

The Contribution of Democracy and Corruption to Increasing Innovation: A Case Study in Asean Countries

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ABSTRACT

This research uses Schumpeterian theory and the National Innovation system as a theoretical framework. Both theories are able to explain the importance of collaboration between stakeholders such as the government, entrepreneurs, and other parties to create an ecosystem that supports efforts to generate innovation. ASEAN member countries are the object of research representing developing countries, although Singapore, which is a developed country, is still included as data. The observation period in this study covers 2011-2024, therefore the data is in the form of panel data. The measurement technique in this study is multiple regression by applying a thirst test to determine the most appropriate model as the basis for conclusions. The results of the study based on the random effect model show that partially, democracy and corruption do not have a significant effect. The data is supported by a democracy coefficient value of -0.3022 ($p = 0.525$) and corruption of -0.0680 ($p = 0.655$).

INTRODUCTION

Innovation is one of the main drivers of economic growth, productivity, and long-term competitiveness in the global economy. Recent empirical evidence suggests that countries with stronger innovation capabilities tend to achieve higher economic performance, faster technological upgrades, and greater resilience to shocks (Ding et al., 2024; Fang & Liu, 2024; Hamdouna & Khmelyarchuk, 2025). In the context of rapid digital transformation and increasing global competition, innovation is no longer an option, but an absolute requirement to sustain economic development and improve national well-being (Sabatino, 2016; Trippel et al., 2024). However, large disparities in innovation performance still exist between countries. While developed countries are able to convert knowledge into technological output efficiently, many developing countries still face structural constraints that hinder innovation (Torres de Oliveira et al., 2022). This gap is especially evident from the inequality of capacity in producing knowledge and technology outputs, which is one of the main indicators of a country's innovation performance. Therefore, the identification of the determinants of innovation remains an important issue, especially in regions whose economic systems, institutions, and technologies still need to accelerate development.

ASEAN is an organization that accommodates political and economic relations for countries in Southeast Asia. The ASEAN Secretariat (2022) highlights that the ASEAN region is an economic bloc that is undergoing rapid structural transformation and needs innovation as a tool to produce accelerated transformation. Research indicates the positive effects of innovation, especially the development of digital technology on the country's growth and productivity (Jitsutthiphakorn, 2021; Rhee et al., 2022). However, Fikram et al. (2024) show that there is an inequality in the leap in innovation in each country. This situation indicates the relevance of research that focuses on the dynamics of innovation in this region.

Based on the search of previous researches, innovation is influenced by various aspects. Ali et al. (2023) concluded that economic activities such as foreign investment and trade openness have a positive influence on innovation. Likewise, the research and development aspects have the same impact on innovation (Ali et al., 2023; Bate et al., 2023). Bate et al. (2023) added that the determining factors are human resources and business sophistication. Increasing income for the population is in line with increasing the ability to innovate. The following aspect that affects innovation is intellectual property rights (IPR). Chen & Lovelace (2023) found that protection from government expropriation, protection of private assets, and restrictions on power holders determine policies as proxies for IPR.

Not only aspects that are directly related to economic activities, but aspects of democracy and corruption have become the subject of study to understand the factors that affect innovation. On the aspect of democracy, previous research showed inconsistent results. Wang et al. (2021) based on their research, argue that democracy has a significant influence on innovation. Meanwhile, Ahmed et al. (2024) argue the opposite, namely democracy does not have a significant effect. The corruption aspect also shows inconsistencies in the research results. The results of the research of Anokhin & Schulze (2009) show that corruption has a negative influence on innovation. Chadee et al. (2021) added that perceptibly, corruption has a negative impact. However, not with the practice of bribery. Bribery has a positive impact on innovation growth. Thus, with Iorio & Segnana (2022) who found that bribery can affect both negatively and positively. For companies that practice bribery, it has a positive impact on innovation, on the other hand, companies that choose to be clean have a negative impact on innovation. The inconsistency of the results provides a research gap to gain additional understanding of the impact of democracy and corruption on innovation.

This study focuses the innovation aspect on Knowledge and Technology output as a dependent variable, which represents the main component of innovation output in the Global Innovation Index (GII). This indicator reflects a country's ability to generate knowledge, technological advancements, and creative outputs, and serves as a proxy for the effectiveness of the national innovation system in converting inputs into measurable results. Independent variables in this study include democracy, corruption, and population as control variables. Although much research has been done, empirical findings regarding the relationship between these variables and innovation are still inconclusive. Especially in the context of ASEAN where its member countries are dominated by developing countries. And to improve the status of becoming a developed country, innovation is needed as a tool of acceleration.

