EDUCATION, POLITICAL CONNECTIONS, AND FIRM PERFORMANCE: EVIDENCE FROM GROWTH TRIANGLE COUNTRIES

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ABSTRACT

This research aims to understand better how education influences overall company performance in the "growth triangle" nations of Malaysia, Thailand, and Indonesia and how it fosters favorable political relations. Furthermore, we investigate how education contributes to the effectiveness of environmentally friendly corporate social responsibility (CSR) initiatives, sometimes called "Green CSR," and technological innovation in enhancing firm performance. This study covers annual data from 2012 to 2023 and uses a threshold autoregressive model. Our findings show that education level and work experience significantly influence employee performance. Firms that prioritize education, offer development opportunities, and provide training tend to have more productive teams.

Keywords: Corporate performance; Education; Green CSR; Political connection; Technological innovation

ABSTRAK

Penelitian ini bertujuan untuk lebih memahami bagaimana pendidikan mempengaruhi kinerja perusahaan secara keseluruhan di negara-negara "segitiga pertumbuhan" di Malaysia, Thailand, dan Indonesia, serta bagaimana pendidikan dapat mendorong hubungan politik yang menguntungkan. Selain itu, kami menyelidiki bagaimana pendidikan berkontribusi terhadap keberhasilan inisiatif tanggung jawab sosial perusahaan (CSR) yang ramah lingkungan, yang kadang-kadang dikenal sebagai "CSR Hijau" dan bagaimana inovasi teknologi meningkatkan kinerja bisnis. Penelitian ini mencakup data tahunan dari tahun 2012 hingga 2023 dan menggunakan model autoregresif ambang batas. Temuan kami menunjukkan bahwa tingkat pendidikan dan pengalaman kerja secara signifikan mempengaruhi kinerja karyawan. Perusahaan yang memprioritaskan pendidikan, menawarkan kesempatan pengembangan dan memberikan pelatihan cenderung memiliki tim yang lebih produktif.

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Kata Kunci :   CSR Hijau; Inovasi teknologi; Kinerja perusahaan; Koneksi politik; Pendidikan

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INTRODUCTION

Education fosters political ties and enhances business success, especially in triangle development nations like Indonesia, Malaysia, and Thailand (Huang et al., 2021; Anggadini et al., 2023). It helps individuals understand government policies, regulations, and political dynamics, essential for building effective connections with political stakeholders (Van der Wal, 2020). These connections can provide companies with benefits like easier access to funding and government contracts (Xu & Liu, 2020), and education equips individuals to balance political connections and business success effectively (Wei et al., 2023).

In Indonesia, businesses with political connections often have senior management with strong ties to political figures or government employees (Preuss & Königsgruber, 2021). While beneficial for obtaining contracts and funds, these connections pose risks of misuse for personal gain (Harnois & Gagnon, 2022). Political connections can influence company value, policies, and resource access and lead to fraudulent practices (Faisal et al., 2023; Umar et al., 2020). Close ties to the government may offer advantages like tax incentives but result in negative impacts like lack of transparency and conflicts of interest (Baumann, 2020). The Corruption Perceptions Index (CPI) assesses a country's potential political connections and corruption, reflecting transparency and accountability levels (Bello & Villarino, 2021; Wilantari et al., 2024; Triatmanto & Bawono, 2023).

