Integritas: Jurnal Antikorupsi
Vol 11, No. 2, 2025, pp. 203-218

https://jurnal.kpk.go.id/index.php/integritas
©Komisi Pemberantasan Korupsi

Control corruption and innovation: Empirical evidence from upper middle income countries

Nafis Dwi Kartiko *

Universitas Indonesia. Jl. Prof. Dr. Sumitro Djojohadikusumo, Depok, 16424, Indonesia
Directorate General of Taxes, Ministry of Finance of the Republic of Indonesia. Jakarta 12190, Indonesia
Universitas Pelita Harapan University. Jl. Mh Thamrin Bulevard 1100 Tangerang, Banten 15811, Indonesia
nafisdwikartiko@gmail.com
* Corresponding Author

Abstract*:* This study analyzes the effect of corruption control on innovation in Upper Middle Income Countries (UMIC). Using panel data from 54 UMIC countries for the period 2014-2022 with 486 observations, this study applies Ordinary Least Squares (OLS) regression to identify the relationship between variables. The results show that corruption control has a negative and significant impact on innovation in the overall sample, suggesting a transition effect that initially slows innovation due to increased compliance costs and bureaucratic complexity. However, in countries with a high number of patent applications, corruption control increases attractiveness for foreign investors, creating a conducive environment for research collaboration and technology transfer. Whereas, in countries with high tax revenue, anti-corruption policies reduce the flexibility of fiscal incentives that previously supported innovation. Therefore, corruption control policies need to be balanced with strategies that support the innovation ecosystem to ensure sustainable innovation growth and enhance global competitiveness.
Keywords: Innovation; Corruption Control; Upper Middle Income Countries; Tax Revenue;

How to Cite: Kartiko, N. D. (2025). Control corruption and innovation: Empirical evidence from upper middle income countries. *Integritas: Jurnal Antikorupsi*, *11*(2), 203-218. https://doi.org/10.32697/integritas.v11i2.1480

Introduction

Innovation is a key factor in improving national competitiveness, so its role in the economy has received increasing attention in research. Innovation is defined as the ability to create new ideas, processes, products, and services that contribute to economic growth and improved welfare (Mokthtari Moughari & Daim, 2023; Sen & Orhan, 2023). The relationship between innovation (especially in technological innovation) and national competitiveness cannot be separated from policy formulation, educational progress, and investment in research and development (R&D). Empirical studies demonstrate a clear disparity in innovation performance between countries, particularly within the European Union, where countries with low to medium levels of innovation frequently exhibit constrained competitiveness and economic growth compared to countries with high levels of innovation (Herman, 2018). Developed countries recognize innovation as a pivotal driver of economic growth, while developing countries perceive it as a means to hasten economic convergence with more developed nations (Gungaa et al., 2021).

These different perspectives reflect the variety of innovation strategies implemented by countries around the world. In addition, the link between innovation and entrepreneurship also plays an important role in improving national competitiveness. Studies show that entrepreneurial activity creates an ecosystem conducive to innovation, which in turn drives economic progress (Farinha et al., 2018; Games, 2019). Countries that successfully foster entrepreneurship through supportive policies tend to have higher levels of innovation. Furthermore, national innovation capacity is shown to be strongly correlated with a country's economic trajectory, where countries with strong innovation systems generally excel in global competitiveness (Cvetanović et al., 2021; Lomachynska & Podgorna, 2018). Therefore, understanding the various factors that influence national innovation systems, such as human capital, investment in R&D, as well as government policies, is a strategic step in designing effective economic policies (Dima et al., 2018;

Juknevičienė, 2019). In addition, a comparative analysis of national innovation systems shows that the level of innovation competitiveness of a country depends on the effectiveness of its resource utilization and institutional framework (Bakhtiar et al., 2022; Dworak et al., 2021; Y. Huang et al., 2023).

The success of a country's innovation system is not only determined by the amount of funding, but also by the ability to coordinate cooperation between various stakeholders (Miranda et al., 2021; Stratan & Fală, 2023). This collaboration is a crucial element in encouraging knowledge sharing and creativity that leads to the development of innovative solutions to complex social challenges. In addition, the integration of education within the framework of national innovation policy is a major determinant of the success of a country's innovation. Improving the quality of education, particularly in science, technology, engineering and mathematics (STEM), has been shown to enhance national innovation capacity and strengthen competitiveness at the global level (Dima et al., 2018; Hemert & Nijkamp, 2010; Kiseľáková et al., 2019). Countries that invest in the development of a knowledgeable workforce are more likely to achieve sustainable and innovative economic growth.

Innovation has been recognized as creating positive outcomes for a country, both in improving economic competitiveness and in promoting sustainable growth. However, in its implementation, innovation often faces various structural barriers that hinder its effectiveness. One of the main barriers faced is corruption, which can weaken the economic system and significantly hinder innovation. Corruption is widely recognized as a major impediment to innovation, especially in developing and emerging economies. While there is a view that corrupt practices, such as bribery, can speed up decision-making processes in the short term, the long-term consequences tend to suppress firms' innovation capacity. Corruption increases transaction costs and creates an unstable business environment, which in turn reduces incentives for firms to invest in new technologies and innovative processes (Anokhin & Schulze, 2009; Priya & Sharma, 2022). In a corrupt environment, uncertainty regarding the potential return on investment is greater, discouraging entrepreneurs and innovators from taking risks in new projects. The risk of profit expropriation by corrupt officials further exacerbates the situation, causing stagnation in innovation development (Ellis et al., 2019).

In addition, companies that refuse to engage in corrupt practices often face competitive disadvantages compared to companies that are willing to engage in such unethical practices, especially in countries with high levels of corruption (dela Rama, 2012; Doh et al., 2003; Grasso, 2024). As a result, an adverse cycle occurs, where integrity is increasingly marginalized as corrupt practices become a habit that is difficult to eradicate (Das et al., 2020). The administrative burden created by corruption can also impede or significantly delay the acquisition of permits and approvals required in the development of innovations. This disrupts the overall research and development (R&D) process, especially in countries with weak institutional frameworks and high levels of corruption (Zhou et al., 2019). This negative impact is more pronounced for domestic firms than for foreign firms that may already have a network of relationships that can mitigate such risks (Cerdeira & Lourenço, 2022). The accumulation of these barriers creates an interesting paradox: while some firms may see corrupt practices as a way to circumvent regulatory barriers in the short term, ultimately, corruption undermines trust in institutions, stifles competitive spirit, and hinders sustainable innovation (Majeed et al., 2024).

The relationship between corruption and innovation has been a major focus of various studies, especially in understanding how controlling corruption affects a country's innovation capacity. Corruption generally impedes transparent and systematic governance, creating an environment that is not conducive to creativity and reducing investment incentives in innovative activities (İmamoğlu & Payaslioglu, 2022). Effective governance, particularly through controlling corruption and adherence to the rule of law, contributes positively to a country's level of innovation (İmamoğlu & Payaslioglu, 2022).. The negative effects of corruption are not only limited to financial aspects, but also lead to the degradation of the overall innovation environment (Akkoyunlu & Ramella, 2018). In developing countries such as China, effective anti-corruption policies have been proven to increase public trust in government institutions, which in turn fosters entrepreneurial spirit and encourages innovation (Chen et al., 2021). The existence of

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

digital payment systems can also reduce opportunities for corruption and ultimately increase innovation capacity in developing countries (Setor et al., 2021). Furthermore, institutional quality plays an important role in supporting innovation, with research showing that better control of corruption is associated with an increase in the number of patents and other innovative outcomes (Wen et al., 2018).

In African countries, improving access to education and financial inclusion is one of the key strategies in reducing the negative impact of corruption on innovation (Jungo et al., 2023). Jungo et al. (2023) study suggests that a better-skilled workforce can contribute to driving innovation, while reducing reliance on corrupt practices that damage the business ecosystem. The negative correlation between corruption levels and innovative activity was also found to be stronger in low-income countries, although countries with higher economic resilience tend to be better able to withstand the adverse effects of corruption (DiRienzo & Das, 2014). Corruption also directly hinders entrepreneurship, which is one of the main factors in the development of innovation (Harraf et al., 2020). Countries with lower levels of corruption exhibit a more favorable business environment for entrepreneurship, enabling the transformation of innovative ideas into implementable solutions (Harraf et al., 2020). In the Asian region, research shows that the effectiveness of corruption control policies has a strong positive correlation with increased levels of innovation (Farooq et al., 2023). This study confirms that transparent governance is a key element in creating a sustainable innovation ecosystem (Farooq et al., 2023).

This study aims to investigate the effect of control over corruption on the level of innovation in Upper Middle Income Countries (UMIC). Previous studies have shown that corruption can hinder innovation by increasing economic risk and reducing investment incentives in research and development (Q. Huang & Yuan, 2021; Kumar, 2023). However, most studies still focus on developed or developing countries in general, while specific studies on the impact of corruption on innovation in UMIC countries are limited. In addition, existing research tends to highlight the relationship between corruption and innovation in aggregate without considering how control over corruption may have different impacts in the upper middle-income group of countries (Wen et al., 2023). Therefore, this study seeks to fill the literature gap by exploring the role of corruption control effectiveness on the innovation climate in UMIC countries. Specifically, this study will examine whether increased monitoring and anti-corruption policies can improve the innovation environment by reducing market uncertainty and increasing investment incentives in the technology sector (Rahman & Alam, 2022).

The novelty of this study lies in the specific approach to UMIC countries that have unique economic characteristics, where factors such as rapid economic growth, increased global openness, and the transition to a knowledge-based economy have the potential to moderate the impact of corruption on innovation (Rahman & Alam, 2022; Wen et al., 2023). Unlike previous studies, this research will examine how control over corruption can strengthen innovation competitiveness in several country conditions, for example based on tax revenue, patent application, and control over corruption. Theoretically, this research contributes to enriching the understanding of the dynamics of the relationship between corruption, its control, and innovation in the context of the upper middle economy. From a practical perspective, the results of this study can provide recommendations for policy makers in UMIC countries to design more effective anti-corruption strategies that support the innovation ecosystem and technological growth. Thus, this research is expected to provide new insights for academics, policy makers, and related stakeholders in designing more inclusive and evidence-based policies in promoting sustainable innovation.

Methods

Data and Samples

This study uses panel data from 54 countries belonging to the Upper Middle Income Countries (UMIC) category with an observation period from 2014 to 2022. With a time coverage of nine years and the number of countries observed, the total number of observations in this study reached 486. The data used in this study were obtained from various official sources, namely the

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

International Monetary Fund (IMF), Government Finance Statistics Yearbook and data files, as well as Gross Domestic Product (GDP) estimates published by the World Bank and the Organization for Economic Co-operation and Development (OECD). The selection of UMIC countries is based on the income classification established by the World Bank, which reflects the characteristics of economies with relatively high growth rates and transition to innovation-based economies. The period 2014-2022 was chosen to capture the dynamics of change in corruption control and innovation in UMIC countries, especially in response to anti-corruption policies and institutional reforms implemented in the past decade. The use of panel data allows this study to analyze the pattern of relationships between the variables under study more accurately by considering the time dimension and heterogeneity between countries.

Operationalization of Research Variables

The operationalization of variables in this study includes dependent variables, independent variables, and control variables that are analyzed to understand the relationship between corruption control and innovation in Upper Middle Income Countries. The dependent variables in this study are the total number of patents (LN_PATENT), the number of patent applications from domestic residents (LN_PATENTRES), and the number of patent applications from non-residents (LN_PATENTNONRES). These variables are used as leading indicators to measure the level of innovation in each country. Patents are a standard measure widely used in economic research to represent a country's innovation output.

The main independent variable in this study is control of corruption (CC), which measures the extent to which corruption can be controlled in a country. Better control of corruption is expected to create a more stable business environment, reduce investment uncertainty, and encourage increased innovation. In addition, this study also uses several control variables to account for other factors that may affect innovation. The control variables used include the Ease of Doing Business (EODB) score, which reflects how easy it is for businesses to do business in a country, and the contribution of the agriculture, forestry, and fishing sector to Gross Domestic Product (AVA). In addition, the value added of the industry sector (Industry Value Added - IVA) and manufacturing sector (Manufacturing Value Added - MVA) are also included as control variables to measure the role of each sector in driving innovation. The unemployment rate (UNEMP) is also considered as a factor that may affect labor dynamics and incentives for innovation. Finally, tax revenue (TR) is included as an indicator of the government's fiscal capacity to support innovation policies and investment in R&D. More details are presented in Table 1 below.

Table 1. Variable Operationalization

Variable	Operationalization
Dependent Variables	
Total Patent (LN_PATENT)	"The Total Patent variable is measured using the natural logarithm of the total number of patent applications filed by domestic residents and non-residents in a country."
Patent applications from residents (LN_PATENTRES)	"The variable Patent is measured using the natural logarithm of the total applications from residents refers to the number of patent applications filed by domestic individuals or entities through the Patent Cooperation Treaty or national patent offices. This indicator is used to reflect the domestic innovation capacity that comes from residents or companies operating within a country."
Patent applications from nonresidents (LN_PATENTNONRES)	"The variable Patent is measured using the natural logarithm of the total applications from nonresidents measures the number of patent applications filed by foreign individuals or entities through the Patent Cooperation Treaty or national patent offices. This indicator reflects a country's attractiveness to global innovators as well as policies that support foreign investment in research and development."
Independent Variables	
Control of Corruption (CC)	"Control of Corruption captures perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as "capture" of the state by elites and private

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Variable	Operationalization
	interests. Percentile rank indicates the country's rank among all countries covered by the aggregate indicator, with 0 corresponding to lowest rank, and 100 to highest rank."
Control Variable	
Ease of doing business score (EODB)	"The ease of doing business scores benchmark economies with respect to regulatory best practice, showing the proximity to the best regulatory performance on each Doing Business indicator. An economy's score is indicated on a scale from 0 to 100, where 0 represents the worst regulatory performance and 100 the best regulatory performance."
Agriculture, Forestry, and Fishing Value Added (AVA)	"Agriculture, forestry, and fishing corresponds to ISIC divisions 1-3 and includes forestry, hunting, and fishing, as well as cultivation of crops and livestock production. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources. The origin of value added is determined by the International Standard Industrial Classification (ISIC), revision 4. Note: For VAB countries, gross value added at factor cost is used as the denominator."
Industry Value Added (IVA)	"Industry (including construction) corresponds to ISIC divisions 05-43 and includes manufacturing (ISIC divisions 10-33). It comprises value added in mining, manufacturing (also reported as a separate subgroup), construction, electricity, water, and gas. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources."
Manufacturing Value Added MVA)	"Manufacturing refers to industries belonging to ISIC divisions 15-37. Value added is the net output of a sector after adding up all outputs and subtracting intermediate inputs. It is calculated without making deductions for depreciation of fabricated assets or depletion and degradation of natural resources."
Unemployment (UNEMP)	"Unemployment refers to the share of the labor force that is without work but available for and seeking employment. Definitions of labor force and unemployment differ by country."
Tax Revenue (TR)	"Tax revenue refers to compulsory transfers to the central government for public purposes. Certain compulsory transfers such as fines, penalties, and most social security contributions are excluded. Refunds and corrections of erroneously collected tax revenue are treated as negative revenue."

