LogL	LR	FPE	AIC	SC	HQ
0	-81.41317	NA	0.431918	7.673924	7.822703	7.708972
1	-28.04137	87.33567	0.007741	3.640124	4.235238*	3.780315
2	-24.12482	5.340744	0.013001	4.102257	5.143706	4.347591
3	-5.536573	20.27809*	0.006296*	3.230598	4.718383	3.581075*
4	3.972211	7.779914	0.008227	3.184344*	5.118465	3.639965

The results of the Optimum Lag test on the CRPTN, HMNCPTL and UMPY variables showed that there are several indices for determining the ideal number of lags or delays. These indices include LogL, LR, FPE, AIC, SC, and HQ. The conclusion from several indices suggests that the optimal number of lags for the CRPTN, HMNCPTL and UMPY data is 0–4, depending on which index is used to determine it. However, it is usually recommended to use AIC and SC as the main indices in determining the optimal number of lags, as the optimal number of lags changes based on the index used.

The results reveal that Lag 3 exhibits the lowest AIC and FPE values, while Lag 1 exhibits the lowest SC and HQ values. Therefore, we have two possible choices for the optimal lag, which are Lag 1 and Lag 3. It is important to consider other factors, such as the interpretability of the model and the significance of the lag coefficients, when choosing the final optimal lag. Next is the cointegration test, which can be viewed in [Table 4](#).

Table 4. The Cointegration Test of CRPTN, HMNCPTL and UMPY in Indonesia.

H	Eigenvalue	Trace Statistic	0.05 Critical Value	Prob.**
None *	0.644989	31.86195	29.79707	0.0285
At most 1	0.246060	7.007384	15.49471	0.5768
At most 2	0.009486	0.228753	3.841466	0.6324

[Table 4](#) shows the results of the Cointegration Test of CRPTN, HMNCPTL and UMPY in Indonesia. The test is used to determine whether there is a long-run relationship among the variables. The H column represents the hypothesis being tested, where "None" refers to the absence of cointegration, "At most 1" means there is at most one cointegrating equation, and "At most 2" means there are at most two cointegrating equations. The Eigenvalue column shows the eigenvalues of the variables, while the Trace Statistic column shows the test statistic. The critical values for the test are given in the 0.05 column and the Prob.** column represents the p-value of the test. The results show that there is at least one cointegrating equation present, as the p-value for the "None" hypothesis is less than 0.05. However, there is not enough evidence to support the presence of two or more cointegrating equations.

Based on the findings in [Table 5](#) above, statistical results show that the unemployment rate has a significant positive influence on the level of corruption in the long term. This is indicated by the t-statistic value $[5.25464]$ which is greater than the t-table value of 1.708. In the short term, CRPTN has a significant positive effect on UMPY with a t-statistic value $[3.12146]$ greater than the t-table value of 1.708. On the other hand, there is an interesting relationship between HMNCPTL which has a significant positive influence on UMPY with a t-statistic value of $[1.96099]$. This provides an explanation that in the short term the role of increasing corruption also increases unemployment. However, increasing human capital also actually increases unemployment.

Table 5. VECM Model Analysis.

Cointegrating Eq:	CointEq1		
CRPCTN(-1)	1.000000		
HMNCPTL(-1)	0.739367		
	(0.54501)		
	[1.35662]		
UMPLY(-1)	6.005519		
	(1.14290)		
	[5.25464]		
C	-94.85243		
Error Correction:	D(CRPCTN)	D(HMNCPTL)	D(UMPLY)
CointEq1	0.068210	0.100528	-0.101549
	(0.07797)	(0.14648)	(0.02427)
	[0.87478]	[0.68631]	[-4.18407]
D(CRPCTN)	-0.219328	-0.358021*	0.237231*
	(0.24417)	(0.45868)	(0.07600)
	[-0.89827]	[-0.78056]	[3.12146]
D(HMNCPTL)	-0.262703*	-0.161634	0.108282*
	(0.17740)	(0.33325)	(0.05522)
	[-1.48085]	[-0.48502]	[1.96099]
D(UMPLY)	-0.810077*	-1.029040	0.887989
	(0.83072)	(1.56053)	(0.25857)
	[-0.97516]	[-0.65942]	[3.43422]
C	1.694294	2.106425	-0.681900
	(0.51913)	(0.97520)	(0.16159)
	[3.26373]	[2.15999]	[-4.22007]
R-squared	0.542191	0.290749	0.731470
Adj. R-squared	0.126001	-0.354024	0.487351
Sum sq. resids	17.83375	62.93319	1.727812
S.E. equation	1.273283	2.391903	0.396325
F-statistic	1.302748	0.450932	2.996374
Log likelihood	-28.90720	-42.77799	-3.230592
Akaike AIC	3.627927	4.888908	1.293690
Schwarz SC	4.173448	5.434430	1.839211
Mean dependent	0.954545	0.818670	-0.118182
S.D. dependent	1.361976	2.055561	0.553531
T-tabel			1708