Education enhances political connections by providing broader social networks and opportunities to interact with political figures (Ito et al., 2020). It drives technological innovation, helping individuals understand scientific concepts and think creatively (Haleem et al., 2022). Education also shapes an organization's view on social responsibility, with educated executives understanding the impacts of their activities on the community and environment (Mascarenhas et al., 2020). Employee education boosts company performance by enhancing skills, understanding of business processes, and adaptability (Riwukore et al., 2021). Educated employees generate innovative ideas, improve efficiency, and make data-based decisions (Priyanto et al., 2022; Aboramadan, 2022). Companies investing in education through CSR programs achieve long-term societal and environmental benefits (Pamungkas et al., 2024). Aligning education, innovation, CSR, and performance creates a sustainable environment and positive impact, with education as the foundation (Zhou et al., 2020; Triatmanto et al., 2023). This research explores how education develops healthy political relationships and enhances corporate performance in Indonesia, Malaysia, and Thailand, as well as the role of education in successful environmentally sustainable CSR and technological innovation (Komalasari et al., 2020; Widarni & Bawono, 2021). Education enables career development and improves reputation, which is critical for political ties and business success (Jackson & Tomlinson, 2020; Huang et al., 2021; Lauder & Mayhew, 2020). Political connections impact corporate performance through resource access and regulations, and education helps utilize these connections ethically (Akcigit et al., 2023; Nakao & de Andrade Guerra, 2020). Education fosters environmental consciousness and green CSR implementation, enhancing company reputation and stakeholder support (Abbas, 2020; De Castro & Martin, 2021; Abbas, 2022). Education drives innovation, improves efficiency and productivity, and helps companies adapt to technological changes (Widarni et al., 2020; Goulart et al., 2022).

Political relationships significantly impact business success, as they can provide companies with unique opportunities for growth and access to essential resources. Companies with strong political ties often benefit from favorable government policies, easier access to funding, and the ability to navigate regulatory environments more

effectively. These advantages can lead to increased market performance, higher sales value, and improved investor confidence. However, managing political connections requires a delicate balance; relying too heavily on these ties can expose companies to risks such as corruption, lack of transparency, and conflicts of interest. Education plays a crucial role in helping companies navigate these challenges, as it equips employees and leaders with the analytical skills, ethical understanding, and political acumen needed to leverage political connections responsibly and sustainably (Najaf & Najaf, 2021; Kijkasiwat et al., 2022; Hoque et al., 2023).

Green corporate social responsibility (CSR) is also vital in enhancing business success. Companies that adopt green CSR practices often see improvements in their reputation, customer satisfaction, and operational efficiency. By focusing on sustainable activities such as waste reduction, energy efficiency, and eco-friendly product innovation, companies can reduce production costs and increase efficiency (Alam & Islam, 2021; Wang & Wang, 2020). Green CSR helps companies comply with environmental regulations, reduce legal risks, and foster a positive image among stakeholders and the community (Martin-de Castro, 2021). Education is critical for successfully implementing green CSR initiatives, as it raises environmental awareness among employees and equips them with the skills needed to design, manage, and evaluate sustainability programs effectively (Le et al., 2022; Lu et al., 2021). Furthermore, education drives continuous innovation, enabling companies to develop creative solutions to environmental challenges and integrate sustainable practices into their operations (Shahzad et al., 2020).
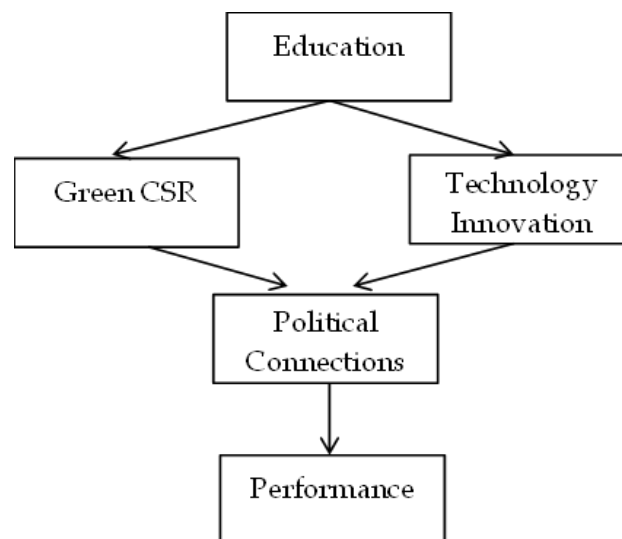