Econometric Model and Estimation procedure

This study aims to analyze the effect of corruption control on innovation in Upper Middle Income Countries (UMIC) using an econometric approach. The estimation model used in this study is Ordinary Least Squares (OLS) regression, which allows the identification of the relationship between independent variables and dependent variables by considering control variables. The dependent variable in this study consists of the total number of patent applications (LN_PATENT), patent applications from domestic residents (LN_PATENTRES), and patent applications from non-residents (LN_PATENTNONRES). The main independent variable is Control of Corruption (CC), which measures the effectiveness of corruption control in a country. Variable $C_{i,d}$ represents the control variables, which include Ease of doing business score (EODB), Agriculture, Forestry, and Fishing Value Added (AVA), Industry Value Added (IVA), Manufacturing Value Added MVA), Unemployment (UNEMP), and Tax Revenue (TR). The following is the econometric model used in the study.

$$Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

$$Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

$$Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

Description:
i = cross section data (country data)
d = time series data (year period data)

Results and Discussion

Descriptive Statistics and Correlation Coefficient

Descriptive statistical analysis provides an overview of the distribution of the variables used in this study based on 486 observations. The average total number of patent applications filed in UMIC, as measured by the natural logarithm (LN_PATENT), is 4.3919 with a standard deviation of 3.5531. The minimum value for this variable is 0.0000, while the maximum value reaches 14.2765, indicating a significant disparity in the level of innovation between countries. The average number of patent applications filed by domestic residents (LN_PATENTRES) is 3.3148 with a standard deviation of 3.2580, while the number of patent applications from non-residents (LN_PATENTNONRES) has a higher average of 3.7676 with a standard deviation of 3.3582. The Control of Corruption (CC) variable, which reflects the level of effectiveness of corruption control in a country, has an average value of 41.7975 with a standard deviation of 19.9509. The minimum value for this variable is 0.9524, while the maximum value reaches 79.5238, indicating considerable variation in the effectiveness of corruption control among UMIC countries. The Ease of Doing Business (EODB) variable, which measures the ease of doing business in a country, has a mean of 60.1089 with a standard deviation of 18.0730, with a range of values from 0.0000 to 83.7339.

Table 2. Descriptive Statistics

Variable	Obs	Mean	Std. dev.	Min	Max
LN_PATENT	486	4.3919	3.5531	0.0000	14.2765
LN_PATENTRES	486	3.3148	3.2580	0.0000	14.1708
LN_PATENTNONRES	486	3.7676	3.3582	0.0000	11.9768
CC	486	41.7975	19.9509	0.9524	79.5238
EODB	486	60.1089	18.0730	0.0000	83.7339
AVA	486	7.6808	4.1706	0.0000	24.9659
IVA	486	27.3255	12.0142	0.0000	76.8381
MVA	486	11.4730	6.8287	0.0000	30.3964
GDPGR	486	2.2897	6.3154	-32.9088	37.5079
UNEMP	486	8.9647	7.1092	0.0000	34.0070
TR	486	11.9106	8.6203	0.0000	34.6287

Economic sector variables also show significant variation. The contribution of the agriculture, forestry and fisheries sector to GDP (AVA) has an average of 7.6808 with a standard deviation of 4.1706, while the contribution of the industrial sector (IVA) has a higher average of 27.3255 with a standard deviation of 12.0142. Manufacturing sector value added (MVA) shows an average of 11.4730 with a standard deviation of 6.8287, reflecting a relatively stable contribution to the economies of UMIC countries. The economic growth rate (GDPGR) has an average of 2.2897 with a standard deviation of 6.3154, showing considerable fluctuation with a minimum value of -32.9088 and a maximum of 37.5079. Meanwhile, the unemployment rate (UNEMP) has an average of 8.9647 with a standard deviation of 7.1092, with a minimum value of 0.0000 and a maximum of 34.0070, indicating inequality in employment levels between countries. Finally, the tax revenue (TR) variable has a mean of 11.9106 with a standard deviation of 8.6203, with a range of values between 0.0000 and 34.6287, indicating significant differences in the fiscal capacity of the governments of UMIC countries to collect tax revenues.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

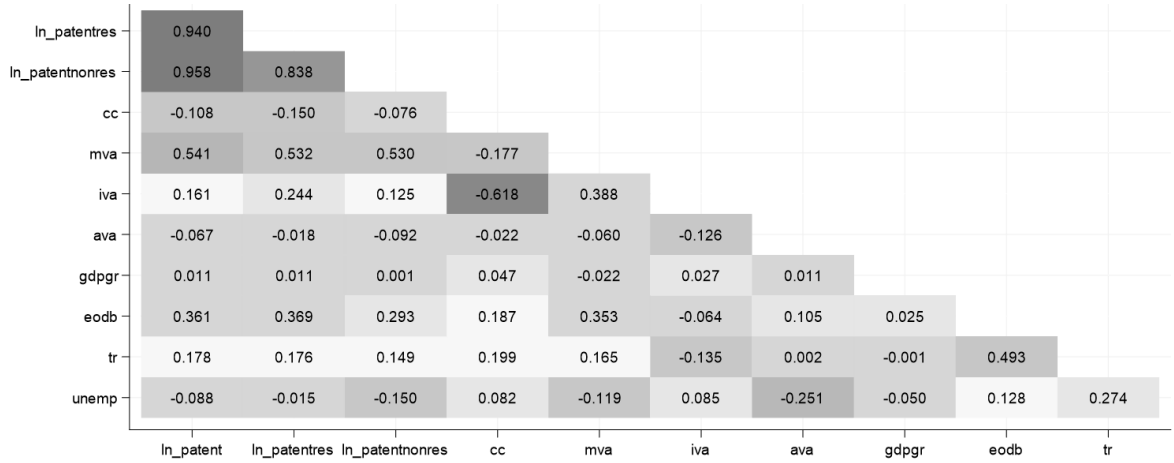


Figure 1. Correlation Matrix

The results of the correlation analysis show a strong relationship between the main variables contributing to innovation (presented in Figure 1). The Control of Corruption (cc) variable shows a negative correlation with ln_patentres and ln_patentnonres, at -0.150 and -0.076 respectively, indicating that in some cases, an increase in corruption control does not necessarily have a direct impact on increasing patent applications. Furthermore, the Manufacturing Value Added (mva) variable has a positive correlation with ln_patent (0.541), which suggests that an increase in manufacturing activity may contribute to an increase in innovation. In addition, Tax Revenue (tr) has a positive correlation with Ease of Doing Business (eodb) of 0.493, indicating that countries with a more conducive business climate tend to have higher tax revenue. Meanwhile, the unemployment rate (unemp) has a negative correlation with several economic variables, including Gross Domestic Product Growth (gdpgr) and Industry Value Added (iva), indicating that economic and industrial growth can help reduce the unemployment rate. Meanwhile, the unemployment rate (unemp) has a negative correlation with several economic variables, including Gross Domestic Product Growth (gdpgr) and Agriculture, Forestry, and Fishing Value Added (ava), indicating that economic and industrial growth can help reduce the unemployment rate.

Multivariate Statistical Analysis

The regression analysis in this study examines the effect of control of corruption on innovation, as measured by the total number of patent applications (LN_PATENT), patent applications from domestic residents (LN_PATENTRES), and patent applications from non-residents (LN_PATENTNONRES) (presented in Table 3). The regression results show that the Control of Corruption (CC) variable has a negative and significant coefficient on all dependent variables, with significance levels of 1% for LN_PATENT (β = -0.0212, t = -2.83), 5% for LN_PATENTRES (β = -0.0174, t = -2.38), and 10% for LN_PATENTNONRES (β = -0.0136, t = -1.90). These findings suggest that increased control over corruption may negatively impact the number of patent applications, possibly reflecting a transition effect in a more transparent business environment. The Ease of Doing Business (EODB) variable has a positive and significant impact on all innovation variables, with coefficients of 0.0442 for LN_PATENT (t = 4.96), 0.0430 for LN_PATENTRES (t = 5.36), and 0.0274 for LN_PATENTNONRES (t = 3.55), all at the 1% significance level. These results suggest that the higher the ease of doing business in a country, the greater the likelihood of increased innovative activity.

Table 3. Regression Results for the Whole Sample

"This table presents regression results testing the effect of corruption control on innovation. The following regression model is: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$, $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$, and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ Variable $C_{i,d}$ represents the control variables, which include Ease of doing business score (EODB), Agriculture, Forestry, and Fishing Value Added (AVA), Industry Value Added (IVA), Manufacturing Value Added MVA), Unemployment

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

(UNEMP), and Tax Revenue (TR). The table includes regression coefficients and t-statistics $\left(\frac{b}{t_{stat}}\right)$. Robust regressions have been presented to account for heteroscedasticity and autocorrelation. The significance levels are denoted by ***, **, and *, corresponding to 1%, 5%, and 10% respectively."

	(1)	(2)	(3)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0212***	-0.0174**	-0.0136*
	(-2.83)	(-2.38)	(-1.90)
EODB	0.0442***	0.0430***	0.0274***
	(4.96)	(5.36)	(3.55)
AVA	-0.0810***	-0.0128	-0.104***
	(-2.80)	(-0.50)	(-3.85)
IVA	-0.0222	0.00858	-0.0272**
	(-1.64)	(0.66)	(-2.12)
MVA	0.234***	0.197***	0.231***
	(8.62)	(7.23)	(9.88)
GDPGR	0.0114	0.00938	0.00433
	(0.59)	(0.55)	(0.24)
UNEMP	-0.0388*	0.00107	-0.0667***
	(-1.74)	(0.06)	(-3.09)
TR	0.0114	0.00549	0.0160
	(0.64)	(0.36)	(0.98)
_cons	1.348*	-1.038	1.974***
	(1.88)	(-1.47)	(2.97)
N	486	486	486
R^2-Adj	0.333	0.323	0.314
F_Stat	48.71	37.57	45.53
Prob > F	0.000	0.000	0.000

The regression analysis results are divided into two categories based on the number of patent applications in Upper Middle Income Countries (UMIC) (presented in Table 4). Models 1, 2, and 3 reflect countries with a lower than average number of patent applications (Countries with Low Patent Applications), while Models 4, 5, and 6 represent countries with a higher than average number of patent applications (Countries with High Patent Applications). This division is done to evaluate whether the effect of corruption control on innovation differs between countries with relatively low and high levels of innovation. In the category of countries with a low number of patents, Control of Corruption (CC) shows no significant relationship to all innovation variables, including the total number of patent applications (LN_PATENT), patents filed by domestic residents (LN_PATENTRES), and patents filed by non-residents (LN_PATENTNONRES). In contrast, in countries with a high number of patents, CC has a positive and significant impact on non-resident patent applications (LN_PATENTNONRES), with a coefficient of 0.0390 ($t = 3.50$, $p < 0.01$). This finding indicates that countries with more developed innovation systems are better able to utilize corruption control policies to increase patent investment by foreign entities. The Ease of Doing Business (EODB) impact also shows a notable difference between the two groups. In countries with a low number of patents, this variable has a positive but insignificant correlation with innovation. However, in countries with a high number of patents, EODB has a significant negative impact on LN_PATENT ($\beta = -0.0546$, $t = -2.13$, $p < 0.05$) and LN_PATENTNONRES ($\beta = -0.106$, $t = -4.59$, $p < 0.01$). These results suggest that more complex business regulations may be an obstacle in a more advanced innovation environment.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Table 4. Regression Results for Sample Decomposition by Countries with High and Low Patent Applications

"This table presents regression results testing the effect of corruption control on innovation. The following regression model is: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (1) and (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (2) and (5)), and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (3) and (6)). Variable $C_{i,d}$ represents the control variables, which include Ease of doing business score (EODB), Agriculture, Forestry, and Fishing Value Added (AVA), Industry Value Added (IVA), Manufacturing Value Added MVA), Unemployment (UNEMP), and Tax Revenue (TR). The table includes regression coefficients and t-statistics $\left(\frac{b}{t_{stat}}\right)$. Robust regressions have been presented to account for heteroscedasticity and autocorrelation. The significance levels are denoted by ***, **, and *, corresponding to 1%, 5%, and 10% respectively."

	Countries with Low Patent Applications			Countries with High Patent Applications		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0110	-0.00474	-0.00894	0.00820	-0.00828	0.0390***
	(-1.37)	(-1.08)	(-1.14)	(0.94)	(-0.94)	(3.50)
EODB	0.00945	0.00135	0.00375	-0.0546**	0.00296	-0.106***
	(1.24)	(0.24)	(0.54)	(-2.13)	(0.10)	(-4.59)
AVA	-0.108***	-0.0260	-0.122***	-0.0667*	-0.0146	-0.135***
	(-4.38)	(-1.60)	(-5.54)	(-1.83)	(-0.43)	(-3.08)
IVA	-0.0553***	-0.0222***	-0.0486***	-0.0361	-0.0181	-0.0623***
	(-4.33)	(-3.43)	(-3.80)	(-1.56)	(-0.78)	(-2.85)
MVA	0.105***	0.0555***	0.110***	0.291***	0.262***	0.271***
	(4.14)	(3.70)	(4.49)	(11.41)	(9.07)	(11.01)
GDPGR	0.0112	0.00535	0.00978	-0.0305	-0.0217	-0.0412
	(0.73)	(0.70)	(0.68)	(-1.15)	(-0.79)	(-1.41)
UNEMP	-0.0460**	0.00749	-0.0759***	-0.0000597	0.0649**	-0.0843**
	(-2.57)	(0.65)	(-4.74)	(-0.00)	(2.30)	(-2.37)
TR	0.0314**	0.0212**	0.0388***	-0.0481	-0.0839*	-0.0451
	(2.43)	(2.47)	(3.21)	(-1.16)	(-1.93)	(-1.11)
_cons	3.233***	0.962***	3.308***	8.834***	3.822**	12.49***
	(4.67)	(2.71)	(4.89)	(6.28)	(2.46)	(8.91)
N	261	261	261	225	225	225
R²-Adj	0.191	0.0995	0.233	0.419	0.359	0.413
F_Stat	13.94	9.510	15.46	26.95	16.31	30.30
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

The results of this regression analysis examine the impact of corruption control on innovation by dividing the sample based on the tax revenue levels of Upper Middle Income Countries (UMIC) (presented in Table 5). Models 1, 2, and 3 represent countries with below-average tax revenue (Countries with Low Tax Revenue), while Models 4, 5, and 6 reflect countries with above-average tax revenue (Countries with High Tax Revenue). This distinction allows for a more in-depth analysis of how fiscal capacity moderates the relationship between corruption control and innovation. In countries with low tax revenue, the Control of Corruption (CC) variable has no significant impact on innovation, either on the total number of patent applications (LN_PATENT), patents from domestic residents (LN_PATENTRES), or patents from non-residents (LN_PATENTNONRES). In contrast, in countries with high tax revenue, CC shows a significant negative impact on all three innovation variables, with coefficients of -0.0433 for LN_PATENT (t = -5.65, p < 0.01), -0.0458 for LN_PATENTRES (t = -6.95, p < 0.01), and -0.0251 for LN_PATENTNONRES (t = -2.91, p < 0.01). These results indicate that in countries with greater fiscal capacity, increased corruption control may have a transition effect that discourages innovation in the short run.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Table 5. Regression Results for Sample Decomposition by Countries with High and Low Tax Revenue

"This table presents regression results testing the effect of corruption control on innovation. The following regression model is: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (1) and (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (2) and (5)), and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (3) and (6)). Variable $C_{i,d}$ represents the control variables, which include Ease of doing business score (EODB), Agriculture, Forestry, and Fishing Value Added (AVA), Industry Value Added (IVA), Manufacturing Value Added MVA), Unemployment (UNEMP), and Tax Revenue (TR). The table includes regression coefficients and t-statistics $\left(\frac{b}{t_{stat}}\right)$. Robust regressions have been presented to account for heteroscedasticity and autocorrelation. The significance levels are denoted by ***, **, and *, corresponding to 1%, 5%, and 10% respectively."