Apart from that, determining the influence between variables can also be done by comparing the t-statistic value and the coefficient value. Based on Table 5 above, CRPCTN has a significant negative effect on HMNCPTL with a t-statistic value [-0.78056] which is greater than the coefficient value (0.45868). An interesting relationship occurs in that CRPCTN has a significant negative effect on CRPCTN with a t-statistic value of [-0.89827]. This illustrates that an increasing level of corruption will reduce the level of human capital and the level of corruption itself in the short term. Apart from that, UMPY also has a significant negative influence on CRPCTN with a t-statistic value [-0.97516] greater than the coefficient value (0.83072). So that in the short term the unemployment rate actually reduces the level of corruption Table 6, Table 7.

Table 6. The Granger Causality Test Performed.

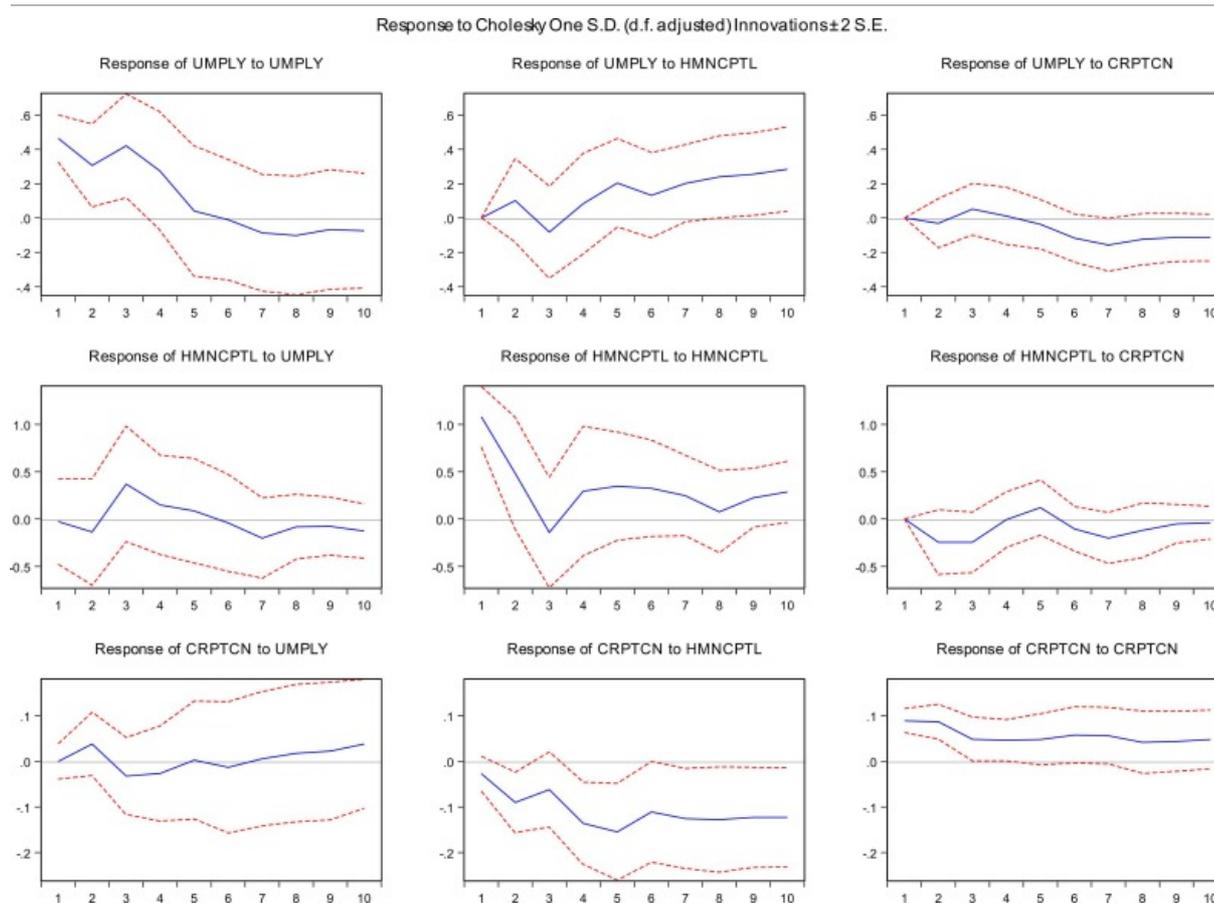
Dependent variable: D(CRPCTN)			
Excluded	Chi-sq	df	Prob.
D(HMNCPTL)	6.579175	3	0.0866
D(UMPLY)	7.453737	3	0.0588
Dependent variable: D(HMNCPTL)			
Excluded	Chi-sq	df	Prob.
D(CRPCTN)	2.474581	3	0.4799
D(UMPLY)	1.976643	3	0.5773
Dependent variable: D(UMPLY)			
Excluded	Chi-sq	df	Prob.
D(CRPCTN)	14.85504	3	0.0019
D(HMNCPTL)	15.38995	3	0.0015