Figure 1. The following threshold model

Several key theories underpin the research. Human Capital Theory posits that education is an investment in human capital, enhancing an individual's productivity and earning potential. Companies that invest in employee education benefit from improved skills and performance, leading to better outcomes (Widarni, Drean, & Bawono, 2022). The Resource-Based View (RBV) suggests that a company's internal resources, such as educated employees, provide competitive advantages. Education contributes to developing valuable, rare, and inimitable resources, crucial for sustained competitive advantage (Amaya, Bernal-Torres, Nicolás-Rojas, & Pando-Ezcurra, 2024). Stakeholder Theory highlights that companies are accountable to various stakeholders,

including employees, customers, and the community. Education fosters positive stakeholder relationships by promoting transparency, accountability, and social responsibility (Dmytriyev, Freeman, & Hörisch, 2021). Finally, Social Capital Theory emphasizes that education enhances social capital by building networks and fostering trust. Well-educated employees are better positioned to leverage social networks and political connections for the company's benefit (Zhao, Barratt-Pugh, Standen, Redmond, & Suseno, 2022). These theories underscore education's importance in improving company performance, fostering beneficial political relationships, and promoting green CSR and technological innovation. Based on the literature study, we construct the following threshold model.

Education drives corporate performance, while companies with better environmental and social practices (Green CSR) tend to perform better. Companies that adopt technological innovation also tend to perform better, and political connections impact corporate performance. Education strengthens the role of Green CSR, technological innovation, and political connections in driving business success (Figure 1).

METHOD

This research examines how education fosters beneficial political relationships and improves overall business success in the triangle of growth — Indonesia, Malaysia, and Thailand. It also examines the role of education in the success of CSR based on environmental sustainability (green CSR) and technological innovation in improving company performance. This study uses an annual period from 2012 to 2023. A threshold autoregression model is used in this work. The Variable Description is shown in Table 1.

Pesaran's CD (Cross-Sectional Dependency) test is crucial in panel data analysis, mainly when threshold autoregressive models are considered. To determine if cross-sectional dependency exists in the residuals of panel data, use Pesaran's CD test. This dependence can occur due to common factors or spillover effects between entities.

We are interested in the connection between the independent and dependent variables in a threshold autoregressive model. The CD test helps us understand whether the model needs to account for cross-sectional dependence.

When we use panel data and a threshold autoregressive model, we want to ensure that the assumption of independence between residuals is met. If there is cross-sectional dependence, the model estimation can be biased or inefficient.

If residuals from several entities are correlated, the CD test may be used to determine this. If so, our analysis must consider this reliance. When a cross-sectional dependency is present, we may choose the best estimate technique and adjust the estimation's standard error.

In panel data analysis, utilize the unit root test to determine whether a variable has a unit root (stationary or not). Ordinary autoregressive (AR) models are inappropriate when a variable has a unit root since the changes in the variable will only increase with time. Within a threshold autoregressive framework, we want to know whether the variable has a unit root on both sides of the threshold (before and after the threshold). If the variable is stationary, we can use the ordinary AR model. However, if not, we need to consider models that consider non-stationarity, such as an autoregressive model with a threshold.

The Dumitrescu-Hurlin Panel Causality Test is very relevant in threshold autoregressive panel analysis. A growing amount of panel data spans several people and historical periods and is becoming accessible. The causal link between two

variables is important to us in the context of threshold autoregressive panel analysis. The Granger technique (1969) was first created to examine causal connections between time series. Dumitrescu and Hurlin (2012) expanded this technique to identify causality in panel data. The DH technique extends the Dumitrescu-Hurlin (DH) Approach to Granger regression with panel data. We use the threshold panel data model equation 1 in our analysis. When the independent variable is xi,t, the dependent variable is yi,t, and the error is εi,t, we can examine whether variable x influences changes in variable y using this strategy.

$$y_{i,t} = \alpha_i + \sum_{k=1}^{K} \gamma_{ik} y_{i,t-k} + \sum_{k=1}^{K} \beta_{ik} x_{i,t-k} + \varepsilon_{i,t}$$ ....(Equation 1)