	Countries with Low Tax Revenue			Countries with High Tax Revenue		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	0.00574	0.0161	0.00880	-0.0433***	-0.0458***	-0.0251***
	(0.38)	(1.05)	(0.69)	(-5.65)	(-6.95)	(-2.91)
EODB	0.0219*	0.0259**	0.00991	0.0188	0.0504**	-0.0227
	(1.84)	(2.49)	(0.97)	(0.87)	(2.46)	(-1.02)
AVA	0.128**	0.0745	0.135**	-0.155***	-0.0419	-0.206***
	(2.10)	(1.35)	(2.47)	(-5.42)	(-1.60)	(-7.13)
IVA	-0.00811	0.0335	-0.00602	0.0330**	0.0397***	0.00707
	(-0.36)	(1.50)	(-0.32)	(2.08)	(2.86)	(0.35)
MVA	0.189***	0.191***	0.165***	0.253***	0.182***	0.275***
	(4.18)	(4.25)	(4.48)	(12.50)	(10.28)	(10.26)
GDPGR	0.0379	0.0363	0.0290	-0.0384*	-0.0315	-0.0470*
	(1.46)	(1.43)	(1.29)	(-1.71)	(-1.62)	(-1.90)
UNEMP	-0.0564	-0.0227	-0.0744**	0.0356	0.0606**	-0.00528
	(-1.51)	(-0.64)	(-2.37)	(1.27)	(2.51)	(-0.18)
TR	0.0485	-0.0136	0.0801**	-0.0727***	-0.0371*	-0.0824***
	(1.36)	(-0.41)	(2.57)	(-2.80)	(-1.68)	(-2.80)
_cons	-0.367	-2.788**	-0.168	4.073**	-0.205	6.717***
	(-0.30)	(-2.27)	(-0.16)	(2.56)	(-0.14)	(4.10)
N	207	207	207	279	279	279
R²-Adj	0.260	0.267	0.289	0.526	0.449	0.449
F_Stat	11.55	9.535	13.81	91.41	78.05	61.68
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

The results of this regression analysis evaluate the impact of corruption control on innovation by dividing the sample based on the level of effectiveness of corruption control in UMIC countries. Models 1, 2, and 3 reflect countries with lower than average levels of corruption control (Countries with Low Corruption Control), while Models 4, 5, and 6 represent countries with higher than average levels of corruption control (Countries with High Corruption Control). This division is done to understand whether the effectiveness of corruption control has a different effect on innovation in the two groups of countries. The regression results show that in countries with low corruption control, the Control of Corruption (CC) variable has no significant impact on innovation, either for the total number of patent applications (LN_PATENT), patent applications from domestic residents (LN_PATENTRES), or patent applications from non-residents (LN_PATENTNONRES). In contrast, in countries with high corruption control, CC has a significant negative impact on LN_PATENT ($\beta = -0.0307$, $t = -2.31$, $p < 0.05$) and LN_PATENTRES ($\beta = -0.0310$, $t = -2.70$, $p < 0.01$), but not on LN_PATENTNONRES. These findings suggest that while better control of corruption is generally considered to increase innovation, in the early stages of institutional improvement, the transition towards cleaner governance may create bottlenecks in the short term.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Table 6. Regression Results for Sample Decomposition by Countries with High and Low Corruption Control

"This table presents regression results testing the effect of corruption control on innovation. The following regression model is: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (1) and (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (2) and (5)), and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (for Model (3) and (6)). Variable $C_{i,d}$ represents the control variables, which include Ease of doing business score (EODB), Agriculture, Forestry, and Fishing Value Added (AVA), Industry Value Added (IVA), Manufacturing Value Added MVA), Unemployment (UNEMP), and Tax Revenue (TR). The table includes regression coefficients and t-statistics $\left(\frac{b}{t_{stat}}\right)$. Robust regressions have been presented to account for heteroscedasticity and autocorrelation. The significance levels are denoted by ***, **, and *, corresponding to 1%, 5%, and 10% respectively."

	Countries with Low Corruption Control			Countries with High Corruption Control		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0262	-0.0239	-0.0121	-0.0307**	-0.0310***	-0.00841
	(-1.14)	(-1.17)	(-0.54)	(-2.31)	(-2.70)	(-0.61)
EODB	0.0861***	0.0979***	0.0466***	0.0263**	0.0206**	0.0177*
	(5.90)	(7.16)	(3.46)	(2.53)	(2.21)	(1.83)
AVA	0.114*	0.131**	0.0740	-0.223***	-0.120***	-0.236***
	(1.93)	(2.43)	(1.33)	(-5.46)	(-3.28)	(-6.33)
IVA	-0.0251	0.00163	-0.0415**	-0.0271	-0.00732	-0.0283
	(-1.36)	(0.10)	(-2.28)	(-0.93)	(-0.31)	(-0.91)
MVA	0.106***	0.0324	0.152***	0.330***	0.337***	0.298***
	(3.50)	(1.22)	(5.34)	(7.04)	(7.83)	(6.33)
GDPGR	-0.0235	-0.0272	-0.0261	0.0443	0.0491**	0.0272
	(-0.95)	(-1.31)	(-1.07)	(1.59)	(2.02)	(1.03)
UNEMP	-0.0321	0.0383	-0.0836***	-0.0437	-0.0105	-0.0677**
	(-1.03)	(1.31)	(-2.98)	(-1.50)	(-0.44)	(-2.32)
TR	-0.0168	-0.0288	-0.0265	0.0220	0.0179	0.0298
	(-0.36)	(-0.74)	(-0.61)	(1.08)	(1.00)	(1.61)
_cons	-0.500	-2.865**	1.611	2.977***	0.722	2.274**
	(-0.40)	(-2.54)	(1.33)	(3.06)	(0.82)	(2.21)
N	243	243	243	243	243	243
R²-Adj	0.279	0.235	0.271	0.527	0.589	0.466
F_Stat	29.29	18.42	25.81	33.55	38.22	29.26
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Discussion

The results show that corruption control has a negative and significant impact on all innovation indicators in the overall sample of Upper Middle Income Countries. Findings in Upper Middle Income Countries show that increased control of corruption can create a transition effect that initially slows innovation. In the short term, stricter anti-corruption policies may increase compliance costs and complicate bureaucratic processes for firms and innovators, thereby reducing investment incentives in research and development. This is in line with the view that while reducing corruption has the potential to create a fairer and more transparent business environment, the reforms may create administrative barriers that slow down innovation in its early stages (Anokhin & Schulze, 2009; Priya & Sharma, 2022). Moreover, in an environment where corruption has long been an informal mechanism to speed up licensing and decision-making, the shift towards a cleaner system may cause uncertainty for businesses, which in turn decreases innovative activity (Ellis et al., 2019).

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

However, when the sample is split by the number of patent applications, it is found that in countries with high patent application rates, controlling corruption has a positive impact on patents filed by non-residents. This indicates that in countries that already have a developed innovation ecosystem, efforts to reduce corruption increase the attractiveness of the country for foreign investors and multinational companies looking to file patents. Greater transparency and legal certainty in countries with established innovation systems creates a conducive environment for international research collaboration and technology transfer (Farooq et al., 2023). Moreover, innovations generated in a clean and stable business environment are more likely to thrive in the long run due to the minimal risk of expropriation or misuse of intellectual property rights by corrupt actors (Harraf et al., 2020). This is in line with studies showing that countries with better governance have stronger innovation competitiveness at the global level (Cvetanović et al., 2021; Lomachynska & Podgorna, 2018).

When the sample is split by the level of tax revenue, it is found that in countries with high fiscal capacity, corruption control negatively impacts all innovation indicators. This finding suggests that in countries with large tax revenues, tightened anti-corruption policies may reduce the flexibility in the fiscal incentive system that was previously used to support investment in innovation. This finding suggests that in countries with large tax revenues, stricter anti-corruption policies may unintentionally limit the government's ability to provide flexible fiscal incentives such as tax breaks, subsidies, or special deductions that were previously used to encourage innovation-related investments. For example, before the implementation of these policies, certain firms might have benefited from lenient tax arrangements or informal support that allowed them to allocate more funds toward research and development. However, once anti-corruption regulations tighten, these discretionary incentives are reduced or eliminated, leading to a more rigid fiscal system that may temporarily discourage innovative activities. Firms that were previously able to take advantage of loopholes in the tax system or obtain informal support through relationships with government officials may lose access to resources that support innovation after anti-corruption policies are tightened (Zhou et al., 2019). In addition, reforms aimed at increasing transparency in the tax system may increase the administrative burden for firms, potentially reducing the allocation of funds to R&D in the short term (Cerdeira & Lourenço, 2022). This indicates that while in the long run controlling corruption will create a fairer business environment, it is possible that in the initial phase of reforms, firms face more obstacles in obtaining resources for innovation.

When analyzed by the level of effectiveness of corruption control, it is found that in countries with a high level of corruption control, the Control of Corruption variable has a significant negative impact on the total number of patent applications and patents from domestic residents, but has no significant effect on patents filed by non-residents. These results suggest that even though these countries already have cleaner governance systems, tightened corruption control policies may reduce domestic innovation activity. One of the main reasons is that anti-corruption policy reforms are often accompanied by major changes in business regulations and incentive systems for firms, which can create uncertainty and slow down decision-making in innovative investments (Majeed et al., 2024). On the other hand, foreign companies looking to file patents in these countries are less impacted by such changes, as they generally already have access to broader markets and are less dependent on domestic policy dynamics.

Overall, the findings in this study confirm that corruption control plays a complex role in innovation dynamics in UMIC countries. While previous studies have shown that corruption stifles innovation by increasing investment uncertainty and worsening the business climate (Akkoyunlu & Ramella, 2018; İmamoğlu & Payaslioglu, 2022), the results of this study reveal that the transition towards a more transparent system can also have unintended consequences in the short term. This transition period refers to the phase between the implementation of anti-corruption reforms and the point when their positive effects on innovation begin to materialize. The length of this transition varies depending on the country's institutional maturity, fiscal flexibility, and the presence of compensatory policies. In nations with established regulatory systems such as South Korea or Estonia, the transition tends to be relatively short because anti-corruption reforms are accompanied by innovation-oriented fiscal instruments, like targeted R&D

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

tax credits and digital governance reforms, that simplify administrative procedures. Conversely, in countries with weaker institutional capacity, such as several Latin American UMICs, the transition period can be prolonged, as firms struggle to adapt to new compliance mechanisms and face reduced informal fiscal flexibility. To ensure that the benefits of transparency quickly translate into stronger innovation performance, governments should complement anti-corruption measures with proactive innovation policies such as public–private innovation funds, streamlined licensing systems, and capacity-building programs for SMEs to offset temporary resource rigidities.

Conclusion

This study examines the effects of corruption control on innovation in Upper Middle Income Countries (UMIC). The results show that corruption control has a negative and significant impact on all innovation indicators in the whole sample, indicating a transition effect that initially slows down innovation. Stricter anti-corruption policies can increase compliance costs and complicate bureaucracy, thereby reducing investment incentives in research and development. However, in countries with a high number of patent applications, controlling corruption increases attractiveness for foreign investors and multinational companies, creating a more conducive environment for research collaboration and technology transfer. Whereas, in countries with high tax revenues, corruption controls have a negative impact on innovation as they reduce flexibility in the fiscal incentive system that previously supported innovation investment. Moreover, in countries with high levels of corruption control, tightened anti-corruption policies may reduce domestic innovation activity due to uncertainty in business regulation. These findings confirm that the transition towards more transparent governance may bring short-term challenges to innovation, but may also improve national competitiveness in the long run. Therefore, corruption control policies should be balanced with strategies that support the innovation ecosystem, including more adaptive fiscal incentives and improved quality of business regulation. The results of this study provide important insights for policymakers in UMICs to design anti-corruption strategies that not only reduce economic uncertainty, but also promote sustainable innovation growth. With a more flexible and evidence-based approach, UMIC countries can create a business environment that is more conducive to innovation and global competitiveness.

This study makes a theoretical contribution by enriching the understanding of the relationship between corruption control and innovation in Upper Middle Income Countries (UMICs). Different from previous studies that focus on developed or developing countries in aggregate, this study highlights how the effectiveness of corruption control can have different impacts depending on the level of innovation readiness and fiscal capacity of a country. From a practical perspective, the findings provide insights for policymakers in designing anti-corruption strategies that not only increase transparency, but also strengthen the innovation ecosystem with the right incentives. The results confirm that anti-corruption reforms need to be accompanied by policies that promote ease of doing business, investment in R&D, and a tax system that supports innovative growth.

However, this study has some limitations, including the lack of exploration of other institutional factors that may moderate the relationship between corruption and innovation, such as the legal system or political stability. In addition, this study relied only on quantitative data and did not delve deeper into qualitative factors that may affect the effectiveness of anti-corruption policies. Therefore, it is recommended that future research on this topic integrates qualitative methods, such as interviews with industry representatives and policymakers, to gain a more comprehensive understanding of the dynamics of innovation in the context of controlling corruption. In addition, a cross-regional comparative analysis could be conducted to identify specific patterns that emerge across different country groups. With a holistic approach, future research is expected to provide more effective policy recommendations in creating a sustainable innovation environment.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

References

Akkoyunlu, Ş., & Ramella, D. (2018). Corruption and Economic Development. *Proceedings of the 10th Economics & Finance Conference.* https://doi.org/10.20472/efc.2018.010.001

Anokhin, S., & Schulze, W. S. (2009). Entrepreneurship, innovation, and corruption. *Journal of Business Venturing, 24*(5), 465–476. https://doi.org/10.1016/j.jbusvent.2008.06.001

Bakhtiar, A., Ghazinoory, S. S., Aslani, A., & Mafi, V. (2022). Efficiency-effectiveness assessment of national innovation systems: comparative analysis. *Journal of Science and Technology Policy Management, 13*(3), 625–651. https://doi.org/10.1108/JSTPM-03-2021-0044

Cerdeira, J., & Lourenço, D. (2022). Does corruption impact firm innovation? Evidence from Portugal. *Economies, 10*(7), 173. https://doi.org/10.3390/economies10070173

Chen, X., Chen, G., Lin, M., Tang, K., & Ye, B. (2021). How does anti-corruption affect enterprise green innovation in China's energy-intensive industries? *Environmental Geochemistry and Health, 44*(9), 2919–2942. https://doi.org/10.1007/s10653-021-01125-4

Cvetanović, S., Panić, A. A., & Kostić, A. (2021). National innovation capacity and economic progress of countries. *Economic Themes, 59*(3), 297–314. https://doi.org/10.2478/ethemes-2021-0017

Das, A., Dash, D. P., & Sethi, N. (2020). Innovation, corruption, and economic growth in emerging Asia. *Bulletin of Monetary Economics and Banking, 23*(3), 347–364. https://doi.org/10.21098/bemp.v23i3.1183

dela Rama, M. (2012). Corporate governance and corruption: Ethical dilemmas of Asian business groups. *Journal of Business Ethics, 109*(4), 501–519. https://doi.org/10.1007/s10551-011-1142-0

Dima, A. M., Begu, L. S., Vasilescu, M. D., & Maassen, M. A. (2018). The relationship between the knowledge economy and global competitiveness in the European Union. *Sustainability, 10*(6), 1706. https://doi.org/10.3390/su10061706

DiRienzo, C., & Das, J. (2014). Innovation and role of corruption and diversity. *International Journal of Cross Cultural Management, 15*(1), 51–72. https://doi.org/10.1177/1470595814554790

Doh, J. P., Rodriguez, P., Uhlenbruck, K., Collins, J., & Eden, L. (2003). Coping with corruption in foreign markets. *Academy of Management Perspectives, 17*(3), 114–127. https://doi.org/10.5465/ame.2003.10954775

Dworak, E., Grzelak, M. M., & Roszko-Wójtowicz, E. (2021). Comparison of national innovation systems in the European Union countries. *Risks, 10*(1), 6. https://doi.org/10.3390/risks10010006

Ellis, J. A., Smith, J. D., & White, R. M. (2019). Corruption and corporate innovation. *Journal of Financial and Quantitative Analysis, 55*(7), 2124–2149. https://doi.org/10.1017/s0022109019000735

Farinha, L., Ferreira, J. J., & Nunes, S. (2018). Linking innovation and entrepreneurship to economic growth. *Competitiveness Review, 28*(4), 451–475. https://doi.org/10.1108/cr-07-2016-0045

Farooq, U., Tabash, M. I., Hamouri, B., & Daniel, L. N. (2023). Does control of corruption play its role in enhancing the innovation? Empirical evidence from Asian Region. *International Journal of Innovation Science, 17*(1), 202–217. https://doi.org/10.1108/ijis-05-2023-0110

Games, D. (2019). Enhancing innovation for competitiveness: What could Indonesia learn from Malaysia and Thailand. *Proceedings of the 1st International Conference on ASEAN (IC-ASEAN) "Towards a better ASEAN",* 278–282. https://doi.org/10.1515/9783110678666-037

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Grasso, C. (2024). The dark side of power: corruption and bribery within the energy industry. In *Research Handbook on EU Energy Law and Policy* (pp. 362–382). Edward Elgar Publishing. https://doi.org/10.4337/9781035328024.00026

Gungaa, B., Choijiljav, M., Dashnyam, S., & Lkhagva, B. (2021). Innovation process of the mongolian higher education institution and its development perspective. *Eph - International Journal of Business & Management Science, 7*(1), 1–5. https://doi.org/10.53555/eijbms.v7i1.111

Harraf, A., Ghura, H., Hamdan, A., & Li, X. (2020). Formal institutions and the development of entrepreneurial activity – The contingent role of corruption in emerging economies. *Journal of Entrepreneurship and Public Policy, 10*(1), 15–37. https://doi.org/10.1108/jepp-06-2020-0033

Hemert, P. v., & Nijkamp, P. (2010). Knowledge investments, business R & and innovativeness of countries: A qualitative meta-analytic comparison. *Technological Forecasting and Social Change, 77*(3), 369–384. https://doi.org/10.1016/j.techfore.2009.08.007

Herman, E. (2018). Innovation and entrepreneurship for competitiveness in the EU: An empirical analysis. *Proceedings of the International Conference on Business Excellence, 12*(1), 425–435. https://doi.org/10.2478/picbe-2018-0038

Huang, Q., & Yuan, T. (2021). Does political corruption impede firm innovation? Evidence from the United States. *Journal of Financial and Quantitative Analysis, 56*(1), 213–248.