There is a significant causal relationship between UMPY and CRPCTN, as well as between UMPY and HMNCPTL because the probability value is smaller than the significance level of five percent. This means that changes to UMPY can affect CRPCTN and HMNCPTL directly. However, the relationship between the three other variables besides those mentioned above is not significant, because the probability value is greater than the significance level, namely five percent. It should be noted that these results were obtained from analysis of observed data, and further research may be needed to confirm and expand these findings.

Table 7. Variance Decomposition.

Period	S.E.	UMPLY	HMNCPTL	CRPCTN
1	0.093404	5.16E-05	8.471590	91.52836
2	0.161024	5.687998	34.33661	59.97539
3	0.182116	7.564390	38.38906	54.04655
4	0.233594	5.907979	57.26345	36.82857
5	0.284499	3.993616	68.29216	27.71423
6	0.311216	3.513569	69.82840	26.65803
7	0.340341	2.965948	71.99756	25.03649
8	0.366328	2.801462	74.28717	22.91137
9	0.389579	2.807539	75.67035	21.52211
10	0.413116	3.354640	76.15454	20.49082

The Impulse Response Function (IRF) graph illustrates the dynamic relationship between variables. In this particular case, the graph shows the relationship between UMPY, HMNCPTL, and CRPTCN in response to changes in each variable. The graph reveals that UMPY has a positive response to HMNCPTL, as it initially increases until period two and then decreases until period 3, then increases until period 5, decreases again until period 6, and finally increases until period 10. On the other hand, UMPY has a negative response to CRPTCN, as it initially decreases slightly until period two and then increases until period 3, decreases again until period 7, and then stabilizes until period 10. The relationship between HMNCPTL and UMPY is initially negative until period 2, then becomes positive until period 3, decreases again until period 7, and then increases slightly until period 10, although it slightly decreases in the end. The response of HMNCPTL to CRPTCN initially decreases until period 2, stabilizes until period 3, increases again until period 5, decreases again until period 7, and then increases slightly until period 10. Finally, CRPTCN has a positive response to UMPL, as it initially increases until period two and then decreases until period 3, increases slightly until period 6, decreases slightly, and then increases again until period 10. The response of CRPTCN to HMNCPTL initially decreases until period 2, increases slightly until period 3, decreases again until period 4, decreases further until period 5, increases slightly until period 6, and then stabilizes until period 10 Fig. 1.



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Fig. 1. Impulse Response Function.

A variance decomposition table is a statistical analysis used to determine the proportion of forecast error variance in one variable that can be attributed to its own innovations or to the innovations in other variables in the system. The table below presents the variance decomposition of corruption in Indonesia measured by the CRPTCN variable, along with two other variables, namely UMPY and HMNCPTL. From the table, it can be observed that corruption has a dominant role in explaining its own variance, with a percentage of 91.53% in the first period and decreasing of 20.49% in the tenth period. The other two variables, UMPY and HMNCPTL, have smaller contributions, with UMPY ranging from 5.16E-05% in the first period to 3.35% in the tenth period and HMNCPTL ranging from 8.47% in the first period to 76.15% in the tenth period. The results suggest that corruption is the most important factor in explaining its own variance over the ten-year period, although the other variables also have some influence on corruption.