Table 1. Variable Description

Variables	Description	Unit Analysis	Source
Green CSR	The level of success of green CSR from the combination of all companies in a country nationally with the indicator of Total CO_2 emissions in the atmosphere on a national scale divided by the population.	$MtCO_2$ per capita	globalcarbonatlas.org Finley, He, Huang, & Hon (2024)
Performance of the Company	Annual rise in the performance of the company	Per cent	www.worldbank.org Ahmad, Mobarek, & Roni (2021)
Education	using the World Bank's Human Capital Index to measure the effectiveness of education in creating human capital	Index Scale	www.worldbank.org Triatmanto, Bawono, & Wahyuni (2023)
Innovation in technology	technological innovation using measures of national technology imports	Per cent	www.worldbank.org Kahn (2022).
Political ties	The Corruption viewpoint index indicates political ties.	Index Scale	https://www.transparency.org/ Triatmanto & Bawono (2023)

The it-cause command was created to aid practitioners in using the DH approach. By minimizing the Akaike (AIC), Bayesian (BIC), or Hannan–Quinn (HQIC) information criterion, we may use this command to determine how many delays to include in the estimate. Furthermore, it cause facilitates the computation of p-values and critical values using bootstrap operations. The Dumitrescu-Hurlin Panel Causality Test is crucial in autoregressive threshold panel analysis since it enables us to examine the causative link between variables in panel data.

The homogeneity assumption in traditional regression models may be broken using panel data in the threshold regression model. Varying groups, people, or stages of the economic cycle may have varying effects from the explanatory factors on the response variable in this model. We employ a dynamic threshold panel data model, which extends the Hansen threshold model and has endogenous threshold variables.

Exogenous variables may have asymmetric threshold effects under the Hansen model, depending on whether the threshold variable is above or below an unknown threshold. It is advised that dynamic threshold panel data models with endogenous threshold variables use the following equation 2 features.

$$y_{it} = X_{it'\beta} + (1, X_{it'})\gamma_1 I(q_{it} \leq \tau) \dots\dots\dots\dots\dots\dots\dots\dots\dots\dots\text{(Equation 2)}$$

The dependent variable is denoted by y. We may add X as the lag-dependent variable since this variable may be impacted by its historical values. It is a threshold variable that establishes the various circumstances or regimes inside the model. The coefficient vector β determines the dependent variable's influence from the independent variables and the threshold value τ. The independent variable's impact is measured in two distinct scenarios or regimes using the regime coefficients γ 1 and η 2. The associated regime coefficient is the triggered indicator function based on the threshold variable's value. The country effects μi represent the unique characteristics of each country that do not change over time, while εit represents random errors that can occur in each period. To remove country effects that can cause bias in the estimation, we can use a first-difference transformation, which reduces the data by its previous values, thereby removing components that are constant over time. As a result, the final model measures the impact of the independent factors on the dependent variable more accurately and without the distortion caused by country-set effects. The error term is ε. The following is a mathematical representation of the first-difference transformation in equation 3.

$$\Delta y_{it} = \Delta(\beta'X_{it}) + \Delta(\gamma_1 I q_{it} \leq \tau) + \Delta(\gamma_2 I q_{it} > \tau) + \Delta\varepsilon_{it} \dots\dots\dots\dots\dots\dots\dots\dots\text{(Equation 3)}$$

With this approach, researchers can more accurately assess the impact of policies or economic changes on dependent variables, such as Green Innovation, in a more dynamic and realistic context. Researchers may consider threshold effects and cross-dependencies between observation units by combining econometric analysis with a dynamic threshold panel data model.

RESULT AND DISCUSSION

Pesaran's Cross-Sectional Dependence (CD) test is crucial in panel data analysis, particularly when considering threshold autoregressive models. The CD test aids in determining if cross-sectional dependency on residuals exists in panel data, which might impact the estimated outcomes. By knowing the presence of this dependence, we can choose an appropriate estimation method and correct the standard error of the estimation. To sum up, threshold autoregressive models using panel data benefit from the Pesaran CD test as it helps guarantee the estimated results' accuracy. Table 2 shows the results of the Pesaran CD test.

In Green CSR (Corporate Social Responsibility), the CD test statistic shows a value of 7,23 with a p-value of 0,000. A low p-value indicates cross-sectional dependence on the residuals related to Green CSR practices. In other words, CSR activities from various companies are not independent; there may be associations due to common factors or spillover effects.