Huang, Y., Li, K., & Li, P. (2023). Innovation ecosystems and national talent competitiveness: A country-based comparison using fsQCA. *Technological Forecasting and Social Change, 194*, 122733. https://doi.org/10.1016/j.techfore.2023.122733

İmamoğlu, H., & Payaslioglu, C. (2022). Governance content, financial risk and innovation: A panel data analysis. *Business and Management Studies an International Journal, 10*(3), 977–996. https://doi.org/10.15295/bmij.v10i3.2092

Juknevičienė, V. (2019). Key factors for the successful implementation of the national innovation policy: The case of Lithuania. *Annals of Spiru Haret University Economic Series, 19*(2), 25–50. https://doi.org/10.26458/1921

Jungo, J., Madaleno, M., & Botelho, A. (2023). Controlling corruption in African countries: Innovation, financial inclusion and access to education as alternative measures. *International Journal of Social Economics, 50*(6), 766–786. https://doi.org/10.1108/ijse-08-2022-0520

Kiseľáková, D., Šofranková, B., Gombár, M., Čabinová, V., & Onuferová, E. (2019). Competitiveness and its impact on sustainability, business environment, and human development of EU (28) Countries in terms of global multi-criteria indices. *Sustainability, 11*(12), 3365. https://doi.org/10.3390/su11123365

Kumar, P. (2023). How does corruption affect innovation?-New evidence from macro-level data. *Journal of Quantitative Economics, 21*(4), 925–941.

Lomachynska, I., & Podgorna, I. (2018). Innovation potential: Impact on the national economy's competitiveness of the eu developed countries. *Baltic Journal of Economic Studies, 4*(1), 262–270. https://doi.org/10.30525/2256-0742/2018-4-1-262-270

Majeed, M. A., Ahsan, T., & Gull, A. A. (2024). Does corruption sand the wheels of sustainable development? Evidence through green innovation. *Business Strategy and the Environment, 33*(5), 4626–4651. https://doi.org/10.1002/bse.3719

Miranda, R. L. d., Santos, L. F. I. dos, Gomes, G., & Parisotto, I. R. dos S. (2021). Competitiveness influence on global innovation of nations: A cross-sectional analysis. *Independent Journal of Management & Production, 12*(4), 964–978. https://doi.org/10.14807/ijmp.v12i4.1338

Mokthtari Moughari, M., & Daim, T. U. (2023). Developing a model of technological innovation for export development in developing countries. *Technology in Society, 75*, 102338. https://doi.org/10.1016/j.techsoc.2023.102338

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Priya, P., & Sharma, C. (2022). Do financial constraints and corruption limit firms' innovation capability? Evidence from developing economies. *Managerial and Decision Economics, 44*(4), 1935–1961. https://doi.org/10.1002/mde.3792

Rahman, M. M., & Alam, K. (2022). Effects of corruption, technological innovation, globalisation, and renewable energy on carbon emissions in Asian countries. *Utilities Policy, 79*, 101448.

Sen, H., & Orhan, F. (2023). The potential impact of product innovation on employment in healthcare organizations. *Journal of Innovative Healthcare Practices, 4*(3), 201–213. https://doi.org/10.58770/joinihp.1389266

Setor, T. K., Senyo, P. K., & Addo, A. (2021). Do digital payment transactions reduce corruption? Evidence from developing countries. *Telematics and Informatics, 60*, 101577. https://doi.org/10.1016/j.tele.2021.101577

Stratan, A., & Fală, V. (2023). International competitiveness, productivity and innovations. *Competitivitatea și Inovarea în Economia Cunoașterii*, 11-22 https://doi.org/10.53486/cike2022.01

Wen, J., Yin, H.-T., Jang, C.-L., Uchida, H., & Chang, C.-P. (2023). Does corruption hurt green innovation? Yes–Global evidence from cross-validation. *Technological Forecasting and Social Change, 188*, 122313.

Wen, J., Zheng, M., Feng, G., Chen, S. W., & Chang, C. (2018). Corruption and innovation: linear and nonlinear investigations of oecd countries. *The Singapore Economic Review, 65*(01), 103–129. https://doi.org/10.1142/s0217590818500273

Zhou, X., Wei, W., Jang, C.-L., & Chang, C. (2019). The impacts of government r&d expenditure on innovation in Chinese Provinces: what's the role of corruption. *Bulletin of Monetary Economics and Banking, 21*(3), 409–430. https://doi.org/10.21098/bemp.v21i3.977

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Integritas: Jurnal Antikorupsi
Vol 11, No. 2, 2025, pp. 203-218

https://jurnal.kpk.go.id/index.php/integritas
©Komisi Pemberantasan Korupsi

Pengendalian korupsi dan inovasi: Bukti empiris dari negara-negara berpendapatan menengah atas

Nafis Dwi Kartiko *

Universitas Indonesia. Jl. Prof. Dr. Sumitro Djojohadikusumo, Depok, 16424, Indonesia
Directorate General of Taxes, Ministry of Finance of the Republic of Indonesia. Jakarta 12190, Indonesia
Universitas Pelita Harapan University. Jl. Mh Thamrin Bulevard 1100 Tangerang, Banten 15811, Indonesia
nafisdwikartiko@gmail.com
* Corresponding Author

Abstrak*:* Studi ini menganalisis dampak pengendalian korupsi terhadap inovasi di Negara Berpendapatan Menengah Atas (UMIC). Menggunakan data panel dari 54 negara UMIC untuk periode 2014-2022 dengan 486 pengamatan, studi ini menerapkan regresi *Ordinary Least Squares* (OLS) untuk mengidentifikasi hubungan antara variabel. Hasil menunjukkan bahwa pengendalian korupsi memiliki dampak negatif dan signifikan terhadap inovasi pada sampel keseluruhan, menunjukkan efek transisi yang awalnya memperlambat inovasi akibat peningkatan biaya kepatuhan dan kompleksitas birokrasi. Namun, di negara-negara dengan jumlah permohonan paten yang tinggi, pengendalian korupsi meningkatkan daya tarik bagi investor asing, menciptakan lingkungan yang kondusif untuk kolaborasi penelitian dan transfer teknologi. Sementara itu, di negara-negara dengan pendapatan pajak yang tinggi, kebijakan anti-korupsi mengurangi fleksibilitas insentif fiskal yang sebelumnya mendukung inovasi. Oleh karena itu, kebijakan pengendalian korupsi perlu diseimbangkan dengan strategi yang mendukung ekosistem inovasi untuk memastikan pertumbuhan inovasi yang berkelanjutan dan meningkatkan daya saing global.
Keywords: Inovasi; Pengendalian Korupsi; Negara Berpendapatan Menengah Atas; Pendapatan Pajak;

How to Cite: Kartiko, N. D. (2025). Control corruption and innovation: Empirical evidence from upper middle income countries. *Integritas: Jurnal Antikorupsi*, *11*(2), 203-218. https://doi.org/10.32697/integritas.v11i2.1480

Pendahuluan

Inovasi merupakan faktor kunci dalam meningkatkan daya saing nasional, sehingga perannya dalam perekonomian semakin mendapat perhatian dalam penelitian. Inovasi adalah kemampuan untuk menciptakan ide, proses, produk, dan layanan baru yang berkontribusi pada pertumbuhan ekonomi dan peningkatan kesejahteraan (Mokthtari Moughari & Daim, 2023; Sen & Orhan, 2023). Hubungan antara inovasi (terutama inovasi teknologi) dan daya saing nasional tidak dapat dipisahkan dari pembentukan kebijakan, kemajuan pendidikan, dan investasi dalam penelitian dan pengembangan (R&D). Studi empiris menunjukkan perbedaan yang jelas dalam kinerja inovasi antara negara-negara, terutama di dalam Uni Eropa, di mana negara-negara dengan tingkat inovasi rendah hingga menengah seringkali menunjukkan daya saing dan pertumbuhan ekonomi yang terbatas dibandingkan dengan negara-negara dengan tingkat inovasi tinggi (Herman, 2018). Negara-negara maju mengakui inovasi sebagai pendorong utama pertumbuhan ekonomi, sementara negara-negara berkembang memandangnya sebagai sarana untuk mempercepat konvergensi ekonomi dengan negara-negara yang lebih maju (Gungaa et al., 2021).

Perspektif yang berbeda-beda ini mencerminkan keragaman strategi inovasi yang diterapkan oleh negara-negara di seluruh dunia. Selain itu, hubungan antara inovasi dan kewirausahaan juga memainkan peran penting dalam meningkatkan daya saing nasional. Studi menunjukkan bahwa aktivitas kewirausahaan menciptakan ekosistem yang mendukung inovasi, yang pada gilirannya mendorong kemajuan ekonomi (Farinha dkk., 2018; Games, 2019). Negara-negara yang berhasil mendorong kewirausahaan melalui kebijakan yang mendukung cenderung memiliki tingkat inovasi yang lebih tinggi. Selain itu, kapasitas inovasi nasional terbukti memiliki korelasi yang kuat dengan trajektori ekonomi suatu negara, di mana negara-negara dengan sistem inovasi yang kuat umumnya unggul dalam daya saing global (Cvetanović et al., 2021; Lomachynska & Podgorna, 2018). Oleh karena itu, memahami berbagai faktor yang mempengaruhi sistem inovasi

nasional, seperti modal manusia, investasi dalam R&D, serta kebijakan pemerintah, merupakan langkah strategis dalam merancang kebijakan ekonomi yang efektif (Dima et al., 2018; Juknevičienė, 2019). Selain itu, analisis komparatif sistem inovasi nasional menunjukkan bahwa tingkat daya saing inovasi suatu negara bergantung pada efektivitas pemanfaatan sumber daya dan kerangka institusionalnya (Bakhtiar et al.., 2022; Dworak et al.., 2021; Y. Huang et al.., 2023).

Kesuksesan sistem inovasi suatu negara tidak hanya ditentukan oleh jumlah pendanaan, tetapi juga oleh kemampuan untuk mengoordinasikan kerja sama antara berbagai pemangku kepentingan (Miranda et al., 2021; Stratan & Fală, 2023). Kerja sama ini merupakan unsur krusial dalam mendorong pertukaran pengetahuan dan kreativitas yang mengarah pada pengembangan solusi inovatif untuk tantangan sosial yang kompleks. Selain itu, integrasi pendidikan dalam kerangka kebijakan inovasi nasional merupakan faktor penentu utama keberhasilan inovasi suatu negara. Peningkatan kualitas pendidikan, terutama di bidang sains, teknologi, teknik, dan matematika (STEM), telah terbukti dapat meningkatkan kapasitas inovasi nasional dan memperkuat daya saing di tingkat global (Dima et al., 2018; Hemert & Nijkamp, 2010; Kiseľáková et al.., 2019). Negara-negara yang berinvestasi dalam pengembangan tenaga kerja yang terampil lebih mungkin mencapai pertumbuhan ekonomi yang berkelanjutan dan inovatif.

Inovasi telah diakui memiliki berbagai dampak bagi suatu negara, baik dalam meningkatkan daya saing ekonomi maupun dalam mendorong pertumbuhan berkelanjutan. Namun, dalam implementasinya, inovasi sering menghadapi berbagai hambatan struktural yang menghambat efektivitasnya. Salah satu hambatan utama yang dihadapi adalah korupsi, yang dapat melemahkan sistem ekonomi dan secara signifikan menghambat perkembangan inovasi. Korupsi secara luas diakui sebagai hambatan utama bagi inovasi, terutama di negara-negara berkembang dan emerging economies. Meskipun ada pandangan bahwa praktik korupsi, seperti suap, dapat mempercepat proses pengambilan keputusan dalam jangka pendek, konsekuensi jangka panjang cenderung menekan kapasitas inovasi perusahaan. Korupsi meningkatkan biaya transaksi dan menciptakan lingkungan bisnis yang tidak stabil, yang pada gilirannya mengurangi insentif bagi perusahaan untuk berinvestasi dalam teknologi baru dan proses inovatif (Anokhin & Schulze, 2009; Priya & Sharma, 2022). Dalam lingkungan korup, ketidakpastian mengenai potensi pengembalian investasi lebih besar, sehingga menghalangi pengusaha dan inovator untuk mengambil risiko dalam proyek baru. Risiko pengambilalihan keuntungan oleh pejabat korup semakin memperburuk situasi, menyebabkan stagnasi dalam pengembangan inovasi (Ellis et al., 2019).

Selain itu, perusahaan yang menolak terlibat dalam praktik korupsi seringkali menghadapi kerugian kompetitif dibandingkan dengan perusahaan yang bersedia terlibat dalam praktik-praktik tidak etis tersebut, terutama di negara-negara dengan tingkat korupsi yang tinggi (dela Rama, 2012; Doh et al., 2003; Grasso, 2024). Akibatnya, siklus negatif terjadi, di mana integritas dan inovasi semakin terpinggirkan seiring dengan praktik korupsi yang menjadi kebiasaan yang sulit dihilangkan (Das et al., 2020). Beban administratif yang ditimbulkan oleh korupsi juga dapat menghambat atau menunda secara signifikan proses perolehan izin dan persetujuan yang diperlukan dalam pengembangan inovasi. Hal ini mengganggu proses penelitian dan pengembangan (R&D) secara keseluruhan, terutama di negara-negara dengan kerangka institusional yang lemah dan tingkat korupsi yang tinggi (Zhou et al., 2019). Dampak negatif ini lebih terasa bagi perusahaan domestik daripada perusahaan asing yang mungkin sudah memiliki jaringan hubungan yang dapat memitigasi risiko semacam itu (Cerdeira & Lourenço, 2022). Penumpukan hambatan-hambatan ini menciptakan paradoks yang menarik: sementara beberapa perusahaan mungkin melihat praktik korupsi sebagai cara untuk menghindari hambatan regulasi dalam jangka pendek, pada akhirnya, korupsi merusak kepercayaan terhadap institusi, menghambat semangat kompetitif, dan menghalangi inovasi yang berkelanjutan (Majeed et al., 2024).