LITERATURE REVIEW

This study uses Schumpeterian theory (TS) and the National Innovation system (NIS) as the theoretical framework. TS has an emphasis on the function of innovation that is able to produce new economies for the country and globally. This theory explains that economic development occurs due to creative destruction (CD) carried out by entrepreneurs (Schumpeter, 1934, 1942; Yay & Yay, 2022). As a result, there has been a radical change in business practices in related industries replacing previous practices (Tülüce & Yurtkur, 2015). This change occurs because of the innovations carried out, or in the context of this research is to produce new knowledge and technology. This theory is able to overshadow how knowledge and technology are used by entrepreneurs to produce more effective, efficient, and relevant business practices. Meanwhile, NIS is used as the foundation for how the country's ecosystem should be formed in such a way to support the creation of innovation. Based on NIS, the government must be able to collaborate with industry players and academics in an effort to create such an ecosystem (Clarke et al., 2018; Lundvall, 1992; Weerasinghe et al., 2024). In the context of the government, the democratic

system is an aspect that is the responsibility of the government. Freedom can provide space for industry players to produce knowledge and technology. Likewise with the corruption aspect, the government and other state frameworks are responsible for producing regulations and supervising their implementation. Therefore, both theories are able to rationalize the influence of democracy and corruption on efforts to generate innovation, especially knowledge and technology. Based on this background, this research focuses on answering two research questions, namely whether democracy has an influence on Innovation (Knowledge and Technology output) and whether Corruption (Corruption) has an influence on Innovation (Knowledge and Technology output).

This question is reflected in the following two hypotheses:

Ha₁: Democracy has an influence on Innovation (Knowledge and Technology Output).

Ha₂: Corruption has an influence on Innovation (Knowledge and Technology Output).

METHODOLOGY

This study uses a quantitative approach with a panel data analysis method to test the influence of democracy and corruption on innovation outputs, especially knowledge and technology. The data of this study consists of six countries that are members of the ASEAN region. The observation period used in the study was 2011 to 2024. The selection of the ASEAN Area is due to the state of countries dominated by developing countries except Singapore. The secondary data sources used in this study are Pereira Eufrazio (2024) for KT and population data as control variables, World Bank Group (2026) for democracy, and Our World in Data (2026) for Corruption. To determine the most appropriate estimation method, this study uses the Hausman test to compare fixed effects and random effects models. This test was carried out because the research data used was panel data. By applying this test, the results of the research will be unbiased and consistent. And also the results of the study consider the effect of the correlation of individual data with independent variables, in this case the country. This test is also useful to ensure that the results of the research can be described based on the theoretical framework, namely Schumpeterian theory and the National Innovation System (NIS).

RESEARCH RESULT AND DISCUSSION

Based on the results of Hausman's test ($p > 0.65$), the model used as the basis for the findings and discussion is a random effect. Based on the results of the research shown in table 1, it can be concluded that each independent variable *Democracy index* (DI) and *Corruption Index* (CI) do not have a significant influence on the dependent variable, namely *Knowledge and Technology output* (KTO). The results of the estimated DI coefficient value of -0.3022 ($p = 0.525$) indicate an insignificant effect on KTO. Likewise, the CI coefficient value of -0.0680 ($p = 0.655$) indicates the same thing, namely its insignificant effect on KTO. On the other hand, even though it is a control variable, Ln Population (H3) shows a negative and significant influence on KTO, namely with a coefficient value of -8.3835 ($p = 0.000$). However, in the fixed effects model, this variable becomes insignificant, suggesting that the effect comes mainly from variation between countries, rather than from changes within one country over time.