Conclusion

Both the importance of Human Capital in determining a country's fate and the fact that corruption is a major impediment to economic success have been emphasized by our research. We now know that corruption severely hampers a country's development. Economic growth is stifled and funds are taken away from more pressing public needs. Corrupt practices are directly linked to joblessness, as they have a compounding effect that ultimately hurts the economy. Taking swift, effective measures to combat corruption is therefore more crucial than ever. The only way to reduce the prevalence of this evil is to implement strict rules, impose harsh punishments for corrupt conduct, and encourage openness and responsibility in government.

However, our research shows that human capital may serve as a ray of light. Investing in people's health and education may improve their Human Capital, which in turn can boost the economy. In light of this, it's clear that initiatives to cultivate human capital should be prioritized.

Corruption, unemployment, and human capital are all interconnected in important ways, as we've emphasized in our study. Long-term success depends on a well-educated and productive workforce, which corruption stunts. Because of this, combating corruption is crucial not just for Indonesia's economy but also for the welfare of its people. Our research has offered a guide for decision-makers in Indonesia like a government can improve the lives of its inhabitants and spur economic progress by taking on the problem of corruption head-on and investing in its most valuable resource, here its people. We anticipate that our results will be useful to policymakers in Indonesia as they work to improve the country's future.

Limitation

This research is limited by several factors, including the availability of data, accessibility of data, and the timeframe period. The data may be limited in terms of the quantity and quality of information available, which can impact the validity and reliability of the results obtained. Additionally, the accessibility of data can be limited due to legal or practical reasons, such as privacy laws or data protection regulations. Furthermore, the timeframe period may be limited in terms of the duration of the study, which can impact the depth and breadth of the analysis conducted. As a result, it is important to acknowledge these limitations when interpreting the results of this research and to consider them when drawing conclusions or making recommendations.

Suggestion

As corruption has a negative impact on unemployment and human capital in Indonesia, it is imperative for the government to take concrete measures to address this issue. In this article, we will discuss some suggestions for those responsible for tackling the problem of corruption in Indonesia.

Strengthen the regulatory framework, one way to combat corruption is to implement stricter regulations and penalties for corrupt activities. This can serve as a deterrent to individuals who may be tempted to engage in corrupt practices. The government can consider introducing laws that increase the severity of punishments for corruption-related offences, including imprisonment and heavy fines. Additionally, the government can establish a body to monitor and enforce compliance with these laws. This can ensure that those who engage in corrupt practices are held accountable for their actions.

Promote transparency and accountability; another effective way to tackle corruption is to promote transparency and accountability in government operations. This can be achieved by making government operations more accessible to the public and increasing public participation in decision-making processes. The government can implement measures that require officials to disclose their financial interests and assets. This can help prevent conflicts of interest and increase accountability. Additionally, the government can establish a body to investigate allegations of corruption, ensuring that officials are held accountable for their actions.

Invest in human capital development. To improve the quality of the workforce, the government can invest in human capital development programs. These programs can focus on improving education and training opportunities for workers, promoting merit-based hiring and promotions, and increasing the availability of job training programs. Such

programs can help ensure that workers are equipped with the necessary skills to contribute to the economy effectively. This, in turn, can lead to higher productivity and economic growth.

Encourage public participation, and The government can encourage public participation in government affairs and decision-making processes. This can be achieved by establishing open communication channels between the government and the public, holding regular town hall meetings, and creating online platforms for public input. Such measures can help increase transparency and accountability in government operations.

Monitor and evaluate progress, and It is crucial to regularly monitor and evaluate progress in addressing corruption and its impact on unemployment and human capital in Indonesia. This can be achieved by establishing performance indicators, setting specific targets, and monitoring progress over time. Regular reviews can help identify gaps and areas that require further improvement.

In conclusion, corruption in Indonesia has a negative impact on unemployment and human capital. To combat corruption, the government should consider implementing stricter regulations and penalties for corrupt activities, promoting transparency and accountability in government operations, investing in human capital development programs, encouraging public participation, and regularly monitoring and evaluating progress. By doing so, the government can create a more favourable environment for economic growth and development, which can ultimately improve the lives of its citizens.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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