Hubungan antara korupsi dan inovasi telah menjadi fokus utama berbagai studi, terutama dalam memahami bagaimana pengendalian korupsi memengaruhi kapasitas inovasi suatu negara. Korupsi umumnya menghambat tata kelola yang transparan dan sistematis, menciptakan lingkungan yang tidak kondusif bagi kreativitas dan mengurangi insentif investasi dalam kegiatan inovatif (İmamoğlu & Payaslioglu, 2022). Tata kelola yang efektif, terutama melalui pengendalian korupsi dan kepatuhan terhadap hukum, berkontribusi positif terhadap tingkat inovasi suatu negara (İmamoğlu & Payaslioglu, 2022). Dampak negatif korupsi tidak hanya terbatas pada aspek

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

keuangan, tetapi juga menyebabkan degradasi lingkungan inovasi secara keseluruhan (Akkoyunlu & Ramella, 2018). Di negara-negara berkembang seperti China, kebijakan anti-korupsi yang efektif telah terbukti meningkatkan kepercayaan publik terhadap lembaga pemerintah, yang pada gilirannya memupuk semangat kewirausahaan dan mendorong inovasi (Chen et al., 2021). Keberadaan sistem pembayaran digital juga dapat mengurangi peluang korupsi dan pada akhirnya meningkatkan kapasitas inovasi di negara-negara berkembang (Setor et al., 2021). Selain itu, kualitas institusi memainkan peran penting dalam mendukung inovasi, dengan penelitian menunjukkan bahwa pengendalian korupsi yang lebih baik terkait dengan peningkatan jumlah paten dan hasil inovatif lainnya (Wen et al., 2018).

Di negara-negara Afrika, meningkatkan akses terhadap pendidikan dan inklusi keuangan merupakan salah satu strategi kunci dalam mengurangi dampak negatif korupsi terhadap inovasi (Jungo et al., 2023). Studi yang dilakukan Jungo dkk. (2023) menyarankan bahwa tenaga kerja yang lebih terampil dapat berkontribusi dalam mendorong inovasi, sekaligus mengurangi ketergantungan pada praktik korupsi yang merusak ekosistem bisnis. Korelasi negatif antara tingkat korupsi dan aktivitas inovatif juga ditemukan lebih kuat di negara-negara berpendapatan rendah, meskipun negara-negara dengan ketahanan ekonomi yang lebih tinggi cenderung lebih mampu menahan dampak negatif korupsi (DiRienzo & Das, 2014). Korupsi juga secara langsung menghambat pertumbuhan kewirausahaan, yang merupakan salah satu faktor utama dalam pengembangan inovasi (Harraf dkk., 2020). Negara-negara dengan tingkat korupsi yang lebih rendah menunjukkan lingkungan bisnis yang lebih kondusif bagi kewirausahaan, memungkinkan transformasi ide-ide inovatif menjadi solusi yang dapat diimplementasikan (Harraf et al., 2020). Di kawasan Asia, penelitian menunjukkan bahwa efektivitas kebijakan pengendalian korupsi memiliki korelasi positif yang kuat dengan peningkatan tingkat inovasi (Farooq et al., 2023). Studi ini menegaskan bahwa tata kelola yang baik dan transparan merupakan unsur kunci dalam menciptakan ekosistem inovasi yang berkelanjutan (Farooq et al., 2023).

Penelitian ini bertujuan untuk menyelidiki dampak pengendalian korupsi terhadap tingkat inovasi di Negara Berpendapatan Menengah Atas (UMIC). Studi sebelumnya menunjukkan bahwa korupsi dapat menghambat inovasi dengan meningkatkan risiko ekonomi dan mengurangi insentif investasi dalam penelitian dan pengembangan (Q. Huang & Yuan, 2021; Kumar, 2023). Namun, sebagian besar studi masih berfokus pada negara-negara maju atau berkembang secara umum, sementara studi spesifik tentang dampak korupsi terhadap inovasi di negara-negara UMIC masih terbatas. Selain itu, penelitian yang ada cenderung menyoroti hubungan antara korupsi dan inovasi secara agregat tanpa mempertimbangkan bagaimana pengendalian korupsi dapat memiliki dampak yang berbeda di kelompok negara berpendapatan menengah atas (Wen et al., 2023). Oleh karena itu, penelitian ini bertujuan untuk mengisi kesenjangan literatur dengan mengeksplorasi peran efektivitas pengendalian korupsi terhadap iklim inovasi di negara-negara UMIC. Secara spesifik, penelitian ini akan menguji apakah peningkatan pengawasan dan kebijakan anti-korupsi dapat meningkatkan lingkungan inovasi dengan mengurangi ketidakpastian pasar dan meningkatkan insentif investasi di sektor teknologi (Rahman & Alam, 2022).

Keunikan studi ini terletak pada pendekatan spesifik terhadap negara-negara UMIC yang memiliki karakteristik ekonomi unik, di mana faktor-faktor seperti pertumbuhan ekonomi yang cepat, peningkatan keterbukaan global, dan transisi ke ekonomi berbasis pengetahuan berpotensi memoderasi dampak korupsi terhadap inovasi (Rahman & Alam, 2022; Wen et al., 2023). Berbeda dengan studi sebelumnya, penelitian ini akan menganalisis bagaimana pengendalian korupsi dapat memperkuat daya saing inovasi dalam berbagai kondisi negara, misalnya berdasarkan pendapatan pajak, permohonan paten, dan pengendalian korupsi. Secara teoritis, penelitian ini berkontribusi dalam memperkaya pemahaman tentang dinamika hubungan antara korupsi, pengendaliannya, dan inovasi dalam konteks ekonomi menengah atas. Dari perspektif praktis, hasil penelitian ini dapat memberikan rekomendasi bagi pembuat kebijakan di negara-negara UMIC untuk merancang strategi anti-korupsi yang lebih efektif guna mendukung ekosistem inovasi dan pertumbuhan teknologi. Oleh karena itu, penelitian ini diharapkan dapat memberikan wawasan baru bagi akademisi, pembuat kebijakan, dan pemangku kepentingan terkait dalam merancang kebijakan yang lebih inklusif dan berbasis bukti dalam mempromosikan inovasi berkelanjutan.

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Metode

Data dan Sampel

Studi ini menggunakan data panel dari 54 negara yang termasuk dalam kategori Negara Berpendapatan Menengah Atas (UMIC) dengan periode pengamatan dari tahun 2014 hingga 2022. Dengan cakupan waktu selama sembilan tahun dan jumlah negara yang diamati, total pengamatan dalam studi ini mencapai 486 pengamatan. Data yang digunakan dalam studi ini diperoleh dari berbagai sumber resmi, yaitu Dana Moneter Internasional (IMF), Buku Tahunan Statistik Keuangan Pemerintah dan berkas data, serta perkiraan Produk Domestik Bruto (PDB) yang diterbitkan oleh Bank Dunia dan Organisasi untuk Kerjasama Ekonomi dan Pembangunan (OECD). Pemilihan negara-negara UMIC didasarkan pada klasifikasi pendapatan yang ditetapkan oleh Bank Dunia, yang mencerminkan karakteristik ekonomi dengan tingkat pertumbuhan relatif tinggi dan transisi menuju ekonomi berbasis inovasi. Periode 2014-2022 dipilih untuk menangkap dinamika perubahan dalam pengendalian korupsi dan inovasi di negara-negara UMIC, terutama sebagai respons terhadap kebijakan anti-korupsi dan reformasi institusional yang diterapkan dalam dekade terakhir. Penggunaan data panel memungkinkan studi ini menganalisis pola hubungan antara variabel yang diteliti dengan lebih akurat dengan mempertimbangkan dimensi waktu dan heterogenitas antar negara.

Operasionalisasi Variabel

Operasionalisasi variabel dalam studi ini mencakup variabel dependen, variabel independen, dan variabel kontrol yang dianalisis untuk memahami hubungan antara pengendalian korupsi dan inovasi di negara-negara berpendapatan menengah atas. Variabel dependen dalam studi ini meliputi jumlah total paten (LN_PATENT), jumlah permohonan paten dari penduduk domestik (LN_PATENTRES), dan jumlah permohonan paten dari non-penduduk (LN_PATENTNONRES). Variabel-variabel ini digunakan sebagai indikator utama untuk mengukur tingkat inovasi di setiap negara. Paten adalah ukuran standar yang umum digunakan dalam penelitian ekonomi untuk mewakili output inovasi suatu negara.

Variabel independen utama dalam studi ini adalah pengendalian korupsi (CC), yang mengukur sejauh mana korupsi dapat dikendalikan di suatu negara. Pengendalian korupsi yang lebih baik diharapkan dapat menciptakan lingkungan bisnis yang lebih stabil, mengurangi ketidakpastian investasi, dan mendorong peningkatan inovasi. Selain itu, studi ini juga menggunakan beberapa variabel kontrol untuk memperhitungkan faktor-faktor lain yang mungkin mempengaruhi inovasi. Variabel kontrol yang digunakan meliputi skor *Ease of Doing Business* (EODB), yang mencerminkan seberapa mudah bagi bisnis untuk beroperasi di suatu negara, serta kontribusi sektor pertanian, kehutanan, dan perikanan terhadap Produk Domestik Bruto (AVA). Selain itu, nilai tambah sektor industri (Industry Value Added - IVA) dan sektor manufaktur (Manufacturing Value Added - MVA) juga dimasukkan sebagai variabel kontrol untuk mengukur peran masing-masing sektor dalam mendorong inovasi. Tingkat pengangguran (UNEMP) juga dipertimbangkan sebagai faktor yang dapat memengaruhi dinamika tenaga kerja dan insentif untuk inovasi. Akhirnya, pendapatan pajak (TR) dimasukkan sebagai indikator kapasitas fiskal pemerintah untuk mendukung kebijakan inovasi dan investasi dalam R&D. Rincian lebih lanjut disajikan dalam Tabel 1.

Tabel 1. Operasionalisasi Variabel

Variabel	Operasionalisasi
Variabel Dependen	
Total Paten (LN_PATENT)	"Variabel Total Paten diukur menggunakan logaritma alami dari jumlah total permohonan paten yang diajukan oleh penduduk dalam negeri dan penduduk luar negeri di suatu negara."
Permohonan paten dari penduduk (LN_PATENTRES)	"Variabel Paten diukur menggunakan logaritma alami dari total permohonan dari penduduk, yang merujuk pada jumlah permohonan paten yang diajukan oleh individu atau entitas domestik melalui Perjanjian Kerjasama Paten atau kantor paten nasional. Indikator ini digunakan

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Variabel	Operasionalisasi
	untuk mencerminkan kapasitas inovasi domestik yang berasal dari penduduk atau perusahaan yang beroperasi di dalam suatu negara."
Permohonan paten dari non-penduduk (LN_PATENTNONRES)	"Variabel Paten diukur menggunakan logaritma alami dari total permohonan paten dari non-penduduk, yang mengukur jumlah permohonan paten yang diajukan oleh individu atau entitas asing melalui Perjanjian Kerjasama Paten (PCT) atau kantor paten nasional. Indikator ini mencerminkan daya tarik suatu negara bagi inovator global serta kebijakan yang mendukung investasi asing dalam penelitian dan pengembangan."
Variabel Independen	
Pengendalian Korupsi (CC)	"Pengendalian Korupsi mengukur persepsi sejauh mana kekuasaan publik digunakan untuk keuntungan pribadi, termasuk bentuk korupsi kecil dan besar, serta "penguasaan" negara oleh elit dan kepentingan swasta. Peringkat persentil menunjukkan peringkat negara di antara semua negara yang tercakup dalam indikator agregat, dengan 0 mewakili peringkat terendah dan 100 mewakili peringkat tertinggi."
Variabel Kontrol	
Skor Kemudahan Berusaha (EODB)	"Skor kemudahan berusaha membandingkan ekonomi dengan praktik regulasi terbaik, menunjukkan sejauh mana kinerja regulasi mendekati yang terbaik pada setiap indikator Doing Business. Skor ekonomi ditampilkan pada skala 0 hingga 100, di mana 0 mewakili kinerja regulasi terburuk dan 100 kinerja regulasi terbaik.""
Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA)	"Pertanian, kehutanan, dan perikanan sesuai dengan divisi ISIC 1-3 dan mencakup kehutanan, perburuan, dan perikanan, serta budidaya tanaman dan produksi ternak. Nilai tambah adalah output bersih suatu sektor setelah menjumlahkan semua output dan mengurangkan input intermediet. Perhitungannya tidak termasuk pengurangan untuk depresiasi aset buatan atau deplesi dan degradasi sumber daya alam. Asal usul nilai tambah ditentukan oleh Klasifikasi Industri Standar Internasional (ISIC), revisi 4. Catatan: Untuk negara-negara VAB, nilai tambah bruto pada biaya faktor digunakan sebagai pembilang."
Nilai Tambah Industri (IVA)	"Industri (termasuk konstruksi) mencakup divisi ISIC 05-43 dan meliputi manufaktur (divisi ISIC 10-33). NTI mencakup nilai tambah di sektor pertambangan, manufaktur (juga dilaporkan sebagai subkelompok terpisah), konstruksi, listrik, air, dan gas. Nilai tambah adalah output bersih suatu sektor setelah menjumlahkan semua output dan mengurangkan input intermediet. Nilai tambah dihitung tanpa pengurangan untuk depresiasi aset buatan atau deplesi dan degradasi sumber daya alam."
Nilai Tambah Manufaktur MVA)	"Manufaktur merujuk pada industri yang termasuk dalam divisi ISIC 15-37. Nilai tambah adalah output bersih suatu sektor setelah menjumlahkan semua output dan mengurangkan input intermediet. Perhitungannya tidak termasuk pengurangan untuk depresiasi aset yang diproduksi atau deplesi dan degradasi sumber daya alam."
Pengangguran (UNEMP)	"Pengangguran merujuk pada proporsi angkatan kerja yang tidak bekerja tetapi tersedia dan mencari pekerjaan. Definisi angkatan kerja dan pengangguran bervariasi antar negara."
Penerimaan Pajak (TR)	"Pendapatan pajak merujuk pada transfer wajib ke pemerintah pusat untuk tujuan publik. Beberapa transfer wajib seperti denda, sanksi, dan sebagian besar kontribusi jaminan sosial dikecualikan. Pengembalian dan koreksi atas pendapatan pajak yang dikumpulkan secara salah diperlakukan sebagai pendapatan negatif."