Table 1. Results of Random Effect and Fixed Effect Analysis

Variable	Coefficient	Standard Error	t-test	P-Value
Random Effect				
Democracy Index	-0.3022	0.4749	-0.6400	0.5250
Corruption Index	-0.0680	0.1522	-0.4500	0.6550
Ln Population	-8.3835	1.7431	-4.8100	0.0000
Fixed Effect				
Democracy Index	0.1895	0.8533	0.2200	0.8330
Corruption Index	-0.1374	0.2288	-0.6000	0.5740
Ln Population	-10.4509	32.9303	-0.3200	0.7640

The results of the study show that there is an alignment with previous research. Blanco & Goel (2023) found that there is no statistically significant relationship between democracy and efforts to generate innovation. For him, the rules issued by the government and the political stability and security of a country that provide influence for innovation. Increasingly stringent rules can have the effect of weakening innovation efforts. Meanwhile, in the context of political stability and security, innovation will increase when the level of security and political stability also increases. Likewise, Ahmed et al. (2024) found that democratic institutions in developing countries do not have a significant influence. The emphasis of democratic institutions is how the public gets the right to choose their political choices and is free to express opinions. Although freedom to act gives the nuance of space to generate innovation, it is the adaptive rules and stability of government that have an impact on innovation. This can give an indication that efforts to democratize a country that are not accompanied by certainty of rules and political stability can hinder the innovation process.

In contrast to the aspect of democracy, previous studies have given mixed results on the influence of corruption on innovation. Ahmed et al. (2024) found empirical evidence that corruption does not have a significant effect on innovation in developing countries but does not exist in developed countries. Meanwhile, other studies provide evidence that corruption can be the grease of the wheel, which emphasizes that corruption can accelerate the innovation process (Aghazada & Ashyrov, 2022; Blanco & Goel, 2023; Iorio & Segnana, 2025). This happens because there is a weak point in governance. bribery practices to relevant government agencies, providing companies with the opportunity to gain wider access and giving them the ability to innovate faster. However, Paunov (2016) and Bukari & Anaman (2021) found empirical evidence to the contrary, namely that Corruption has a negative influence on innovation. Their research found that corruption hinders companies from gaining legitimacy in the form of documents that provide guarantees against certain standards. This can have a negative impact on companies when they will penetrate the market because they cannot meet the requirements or standards that have been determined by certain rules.

Although population was a control variable in this study, the results of estimates based on random effects showed a significant influence. Most likely, this result refers to the data represented by Singapore, namely that the smaller the population has a positive influence on innovation. These results can provide an indication that governance in smaller countries has a higher quality or order. With a relatively lower population level, it makes it easier for the government to understand the dynamics of economic activity in its region, so that it is able to provide a regulatory framework that guarantees companies to remain relevant to the industries they are engaged in. However, Hu et al. (2022) found the opposite, that a relatively larger country provides an advantage for companies to innovate. The benefits obtained through the size of the economy in the country. This diversity of results indicates that innovation can develop in a country is not always about the number of populations, but the intensity and magnitude of economic activities that have an impact.

Based on the theoretical framework in this study, innovations are produced not only from a system available in a country, but innovations are produced from the interaction of industry players or entrepreneurs based on creative destruction and cross-stakeholders based on the National Innovation System (NIS). Creative destruction explains that innovation is an effort to generate a new economy. These efforts can penetrate the existing system and produce destructive effects, thus driving the prevailing system to change radically. This system change can be explained based on the NIS. The ability of stakeholders to be able to participate as reflected in the executive, legislative, and judicial functions must be high. The interaction between entrepreneurs and stakeholders will produce an economic climate that stimulates efforts to generate innovation. The government has a responsibility to provide physical and non-physical infrastructure for companies to generate innovation. Meanwhile, the legislature together with the executive provides guarantees of political and regulatory stability. And the judiciary provides oversight and action over the process and creation of innovation.

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of the research, it can be concluded that democracy and corruption do not have a significant influence on innovation, especially efforts to produce knowledge and technology. In the aspect of corruption, although the results of this study show no significant influence, previous studies indicate that corruption practices can have a positive or negative impact. In a weak government ecosystem, corruption can be a lubricant that accelerates efforts to generate innovation. In contrast to a strong government ecosystem, innovation can be hampered when companies are unable to meet the formal requirements set by the government. Based on previous research, innovation is more likely to be influenced by an economic system applied to the country.

ADVANCED RESEARCH

A strong economic system is reflected in a healthy ecosystem, namely a government that is able to ensure order and regulatory certainty. Next is a state governance system that is able to create political stability and national security. And next is the economic ecosystem which is reflected in the physical infrastructure that supports economic activities such as roads, supply chain systems, and competent human resources.

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