In Company Performance, the CD test statistic shows a value of 8.11, with a p-value also of 0,000. Like Green CSR, a low p-value indicates cross-sectional dependence on company performance. It means that the performance of various companies is not entirely independent; common factors or external shocks may influence it.

The CD test statistic for the Education variable is 8,71, with a p-value of 0,000. A low p-value suggests cross-sectional reliance on the education-related residuals. It

could be due to education policies, workforce skills, or common factors that affect educational outcomes across entities.

In the Technological Innovation variable, the CD test statistic shows a value of 7,21, with a p-value also of 0,000. Again, the low p-value indicates cross-sectional dependence on technological innovation.

Table 2. Pesaran's CD test

Variables	CD test	p-value
Green CSR	7,23	0,000
Company Performance	8,11	0,000
Education	8,71	0,000
Technological innovation	7,21	0,000
Political connections	8,12	0,000

A p-value of 0,000 and a CD test statistic of 8,12 are shown for political relationships. As before, the low p-value suggests cross-sectional reliance on political ties. Table 3 may provide the results of the Panel Unit Root Test.

Table 3. Unit Root Test Panel

Variables	CIPS test	Hadri and Rao's test
Green CSR	1,21	0,091***
Company Performance	1,61	0,093***
Education	1,22**	0,092***
Technological innovation	1,23**	0,095**
Political connections	1,12	0,101

We look at the CIPS (Cross-Sectionally et al.) Test. The CIPS test value for the Green CSR variable is 1,21, with a p-value of 0,091 (marked with three asterisks). When the p-value exceeds the standard significance threshold, which is typically 0,05. Stated differently, there is insufficient evidence to conclude that the panel data on Green CSR has a non-stationary unit root. We then examine Hadri and Rao's Test. The Hadri and Rao's test value for the Green CSR variable is 0,093.

Additionally, this number exceeds the standard significance threshold. Therefore, we do not have enough evidence to state that Green CSR has a unit root or, in other words, does not have a unit root. Political connections are also proven to have no unit root. Data that does not have a unit root is called stationary. When a time series is said to be stationary, it indicates that the observations within the data are not affected by time. When summary statistics like mean or variance remain constant, and there are no trends or seasonal impacts, time series data is said to be stationary. The Causality Test of the Dumitrescu-Hurlin Panel is shown in Table 4.

Table 4's findings indicate that each variable has a causal association, indicating a long-term mutual impact relationship. The Dynamic threshold panel data model estimate is shown in Table 5.

Dynamic threshold panel data model estimation results for IMT-GT countries (Indonesia, Malaysia, and Thailand). We will focus on four different models (Model 1 to Model 4) and the variables involved. Firm Performance represents the outcome variable that you want to analyze. Firm performance is measured for each firm in the IMT-GT region. The threshold variable is "Education." This means that other independent variables (such as Green CSR, Technological Innovation, etc.) affect how the degree of education affects the company's success.

Table 4. Dumitrescu-Hurlin Panel Causality Test

	Influence Relationship	W-stat	Zbar-stat	Conclusion	
1.a.	Company Performance →Green CSR	1,69	1,32		
1.b.	Green CSR→Company Performance	1,29	1,54	1.	Company Performance ←→Green CSR
2.a.	Green CSR Technological innovation	1,53	1,41	2.	Green CSR ←→Technological innovation
2.b.	Technological innovation →Green CSR	1,47	1,22		
3.a.	Green CSR→Education	1,37	1,31	3.	Green CSR←→Education
3.b.	Education→Green CSR	1,61	1,32		
4.a.	Education→Technological innovation	1,29	1,11	4.	Education Technological innovation
4.b.	Technological innovation →Education	1,52	1,23		
5.a.	Education→Company Performance	1,68	1,22	5.	Education←→Company performance
5.b	Company Performance →Education	1,71	1,35		
6.a	Political connections →Company Performance	1,51	1,31	6.	Political connections ←→Company performance
6.b	Company Performance →Political connections	1,81	1,25		

This study combines quantitative analysis with a strong theoretical basis to investigate the effects of education and green CSR practices on firm performance. Based on the negative threshold estimation, it is found that the higher the level of education, the greater the effect on firm performance. The positive coefficients in the analysis indicate a significant relationship between education and improved firm performance (0.291, 0.287, 0.231, and 0.211), which aligns with the Human Capital Theory. Widarni, Drean, and Bawono (2022) explained that Human Capital Theory explains that education is an investment in human capital that can increase productivity and individual earning potential. In this context, companies that invest in employee education will benefit from increased skills and better performance.