Model Ekonometrik dan Prosedur Estimasi

Penelitian ini bertujuan untuk menganalisis dampak pengendalian korupsi terhadap inovasi di Negara Berpendapatan Menengah Atas (UMIC) menggunakan pendekatan ekonometrik. Model estimasi yang digunakan dalam penelitian ini adalah regresi Ordinary Least Squares (OLS), yang

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

memungkinkan identifikasi hubungan antara variabel independen dan variabel dependen dengan mempertimbangkan variabel kontrol. Variabel dependen dalam penelitian ini terdiri dari jumlah total permohonan paten (LN_PATENT), permohonan paten dari penduduk domestik (LN_PATENTRES), dan permohonan paten dari non-penduduk (LN_PATENTNONRES). Variabel independen utama adalah Pengendalian Korupsi (CC), yang mengukur efektivitas pengendalian korupsi di suatu negara. Variabel C_(i,d) mewakili variabel kontrol, yang meliputi Skor Kemudahan Berusaha (EODB), Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA), Nilai Tambah Industri (IVA), Nilai Tambah Manufaktur (MVA), Pengangguran (UNEMP), dan Pendapatan Pajak (TR). Berikut adalah model ekonometrik yang digunakan dalam studi ini.

$$Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

$$Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

$$Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$$

Deskripsi:
i = data penampang (data negara)
d = data deret waktu (data periode tahunan)

Hasil dan Pembahasan

Statistik Deskriptif dan Koefisien Korelasi

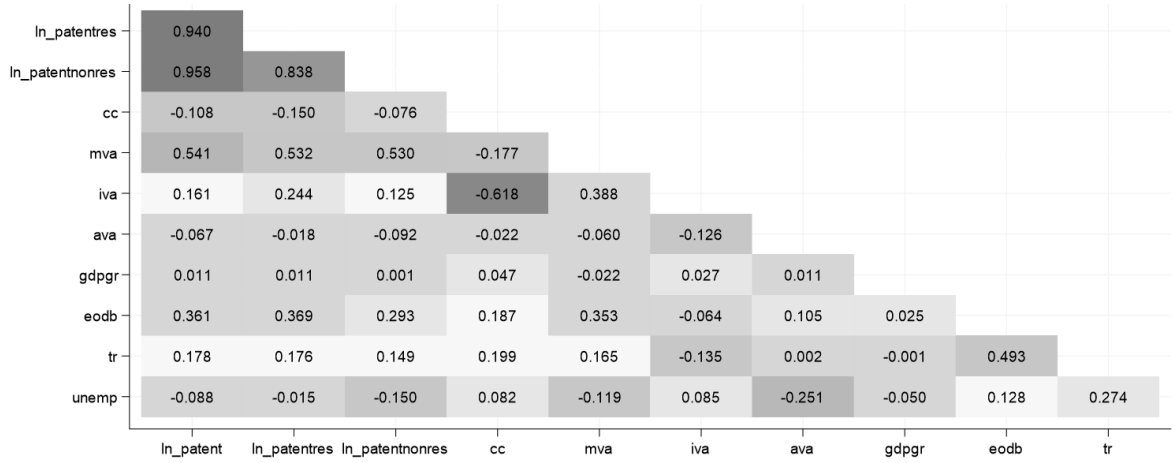
Analisis statistik deskriptif memberikan gambaran umum tentang distribusi variabel yang digunakan dalam studi ini berdasarkan 486 pengamatan. Rata-rata jumlah total permohonan paten yang diajukan di UMIC, diukur dengan logaritma alami (LN_PATENT), adalah 4,3919 dengan simpangan baku 3,5531. Nilai minimum untuk variabel ini adalah 0,0000, sementara nilai maksimum mencapai 14,2765, menunjukkan disparitas yang signifikan dalam tingkat inovasi antar negara. Rata-rata jumlah permohonan paten yang diajukan oleh penduduk domestik (LN_PATENTRES) adalah 3,3148 dengan simpangan baku 3,2580, sementara jumlah permohonan paten dari non-penduduk (LN_PATENTNONRES) memiliki rata-rata yang lebih tinggi yaitu 3,7676 dengan simpangan baku 3,3582. Variabel Pengendalian Korupsi (CC), yang mencerminkan tingkat efektivitas pengendalian korupsi di suatu negara, memiliki nilai rata-rata 41,7975 dengan simpangan baku 19,9509. Nilai minimum variabel ini adalah 0,9524, sedangkan nilai maksimum mencapai 79,5238, menunjukkan variasi yang signifikan dalam efektivitas pengendalian korupsi di antara negara-negara UMIC. Variabel Kemudahan Berusaha (EODB), yang mengukur kemudahan berbisnis di suatu negara, memiliki rata-rata 60,1089 dengan simpangan baku 18,0730, dengan rentang nilai dari 0,0000 hingga 83,7339.

Tabel 2. Statistik Deskriptif

Variabel	Obs	Mean	Std. dev.	Min	Maks
LN_PATENT	486	4.3919	3.5531	0.0000	14.2765
LN_PATENTRES	486	3.3148	3.2580	0.0000	14.1708
LN_PATENTNONRES	486	3.7676	3.3582	0.0000	11.9768
CC	486	41.7975	19.9509	0.9524	79.5238
EODB	486	60.1089	18.0730	0.0000	83.7339
AVA	486	7.6808	4.1706	0.0000	24.9659
IVA	486	27.3255	12.0142	0.0000	76.8381
MVA	486	11.4730	6.8287	0.0000	30.3964
GDPGR	486	2.2897	6.3154	-32.9088	37.5079
UNEMP	486	8.9647	7.1092	0.0000	34.0070
TR	486	11.9106	8.6203	0.0000	34.6287

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Variabel sektor ekonomi juga menunjukkan variasi yang signifikan. Kontribusi sektor pertanian, kehutanan, dan perikanan terhadap PDB (AVA) memiliki rata-rata 7,6808 dengan simpangan baku 4,1706, sementara kontribusi sektor industri (IVA) memiliki rata-rata yang lebih tinggi sebesar 27,3255 dengan simpangan baku 12,0142. Nilai tambah sektor manufaktur (MVA) memiliki rata-rata 11,4730 dengan simpangan baku 6,8287, mencerminkan kontribusi yang relatif stabil terhadap perekonomian negara-negara UMIC. Laju pertumbuhan ekonomi (GDPGR) memiliki rata-rata 2,2897 dengan simpangan baku 6,3154, menunjukkan fluktuasi yang signifikan dengan nilai minimum -32,9088 dan maksimum 37,5079. Sementara itu, tingkat pengangguran (UNEMP) memiliki rata-rata 8,9647 dengan simpangan baku 7,1092, dengan nilai minimum 0,0000 dan maksimum 34,0070, menunjukkan ketidakmerataan tingkat pengangguran antar negara. Akhirnya, variabel pendapatan pajak (TR) memiliki rata-rata 11,9106 dengan simpangan baku 8,6203, dengan rentang nilai antara 0,0000 dan 34,6287, menunjukkan perbedaan yang signifikan dalam kapasitas fiskal pemerintah negara-negara UMIC untuk mengumpulkan pendapatan pajak.



Gambar 1. Matriks Korelasi

Hasil analisis korelasi menunjukkan hubungan yang kuat antara variabel utama yang berkontribusi terhadap inovasi (dibahas dalam Gambar 1). Variabel Pengendalian Korupsi (cc) menunjukkan korelasi negatif dengan ln_patentres dan ln_patentnonres, masing-masing sebesar -0.150 dan -0.076, yang menunjukkan bahwa dalam beberapa kasus, peningkatan pengendalian korupsi tidak selalu memiliki dampak langsung terhadap peningkatan permohonan paten. Selain itu, variabel Nilai Tambah Manufaktur (mva) memiliki korelasi positif dengan ln_patent (0.541), yang menyarankan bahwa peningkatan aktivitas manufaktur dapat berkontribusi pada peningkatan inovasi. Selain itu, Pendapatan Pajak (tr) memiliki korelasi positif dengan Kemudahan Berusaha (eodb) sebesar 0.493, menunjukkan bahwa negara-negara dengan iklim bisnis yang lebih kondusif cenderung memiliki pendapatan pajak yang lebih tinggi. Di sisi lain, tingkat pengangguran (unemp) memiliki korelasi negatif dengan beberapa variabel ekonomi, termasuk Pertumbuhan Produk Domestik Bruto (gdpgr) dan Nilai Tambah Industri (iva), menunjukkan bahwa pertumbuhan ekonomi dan industri dapat membantu mengurangi tingkat pengangguran. Sementara itu, tingkat pengangguran (unemp) memiliki korelasi negatif dengan beberapa variabel ekonomi, termasuk Pertumbuhan Produk Domestik Bruto (gdpgr) dan Nilai Tambah Pertanian, Kehutanan, dan Perikanan (ava), menunjukkan bahwa pertumbuhan ekonomi dan industri dapat membantu mengurangi tingkat pengangguran.

Analisis Statistik Multivariat

Analisis regresi dalam studi ini menguji pengaruh pengendalian korupsi terhadap inovasi, yang diukur melalui jumlah total permohonan paten (LN_PATENT), permohonan paten dari penduduk domestik (LN_PATENTRES), dan permohonan paten dari non-penduduk (LN_PATENTNONRES) (dibahas dalam Tabel 3). Hasil regresi menunjukkan bahwa variabel Pengendalian Korupsi (CC) memiliki koefisien negatif dan signifikan pada semua variabel dependen, dengan tingkat signifikansi 1% untuk LN_PATENT (β = -0.0212, t = -2.83), 5% untuk LN_PATENTRES (β = -0.0174,

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

t = -2.38), dan 10% untuk LN_PATENTNONRES (β = -0.0136, t = -1.90). Temuan ini menunjukkan bahwa peningkatan kontrol terhadap korupsi dapat berdampak negatif pada jumlah permohonan paten, kemungkinan mencerminkan efek transisi dalam lingkungan bisnis yang lebih transparan. Variabel Kemudahan Berusaha (EODB) memiliki dampak positif dan signifikan pada semua variabel inovasi, dengan koefisien 0,0442 untuk LN_PATENT (t = 4,96), 0,0430 untuk LN_PATENTRES (t = 5,36), dan 0,0274 untuk LN_PATENTNONRES (t = 3,55), semua pada tingkat signifikansi 1%. Hasil ini menunjukkan bahwa semakin tinggi kemudahan berbisnis di suatu negara, semakin besar kemungkinan peningkatan aktivitas inovatif.

Tabel 3. Hasil Regresi untuk Seluruh Sampel

"Tabel ini menyajikan hasil regresi yang menguji pengaruh pengendalian korupsi terhadap inovasi. Model regresi yang digunakan adalah: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$, $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$, dan $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ Variabel $C_{i,d}$ mewakili variabel kontrol, yang meliputi Skor Kemudahan Berusaha (EODB), Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA), Nilai Tambah Industri (IVA), Nilai Tambah Manufaktur (MVA), Pengangguran (UNEMP), dan Pendapatan Pajak (TR). Tabel ini mencakup koefisien regresi dan statistik t $\left(\frac{b}{t_{stat}}\right)$. Regresi robust telah disajikan untuk memperhitungkan heteroskedastisitas dan autokorelasi. Tingkat signifikansi ditandai dengan ***, **, dan *, yang masing-masing sesuai dengan 1%, 5%, dan 10%."

	(1)	(2)	(3)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0212***	-0.0174**	-0.0136*
	(-2.83)	(-2.38)	(-1.90)
EODB	0.0442***	0.0430***	0.0274***
	(4.96)	(5.36)	(3.55)
AVA	-0.0810***	-0.0128	-0.104***
	(-2.80)	(-0.50)	(-3.85)
IVA	-0.0222	0.00858	-0.0272**
	(-1.64)	(0.66)	(-2.12)
MVA	0.234***	0.197***	0.231***
	(8.62)	(7.23)	(9.88)
GDPGR	0.0114	0.00938	0.00433
	(0.59)	(0.55)	(0.24)
UNEMP	-0.0388*	0.00107	-0.0667***
	(-1.74)	(0.06)	(-3.09)
TR	0.0114	0.00549	0.0160
	(0.64)	(0.36)	(0.98)
_cons	1.348*	-1.038	1.974***
	(1.88)	(-1.47)	(2.97)
N	486	486	486
R^2-Adj	0.333	0.323	0.314
F_Stat	48.71	37.57	45.53
Prob > F	0.000	0.000	0.000

Hasil analisis regresi dibagi menjadi dua kategori berdasarkan jumlah permohonan paten di Negara Berpendapatan Menengah Atas (UMIC) (dibahas dalam Tabel 4). Model 1, 2, dan 3 mewakili negara-negara dengan jumlah permohonan paten di bawah rata-rata (Negara dengan Jumlah Permohonan Paten Rendah), sementara Model 4, 5, dan 6 mewakili negara-negara dengan jumlah permohonan paten di atas rata-rata (Negara dengan Jumlah Permohonan Paten Tinggi). Pembagian ini dilakukan untuk mengevaluasi apakah dampak pengendalian korupsi terhadap inovasi berbeda antara negara-negara dengan tingkat inovasi relatif rendah dan tinggi. Dalam kategori

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

negara dengan jumlah paten rendah, Pengendalian Korupsi (CC) tidak menunjukkan hubungan yang signifikan dengan semua variabel inovasi, termasuk jumlah total permohonan paten (LN_PATENT), paten yang diajukan oleh penduduk domestik (LN_PATENTRES), dan paten yang diajukan oleh non-penduduk (LN_PATENTNONRES). Di sisi lain, di negara-negara dengan jumlah paten yang tinggi, CC memiliki dampak positif dan signifikan terhadap permohonan paten oleh pihak non-penduduk (LN_PATENTNONRES), dengan koefisien sebesar 0,0390 (t = 3,50, p < 0,01). Temuan ini menunjukkan bahwa negara-negara dengan sistem inovasi yang lebih maju lebih mampu memanfaatkan kebijakan pengendalian korupsi untuk meningkatkan investasi paten oleh entitas asing. Dampak Ease of Doing Business (EODB) juga menunjukkan perbedaan yang mencolok antara kedua kelompok. Di negara-negara dengan jumlah paten yang rendah, variabel ini memiliki korelasi positif tetapi tidak signifikan dengan inovasi. Namun, di negara-negara dengan jumlah paten yang tinggi, EODB memiliki dampak negatif yang signifikan terhadap LN_PATENT (β = -0,0546, t = -2,13, p < 0,05) dan LN_PATENTNONRES (β = -0,106, t = -4,59, p < 0,01). Hasil ini menunjukkan bahwa peraturan bisnis yang lebih kompleks mungkin menjadi hambatan dalam lingkungan inovasi yang lebih maju.

Tabel 4. Hasil Regresi untuk Pembagian Sampel Berdasarkan Negara dengan Permohonan Paten Tinggi dan Rendah

"Tabel ini menampilkan hasil regresi yang menguji dampak pengendalian korupsi terhadap inovasi. Model regresi yang digunakan adalah: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (1) dan (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (2) dan (5)), and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (3) dan (6)). Variabel $C_{i,d}$ mewakili variabel kontrol, yang meliputi Skor Kemudahan Berusaha (EODB), Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA), Nilai Tambah Industri (IVA), Nilai Tambah Manufaktur (MVA), Pengangguran (UNEMP), dan Pendapatan Pajak (TR). Tabel ini mencakup koefisien regresi dan statistik t $\left(\frac{b}{t_{stat}}\right)$. Regresi robust telah disajikan untuk memperhitungkan heteroskedastisitas dan autokorelasi. Tingkat signifikansi ditandai dengan ***, **, dan *, yang masing-masing sesuai dengan 1%, 5%, dan 10%."

	Negara dengan Jumlah Permohonan Paten Rendah			Negara dengan Jumlah Permohonan Paten Tinggi		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0110	-0.00474	-0.00894	0.00820	-0.00828	0.0390***
	(-1.37)	(-1.08)	(-1.14)	(0.94)	(-0.94)	(3.50)
EODB	0.00945	0.00135	0.00375	-0.0546**	0.00296	-0.106***
	(1.24)	(0.24)	(0.54)	(-2.13)	(0.10)	(-4.59)
AVA	-0.108***	-0.0260	-0.122***	-0.0667*	-0.0146	-0.135***
	(-4.38)	(-1.60)	(-5.54)	(-1.83)	(-0.43)	(-3.08)
IVA	-0.0553***	-0.0222***	-0.0486***	-0.0361	-0.0181	-0.0623***
	(-4.33)	(-3.43)	(-3.80)	(-1.56)	(-0.78)	(-2.85)
MVA	0.105***	0.0555***	0.110***	0.291***	0.262***	0.271***
	(4.14)	(3.70)	(4.49)	(11.41)	(9.07)	(11.01)
GDPGR	0.0112	0.00535	0.00978	-0.0305	-0.0217	-0.0412
	(0.73)	(0.70)	(0.68)	(-1.15)	(-0.79)	(-1.41)
UNEMP	-0.0460**	0.00749	-0.0759***	-0.0000597	0.0649**	-0.0843**
	(-2.57)	(0.65)	(-4.74)	(-0.00)	(2.30)	(-2.37)
TR	0.0314**	0.0212**	0.0388***	-0.0481	-0.0839*	-0.0451
	(2.43)	(2.47)	(3.21)	(-1.16)	(-1.93)	(-1.11)
_cons	3.233***	0.962***	3.308***	8.834***	3.822**	12.49***
	(4.67)	(2.71)	(4.89)	(6.28)	(2.46)	(8.91)
N	261	261	261	225	225	225
R^2-Adj	0.191	0.0995	0.233	0.419	0.359	0.413
F_Stat	13.94	9.510	15.46	26.95	16.31	30.30
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Hasil analisis regresi ini mengkaji dampak pengendalian korupsi terhadap inovasi dengan membagi sampel berdasarkan tingkat penerimaan pajak negara-negara berpendapatan menengah atas (UMIC) (dibahas dalam Tabel 5). Model 1, 2, dan 3 mewakili negara-negara dengan pendapatan pajak di bawah rata-rata (Negara dengan Pendapatan Pajak Rendah), sementara Model 4, 5, dan 6 mencerminkan negara-negara dengan pendapatan pajak di atas rata-rata (Negara dengan Pendapatan Pajak Tinggi). Pembedaan ini memungkinkan analisis yang lebih mendalam tentang bagaimana kapasitas fiskal memoderasi hubungan antara pengendalian korupsi dan inovasi. Di negara-negara dengan pendapatan pajak rendah, variabel Pengendalian Korupsi (CC) tidak memiliki dampak signifikan terhadap inovasi, baik pada jumlah total permohonan paten (LN_PATENT), paten dari penduduk domestik (LN_PATENTRES), maupun paten dari non-penduduk (LN_PATENTNONRES). Sebaliknya, di negara-negara dengan pendapatan pajak tinggi, CC menunjukkan dampak negatif yang signifikan pada ketiga variabel inovasi, dengan koefisien -0,0433 untuk LN_PATENT (t = -5,65, p < 0,01), -0,0458 untuk LN_PATENTRES (t = -6,95, p < 0.01), dan -0.0251 untuk LN_PATENTNONRES (t = -2.91, p < 0.01). Hasil ini menunjukkan bahwa di negara-negara dengan kapasitas fiskal yang lebih besar, peningkatan pengendalian korupsi mungkin memiliki efek transisi yang menghambat inovasi dalam jangka pendek.

Tabel 5. Hasil Regresi untuk Pembagian Sampel Berdasarkan Negara dengan Pendapatan Pajak Tinggi dan Rendah

"Tabel ini menampilkan hasil regresi yang menguji dampak pengendalian korupsi terhadap inovasi. Model regresi yang digunakan adalah:$Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (1) dan (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (2) dan (5)), and $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (3) dan (6)). Variabel $C_{i,d}$ mewakili variabel kontrol, yang meliputi Skor Kemudahan Berusaha (EODB), Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA), Nilai Tambah Industri (IVA), Nilai Tambah Manufaktur (MVA), Pengangguran (UNEMP), dan Pendapatan Pajak (TR). Tabel ini mencakup koefisien regresi dan statistik t $\left(\frac{b}{t_{stat}}\right)$. Regresi robust telah disajikan untuk memperhitungkan heteroskedastisitas dan autokorelasi. Tingkat signifikansi ditandai dengan ***, **, dan *, yang masing-masing sesuai dengan 1%, 5%, dan 10%."

	Negara dengan Pendapatan Pajak Rendah			Negara dengan Pendapatan Pajak Tinggi		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	0.00574	0.0161	0.00880	-0.0433***	-0.0458***	-0.0251***
	(0.38)	(1.05)	(0.69)	(-5.65)	(-6.95)	(-2.91)
EODB	0.0219*	0.0259**	0.00991	0.0188	0.0504**	-0.0227
	(1.84)	(2.49)	(0.97)	(0.87)	(2.46)	(-1.02)
AVA	0.128**	0.0745	0.135**	-0.155***	-0.0419	-0.206***
	(2.10)	(1.35)	(2.47)	(-5.42)	(-1.60)	(-7.13)
IVA	-0.00811	0.0335	-0.00602	0.0330**	0.0397***	0.00707
	(-0.36)	(1.50)	(-0.32)	(2.08)	(2.86)	(0.35)
MVA	0.189***	0.191***	0.165***	0.253***	0.182***	0.275***
	(4.18)	(4.25)	(4.48)	(12.50)	(10.28)	(10.26)
GDPGR	0.0379	0.0363	0.0290	-0.0384*	-0.0315	-0.0470*
	(1.46)	(1.43)	(1.29)	(-1.71)	(-1.62)	(-1.90)
UNEMP	-0.0564	-0.0227	-0.0744**	0.0356	0.0606**	-0.00528
	(-1.51)	(-0.64)	(-2.37)	(1.27)	(2.51)	(-0.18)
TR	0.0485	-0.0136	0.0801**	-0.0727***	-0.0371*	-0.0824***
	(1.36)	(-0.41)	(2.57)	(-2.80)	(-1.68)	(-2.80)
_cons	-0.367	-2.788**	-0.168	4.073**	-0.205	6.717***
	(-0.30)	(-2.27)	(-0.16)	(2.56)	(-0.14)	(4.10)
N	207	207	207	279	279	279
R^2-Adj	0.260	0.267	0.289	0.526	0.449	0.449
F_Stat	11.55	9.535	13.81	91.41	78.05	61.68

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Hasil analisis regresi ini mengevaluasi dampak pengendalian korupsi terhadap inovasi dengan membagi sampel berdasarkan tingkat efektivitas pengendalian korupsi di negara-negara UMIC. Model 1, 2, dan 3 mewakili negara-negara dengan tingkat pengendalian korupsi di bawah rata-rata (Negara dengan Pengendalian Korupsi Rendah), sementara Model 4, 5, dan 6 mewakili negara-negara dengan tingkat pengendalian korupsi di atas rata-rata (Negara dengan Pengendalian Korupsi Tinggi). Pembagian ini dilakukan untuk memahami apakah efektivitas pengendalian korupsi memiliki dampak yang berbeda terhadap inovasi di kedua kelompok negara tersebut. Hasil regresi menunjukkan bahwa di negara-negara dengan tingkat pengendalian korupsi rendah, variabel Pengendalian Korupsi (CC) tidak memiliki dampak signifikan terhadap inovasi, baik untuk jumlah total permohonan paten (LN_PATENT), permohonan paten dari penduduk domestik (LN_PATENTRES), maupun permohonan paten dari non-penduduk (LN_PATENTNONRES). Sebaliknya, di negara-negara dengan kontrol korupsi tinggi, CC memiliki dampak negatif yang signifikan terhadap LN_PATENT (β = -0.0307, t = -2.31, p < 0.05) dan LN_PATENTRES (β = -0.0310, t = -2.70, p < 0.01), tetapi tidak pada LN_PATENTNONRES. Temuan ini menunjukkan bahwa meskipun pengendalian korupsi yang lebih baik umumnya dianggap meningkatkan inovasi, pada tahap awal perbaikan institusional, transisi menuju tata kelola yang lebih bersih dapat menciptakan hambatan dalam jangka pendek.

Tabel 6. Hasil Regresi untuk Pembagian Sampel Berdasarkan Negara dengan Pengendalian Korupsi Tinggi dan Rendah

"Tabel ini menyajikan hasil regresi yang menguji pengaruh pengendalian korupsi terhadap inovasi. Model regresi yang digunakan adalah: $Ln_Patent_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (1) dan (4)), $Ln_Patentres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (2) dan (5)), dan $Ln_Patentnonres_{i,d} = \beta_0 + \beta_1 CC_{i,d} + \sum_{i=2}^{n} \beta_i C_{i,d} + \epsilon$ (untuk Model (3) dan (6)). Variabel $C_{i,d}$ mewakili variabel kontrol, yang meliputi Skor Kemudahan Berusaha (EODB), Nilai Tambah Pertanian, Kehutanan, dan Perikanan (AVA), Nilai Tambah Industri (IVA), Nilai Tambah Manufaktur (MVA), Pengangguran (UNEMP), dan Pendapatan Pajak (TR). Tabel ini mencakup koefisien regresi dan statistik t $\left(\frac{b}{t_{stat}}\right)$. Regresi robust telah disajikan untuk memperhitungkan heteroskedastisitas dan autokorelasi. Tingkat signifikansi ditandai dengan ***, **, dan *, yang masing-masing sesuai dengan 1%, 5%, dan 10%."

	Negara dengan Pengendalian Korupsi Rendah			Negara dengan Pengendalian Korupsi Tinggi		
	(1)	(2)	(3)	(4)	(5)	(6)
	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES	LN_PATENT	LN_PATENTRES	LN_PATENTNONRES
CC	-0.0262	-0.0239	-0.0121	-0.0307**	-0.0310***	-0.00841
	(-1.14)	(-1.17)	(-0.54)	(-2.31)	(-2.70)	(-0.61)
EODB	0.0861***	0.0979***	0.0466***	0.0263**	0.0206**	0.0177*
	(5.90)	(7.16)	(3.46)	(2.53)	(2.21)	(1.83)
AVA	0.114*	0.131**	0.0740	-0.223***	-0.120***	-0.236***
	(1.93)	(2.43)	(1.33)	(-5.46)	(-3.28)	(-6.33)
IVA	-0.0251	0.00163	-0.0415**	-0.0271	-0.00732	-0.0283
	(-1.36)	(0.10)	(-2.28)	(-0.93)	(-0.31)	(-0.91)
MVA	0.106***	0.0324	0.152***	0.330***	0.337***	0.298***
	(3.50)	(1.22)	(5.34)	(7.04)	(7.83)	(6.33)
GDPGR	-0.0235	-0.0272	-0.0261	0.0443	0.0491**	0.0272
	(-0.95)	(-1.31)	(-1.07)	(1.59)	(2.02)	(1.03)
UNEMP	-0.0321	0.0383	-0.0836***	-0.0437	-0.0105	-0.0677**
	(-1.03)	(1.31)	(-2.98)	(-1.50)	(-0.44)	(-2.32)
TR	-0.0168	-0.0288	-0.0265	0.0220	0.0179	0.0298
	(-0.36)	(-0.74)	(-0.61)	(1.08)	(1.00)	(1.61)
_cons	-0.500	-2.865**	1.611	2.977***	0.722	2.274**
	(-0.40)	(-2.54)	(1.33)	(3.06)	(0.82)	(2.21)

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

N	243	243	243	243	243	243
R^2-Adj	0.279	0.235	0.271	0.527	0.589	0.466
F_Stat	29.29	18.42	25.81	33.55	38.22	29.26
Prob > F	0.000	0.000	0.000	0.000	0.000	0.000

Diskusi

Hasil penelitian menunjukkan bahwa pengendalian korupsi memiliki dampak negatif dan signifikan terhadap semua indikator inovasi dalam sampel keseluruhan negara-negara berpendapatan menengah atas. Temuan di negara-negara berpendapatan menengah atas menunjukkan bahwa pengendalian korupsi yang lebih ketat dapat menciptakan efek transisi yang awalnya memperlambat inovasi. Dalam jangka pendek, kebijakan anti-korupsi yang lebih ketat dapat meningkatkan biaya kepatuhan dan mempersulit proses birokrasi bagi perusahaan dan inovator, sehingga mengurangi insentif investasi dalam penelitian dan pengembangan. Hal ini sejalan dengan pandangan bahwa meskipun pengurangan korupsi berpotensi menciptakan lingkungan bisnis yang lebih adil dan transparan, reformasi tersebut dapat menciptakan hambatan administratif yang memperlambat inovasi pada tahap awalnya (Anokhin & Schulze, 2009; Priya & Sharma, 2022). Selain itu, dalam lingkungan di mana korupsi telah lama menjadi mekanisme informal untuk mempercepat perizinan dan pengambilan keputusan, peralihan ke sistem yang lebih bersih dapat menimbulkan ketidakpastian bagi bisnis, yang pada gilirannya mengurangi aktivitas inovatif (Ellis et al., 2019).

Namun, ketika sampel dibagi berdasarkan jumlah permohonan paten, ditemukan bahwa di negara-negara dengan tingkat permohonan paten yang tinggi, upaya pengendalian korupsi memiliki dampak positif terhadap permohonan paten yang diajukan oleh pihak non-penduduk. Hal ini menunjukkan bahwa di negara-negara yang sudah memiliki ekosistem inovasi yang berkembang, upaya untuk mengurangi korupsi meningkatkan daya tarik negara tersebut bagi investor asing dan perusahaan multinasional yang ingin mengajukan paten. Transparansi yang lebih besar dan kepastian hukum di negara-negara dengan sistem inovasi yang mapan menciptakan lingkungan yang kondusif untuk kolaborasi penelitian internasional dan transfer teknologi (Farooq et al.., 2023). Selain itu, inovasi yang dihasilkan dalam lingkungan bisnis yang bersih dan stabil lebih mungkin berkembang dalam jangka panjang karena risiko minimal pengambilalihan atau penyalahgunaan hak kekayaan intelektual oleh aktor korup (Harraf et al.., 2020). Hal ini sejalan dengan studi yang menunjukkan bahwa negara-negara dengan tata kelola yang lebih baik memiliki daya saing inovasi yang lebih kuat di tingkat global (Cvetanović et al.., 2021; Lomachynska & Podgorna, 2018).

Ketika sampel dibagi berdasarkan tingkat pendapatan pajak, ditemukan bahwa di negara-negara dengan kapasitas fiskal tinggi, pengendalian korupsi berdampak negatif terhadap semua indikator inovasi. Temuan ini menyarankan bahwa di negara-negara dengan pendapatan pajak yang besar, kebijakan anti-korupsi yang ketat dapat mengurangi fleksibilitas dalam sistem insentif fiskal yang sebelumnya digunakan untuk mendukung investasi dalam inovasi. Temuan ini menunjukkan bahwa di negara-negara dengan pendapatan pajak yang besar, kebijakan anti-korupsi yang lebih ketat dapat secara tidak sengaja membatasi kemampuan pemerintah untuk memberikan insentif fiskal yang fleksibel, seperti potongan pajak, subsidi, atau pengurangan khusus, yang sebelumnya digunakan untuk mendorong investasi terkait inovasi. Misalnya, sebelum penerapan kebijakan ini, beberapa perusahaan mungkin telah memanfaatkan pengaturan pajak yang longgar atau dukungan informal yang memungkinkan mereka mengalokasikan lebih banyak dana untuk penelitian dan pengembangan. Namun, setelah peraturan anti-korupsi diperketat, insentif diskresioner ini berkurang atau dihapuskan, menyebabkan sistem fiskal yang lebih kaku yang mungkin sementara waktu menghambat aktivitas inovatif. Perusahaan yang sebelumnya dapat memanfaatkan celah dalam sistem pajak atau memperoleh dukungan informal melalui hubungan dengan pejabat pemerintah mungkin kehilangan akses ke sumber daya yang mendukung inovasi setelah kebijakan anti-korupsi diperketat (Zhou et al., 2019). Selain itu, reformasi yang bertujuan untuk meningkatkan transparansi dalam sistem perpajakan dapat meningkatkan beban administratif bagi perusahaan, yang berpotensi mengurangi alokasi dana untuk penelitian dan pengembangan (R&D) dalam jangka pendek (Cerdeira & Lourenço, 2022). Hal ini menunjukkan bahwa meskipun dalam jangka panjang pengendalian korupsi akan menciptakan lingkungan

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

bisnis yang lebih adil, kemungkinan besar pada fase awal reformasi, perusahaan menghadapi lebih banyak hambatan dalam memperoleh sumber daya untuk inovasi.

Ketika dianalisis berdasarkan tingkat efektivitas pengendalian korupsi, ditemukan bahwa di negara-negara dengan tingkat pengendalian korupsi yang tinggi, variabel Pengendalian Korupsi memiliki dampak negatif yang signifikan terhadap jumlah total permohonan paten dan paten yang diajukan oleh penduduk domestik, tetapi tidak memiliki dampak signifikan terhadap paten yang diajukan oleh non-penduduk. Hasil ini menunjukkan bahwa meskipun negara-negara tersebut sudah memiliki sistem tata kelola yang lebih bersih, kebijakan pengendalian korupsi yang ketat dapat mengurangi aktivitas inovasi domestik. Salah satu alasan utamanya adalah bahwa reformasi kebijakan anti-korupsi sering disertai dengan perubahan besar dalam regulasi bisnis dan sistem insentif bagi perusahaan, yang dapat menciptakan ketidakpastian dan memperlambat pengambilan keputusan dalam investasi inovatif (Majeed et al., 2024). Di sisi lain, perusahaan asing yang ingin mengajukan paten di negara-negara ini kurang terpengaruh oleh perubahan tersebut karena umumnya sudah memiliki akses ke pasar yang lebih luas dan kurang bergantung pada dinamika kebijakan domestik.

Secara keseluruhan, temuan dalam studi ini menegaskan bahwa pengendalian korupsi memainkan peran yang kompleks dalam dinamika inovasi di negara-negara UMIC. Meskipun studi sebelumnya menunjukkan bahwa korupsi menghambat inovasi dengan meningkatkan ketidakpastian investasi dan memperburuk iklim bisnis (Akkoyunlu & Ramella, 2018; İmamoğlu & Payaslioglu, 2022), hasil studi ini mengungkapkan bahwa transisi menuju sistem yang lebih transparan juga dapat memiliki konsekuensi tak terduga dalam jangka pendek. Periode transisi ini merujuk pada fase antara implementasi reformasi anti-korupsi dan titik ketika efek positifnya terhadap inovasi mulai terlihat. Lamanya periode transisi ini bervariasi tergantung pada kematangan institusional negara, fleksibilitas fiskal, dan keberadaan kebijakan kompensasi. Di negara-negara dengan sistem regulasi yang mapan seperti Korea Selatan atau Estonia, periode transisi cenderung relatif singkat karena reformasi anti-korupsi disertai dengan instrumen fiskal yang berorientasi pada inovasi, seperti insentif pajak R&D yang ditargetkan dan reformasi tata kelola digital yang menyederhanakan prosedur administratif. Sebaliknya, di negara-negara dengan kapasitas institusional yang lemah, seperti beberapa UMIC Amerika Latin, periode transisi dapat diperpanjang, karena perusahaan kesulitan beradaptasi dengan mekanisme kepatuhan baru dan menghadapi penurunan fleksibilitas fiskal informal. Untuk memastikan bahwa manfaat transparansi segera terwujud dalam peningkatan kinerja inovasi, pemerintah sebaiknya melengkapi langkah-langkah anti-korupsi dengan kebijakan inovasi proaktif, seperti dana inovasi publik-swasta, sistem perizinan yang disederhanakan, dan program pengembangan kapasitas untuk UMKM guna mengatasi ketidakfleksibelan sumber daya sementara.

Simpulan

Studi ini menganalisis dampak pengendalian korupsi terhadap inovasi di Negara Berpendapatan Menengah Atas (UMIC). Hasil penelitian menunjukkan bahwa pengendalian korupsi memiliki dampak negatif dan signifikan terhadap semua indikator inovasi dalam sampel keseluruhan, menunjukkan efek transisi yang awalnya memperlambat inovasi. Kebijakan anti-korupsi yang lebih ketat dapat meningkatkan biaya kepatuhan dan memperumit birokrasi, sehingga mengurangi insentif investasi dalam penelitian dan pengembangan. Namun, di negara-negara dengan jumlah permohonan paten yang tinggi, pengendalian korupsi meningkatkan daya tarik bagi investor asing dan perusahaan multinasional, menciptakan lingkungan yang lebih kondusif untuk kolaborasi penelitian dan transfer teknologi. Di sisi lain, di negara-negara dengan pendapatan pajak yang tinggi, pengendalian korupsi memiliki dampak negatif terhadap inovasi karena mengurangi fleksibilitas dalam sistem insentif fiskal yang sebelumnya mendukung investasi inovasi. Selain itu, di negara-negara dengan tingkat pengendalian korupsi yang tinggi, kebijakan anti-korupsi yang diperketat dapat mengurangi aktivitas inovasi domestik akibat ketidakpastian dalam regulasi bisnis. Temuan ini menegaskan bahwa transisi menuju tata kelola yang lebih transparan dapat menimbulkan tantangan jangka pendek bagi inovasi, meskipun dalam jangka panjang hal ini dapat meningkatkan daya saing nasional. Oleh karena itu, kebijakan pengendalian korupsi harus

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

diseimbangkan dengan strategi yang mendukung ekosistem inovasi, termasuk insentif fiskal yang lebih adaptif dan peningkatan kualitas regulasi bisnis. Hasil studi ini memberikan wawasan penting bagi pembuat kebijakan di negara-negara UMIC untuk merancang strategi anti-korupsi yang tidak hanya mengurangi ketidakpastian ekonomi tetapi juga mendorong pertumbuhan inovasi yang berkelanjutan. Dengan pendekatan yang lebih fleksibel dan berbasis bukti, negara-negara UMIC dapat menciptakan lingkungan bisnis yang lebih kondusif bagi inovasi dan daya saing global.

Studi ini memberikan kontribusi teoretis dengan memperkaya pemahaman tentang hubungan antara pengendalian korupsi dan inovasi di Negara Berpendapatan Menengah Atas (UMICs). Berbeda dengan studi sebelumnya yang fokus pada negara-negara maju atau berkembang secara agregat, studi ini menyoroti bagaimana efektivitas pengendalian korupsi dapat memiliki dampak yang berbeda tergantung pada tingkat kesiapan inovasi dan kapasitas fiskal suatu negara. Dari perspektif praktis, temuan ini memberikan wawasan bagi pembuat kebijakan dalam merancang strategi anti-korupsi yang tidak hanya meningkatkan transparansi, tetapi juga memperkuat ekosistem inovasi dengan insentif yang tepat. Hasil penelitian menegaskan bahwa reformasi anti-korupsi perlu didampingi oleh kebijakan yang mendorong kemudahan berbisnis, investasi dalam R&D, dan sistem perpajakan yang mendukung pertumbuhan inovatif.

Namun, penelitian ini memiliki beberapa keterbatasan, termasuk kurangnya eksplorasi faktor-faktor institusional lain yang mungkin memoderasi hubungan antara korupsi dan inovasi, seperti sistem hukum atau stabilitas politik. Selain itu, penelitian ini hanya menggunakan data kuantitatif dan oleh karena itu tidak menyelidiki lebih dalam faktor-faktor kualitatif yang mungkin mempengaruhi efektivitas kebijakan anti-korupsi. Oleh karena itu, penelitian di masa depan disarankan untuk mengintegrasikan metode kualitatif, seperti wawancara dengan pelaku usaha dan pembuat kebijakan, untuk memperoleh pemahaman yang lebih komprehensif tentang dinamika inovasi dalam konteks pengendalian korupsi. Selain itu, analisis perbandingan antarwilayah dapat dilakukan untuk mengidentifikasi pola-pola spesifik yang muncul di berbagai kelompok negara. Dengan pendekatan yang lebih holistik, penelitian di masa depan diharapkan dapat memberikan rekomendasi kebijakan yang lebih efektif dalam menciptakan lingkungan inovasi yang berkelanjutan.

Referensi

Akkoyunlu, Ş., & Ramella, D. (2018). Corruption and Economic Development. *Proceedings of the 10th Economics & Finance Conference.* https://doi.org/10.20472/efc.2018.010.001

Anokhin, S., & Schulze, W. S. (2009). Entrepreneurship, innovation, and corruption. *Journal of Business Venturing, 24*(5), 465–476. https://doi.org/10.1016/j.jbusvent.2008.06.001

Bakhtiar, A., Ghazinoory, S. S., Aslani, A., & Mafi, V. (2022). Efficiency-effectiveness assessment of national innovation systems: comparative analysis. *Journal of Science and Technology Policy Management, 13*(3), 625–651. https://doi.org/10.1108/JSTPM-03-2021-0044

Cerdeira, J., & Lourenço, D. (2022). Does corruption impact firm innovation? Evidence from Portugal. *Economies, 10*(7), 173. https://doi.org/10.3390/economies10070173

Chen, X., Chen, G., Lin, M., Tang, K., & Ye, B. (2021). How does anti-corruption affect enterprise green innovation in China's energy-intensive industries? *Environmental Geochemistry and Health, 44*(9), 2919–2942. https://doi.org/10.1007/s10653-021-01125-4

Cvetanović, S., Panić, A. A., & Kostić, A. (2021). National innovation capacity and economic progress of countries. *Economic Themes, 59*(3), 297–314. https://doi.org/10.2478/ethemes-2021-0017

Das, A., Dash, D. P., & Sethi, N. (2020). Innovation, corruption, and economic growth in emerging Asia. *Bulletin of Monetary Economics and Banking, 23*(3), 347–364. https://doi.org/10.21098/bemp.v23i3.1183

dela Rama, M. (2012). Corporate governance and corruption: Ethical dilemmas of Asian business groups. *Journal of Business Ethics, 109*(4), 501–519. https://doi.org/10.1007/s10551-011-1142-0

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Dima, A. M., Begu, L. S., Vasilescu, M. D., & Maassen, M. A. (2018). The relationship between the knowledge economy and global competitiveness in the European Union. *Sustainability, 10*(6), 1706. https://doi.org/10.3390/su10061706

DiRienzo, C., & Das, J. (2014). Innovation and role of corruption and diversity. *International Journal of Cross Cultural Management, 15*(1), 51–72. https://doi.org/10.1177/1470595814554790

Doh, J. P., Rodriguez, P., Uhlenbruck, K., Collins, J., & Eden, L. (2003). Coping with corruption in foreign markets. *Academy of Management Perspectives, 17*(3), 114–127. https://doi.org/10.5465/ame.2003.10954775

Dworak, E., Grzelak, M. M., & Roszko-Wójtowicz, E. (2021). Comparison of national innovation systems in the European Union countries. *Risks, 10*(1), 6. https://doi.org/10.3390/risks10010006

Ellis, J. A., Smith, J. D., & White, R. M. (2019). Corruption and corporate innovation. *Journal of Financial and Quantitative Analysis, 55*(7), 2124–2149. https://doi.org/10.1017/s0022109019000735

Farinha, L., Ferreira, J. J., & Nunes, S. (2018). Linking innovation and entrepreneurship to economic growth. *Competitiveness Review, 28*(4), 451–475. https://doi.org/10.1108/cr-07-2016-0045

Farooq, U., Tabash, M. I., Hamouri, B., & Daniel, L. N. (2023). Does control of corruption play its role in enhancing the innovation? Empirical evidence from Asian Region. *International Journal of Innovation Science, 17*(1), 202–217. https://doi.org/10.1108/ijis-05-2023-0110

Games, D. (2019). Enhancing innovation for competitiveness: What could Indonesia learn from Malaysia and Thailand. *Proceedings of the 1st International Conference on ASEAN (IC-ASEAN) "Towards a better ASEAN",* 278–282. https://doi.org/10.1515/9783110678666-037

Grasso, C. (2024). The dark side of power: corruption and bribery within the energy industry. In *Research Handbook on EU Energy Law and Policy* (pp. 362–382). Edward Elgar Publishing. https://doi.org/10.4337/9781035328024.00026

Gungaa, B., Choijiljav, M., Dashnyam, S., & Lkhagva, B. (2021). Innovation process of the mongolian higher education institution and its development perspective. *Eph - International Journal of Business & Management Science, 7*(1), 1–5. https://doi.org/10.53555/eijbms.v7i1.111

Harraf, A., Ghura, H., Hamdan, A., & Li, X. (2020). Formal institutions and the development of entrepreneurial activity – The contingent role of corruption in emerging economies. *Journal of Entrepreneurship and Public Policy, 10*(1), 15–37. https://doi.org/10.1108/jepp-06-2020-0033

Hemert, P. v., & Nijkamp, P. (2010). Knowledge investments, business R & and innovativeness of countries: A qualitative meta-analytic comparison. *Technological Forecasting and Social Change, 77*(3), 369–384. https://doi.org/10.1016/j.techfore.2009.08.007

Herman, E. (2018). Innovation and entrepreneurship for competitiveness in the EU: An empirical analysis. *Proceedings of the International Conference on Business Excellence, 12*(1), 425–435. https://doi.org/10.2478/picbe-2018-0038

Huang, Q., & Yuan, T. (2021). Does political corruption impede firm innovation? Evidence from the United States. *Journal of Financial and Quantitative Analysis, 56*(1), 213–248.

Huang, Y., Li, K., & Li, P. (2023). Innovation ecosystems and national talent competitiveness: A country-based comparison using fsQCA. *Technological Forecasting and Social Change, 194*, 122733. https://doi.org/10.1016/j.techfore.2023.122733

İmamoğlu, H., & Payaslioglu, C. (2022). Governance content, financial risk and innovation: A panel data analysis. *Business and Management Studies an International Journal, 10*(3), 977–996. https://doi.org/10.15295/bmij.v10i3.2092

Juknevičienė, V. (2019). Key factors for the successful implementation of the national innovation policy: The case of Lithuania. *Annals of Spiru Haret University Economic Series, 19*(2), 25–50. https://doi.org/10.26458/1921

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)

Jungo, J., Madaleno, M., & Botelho, A. (2023). Controlling corruption in African countries: Innovation, financial inclusion and access to education as alternative measures. *International Journal of Social Economics, 50*(6), 766–786. https://doi.org/10.1108/ijse-08-2022-0520

Kiseľáková, D., Šofranková, B., Gombár, M., Čabinová, V., & Onuferová, E. (2019). Competitiveness and its impact on sustainability, business environment, and human development of EU (28) Countries in terms of global multi-criteria indices. *Sustainability, 11*(12), 3365. https://doi.org/10.3390/su11123365

Kumar, P. (2023). How does corruption affect innovation?-New evidence from macro-level data. *Journal of Quantitative Economics, 21*(4), 925–941.

Lomachynska, I., & Podgorna, I. (2018). Innovation potential: Impact on the national economy's competitiveness of the eu developed countries. *Baltic Journal of Economic Studies, 4*(1), 262–270. https://doi.org/10.30525/2256-0742/2018-4-1-262-270

Majeed, M. A., Ahsan, T., & Gull, A. A. (2024). Does corruption sand the wheels of sustainable development? Evidence through green innovation. *Business Strategy and the Environment, 33*(5), 4626–4651. https://doi.org/10.1002/bse.3719

Miranda, R. L. d., Santos, L. F. I. dos, Gomes, G., & Parisotto, I. R. dos S. (2021). Competitiveness influence on global innovation of nations: A cross-sectional analysis. *Independent Journal of Management & Production, 12*(4), 964–978. https://doi.org/10.14807/ijmp.v12i4.1338

Mokthtari Moughari, M., & Daim, T. U. (2023). Developing a model of technological innovation for export development in developing countries. *Technology in Society, 75*, 102338. https://doi.org/10.1016/j.techsoc.2023.102338

Priya, P., & Sharma, C. (2022). Do financial constraints and corruption limit firms' innovation capability? Evidence from developing economies. *Managerial and Decision Economics, 44*(4), 1935–1961. https://doi.org/10.1002/mde.3792

Rahman, M. M., & Alam, K. (2022). Effects of corruption, technological innovation, globalisation, and renewable energy on carbon emissions in Asian countries. *Utilities Policy, 79*, 101448.

Sen, H., & Orhan, F. (2023). The potential impact of product innovation on employment in healthcare organizations. *Journal of Innovative Healthcare Practices, 4*(3), 201–213. https://doi.org/10.58770/joinihp.1389266

Setor, T. K., Senyo, P. K., & Addo, A. (2021). Do digital payment transactions reduce corruption? Evidence from developing countries. *Telematics and Informatics, 60*, 101577. https://doi.org/10.1016/j.tele.2021.101577

Stratan, A., & Fală, V. (2023). International competitiveness, productivity and innovations. *Competitivitatea și Inovarea în Economia Cunoașterii*, 11-22 https://doi.org/10.53486/cike2022.01

Wen, J., Yin, H.-T., Jang, C.-L., Uchida, H., & Chang, C.-P. (2023). Does corruption hurt green innovation? Yes–Global evidence from cross-validation. *Technological Forecasting and Social Change, 188*, 122313.

Wen, J., Zheng, M., Feng, G., Chen, S. W., & Chang, C. (2018). Corruption and innovation: linear and nonlinear investigations of oecd countries. *The Singapore Economic Review, 65*(01), 103–129. https://doi.org/10.1142/s0217590818500273

Zhou, X., Wei, W., Jang, C.-L., & Chang, C. (2019). The impacts of government r&d expenditure on innovation in Chinese Provinces: what's the role of corruption. *Bulletin of Monetary Economics and Banking, 21*(3), 409–430. https://doi.org/10.21098/bemp.v21i3.977

Copyright © 2025, Integritas: Jurnal Antikorupsi
2615-7977 (ISSN Online) | 2477-118X (ISSN Print)