Political connections also play an important role in improving corporate performance. Companies with strong political connections tend to access government funds and projects more efficiently, improve market performance, and attract investors (Najaf & Najaf, 2021). However, these connections must be managed wisely to avoid the risk of corruption and conflict of interest (Kijkasiwat et al., 2022). In addition to education, this study highlights the importance of green CSR practices. Positive coefficients (0.131, 0.117, 0.129, and 0.115) indicate that companies with good environmental and social practices (green CSR) tend to perform better. This finding aligns with the stakeholder theory, which states that companies are responsible for various stakeholders, including employees, customers, and communities. Education fosters positive stakeholder relationships by promoting transparency, accountability, and social responsibility. The Resource-Based View Theory also supports this finding by stating that a firm's internal resources, such as educated employees, provide a competitive advantage. Amaya et al. (2024) explained that education helps develop

valuable, rare, and inimitable resources essential for sustainable competitive advantage.

Table 5. Dynamic threshold panel data model estimation

	IMT-GT Model 1	Indonesia Model 2	Malaysia Model 3	Thailand Model 4
Dependent variable	Company Performance	Company Performance	Company Performance	Company Performance
Variable Thresholds	Education	Education	Education	Education
Threshold Estimate	0,291***	0,287***	0,231**	0,211**
Green CSR	0,131**	0,117***	0,129**	0,115**
Company Performance	0,122***	0,132**	0,133**	0,132**
Education	-0,201***	-0,192***	-0,141***	-0,131***
Technological innovation	0,171***	0,139***	0,166**	0,172**
Political connections	0,182***	0,159***	0,176**	0,182**
Constant	0,132***	0,122***	0,101***	0,092***
Wald test	39,11***	51,15***	57,26***	59,22***
Sargan teat	19,23	16,39	8,84	8,93
AR(1)	-1,001***	-1,002**	-1,006**	-1,002**
AR(2)	-0,834	-0,871	-0,855	-0,867
SupWald Statistics	17,41***	16,72**	16,23***	17,12***

Social Capital Theory shows that education increases social capital by building networks and fostering trust. Educated employees can better leverage social networks and political connections for the company's benefit ((Zhao et al., 2022). Thus, education improves company performance, strengthens political connections, and supports sustainable green CSR practices.

On Firm Performance (Lagged), Positive coefficients (0.122, 0.132, 0.133, and 0.132) indicate that past firm performance positively impacts current performance. On education, the positive correlations of 0.201, 0.192, 0.141, and 0.131 suggest a positive correlation between increased educational attainment and enhanced company performance. It is consistent with the previously discussed threshold effect. On Technological Innovation, Positive coefficients (0.171, 0.139, 0.166, and 0.172) indicate that firms that adopt technological innovation tend to perform better. Political connections are also shown to have a role in improving firm performance. Constant terms (0.132, 0.122, 0.101, and 0.092) represent baseline firm performance when all other variables are zero. The Wald test statistics (39.11, 51.15, 57.26, and 59.22) indicate the joint significance of all coefficients in the model. Significant values (*** denotes significance) indicate that the model fits well. The Sargan test statistics (19.23, 16.39, 8.84, and 8.93) assess the validity of the overidentification restriction in the model. Insignificant values indicate that the instruments used are valid. AR(1) and AR(2) are tests of autocorrelation. Negative coefficients (-1.001, -1.002, -1.006, and -1.002) indicate serial correlation in the errors. The SupWald statistics (17.41, 16.72, 16.23, and 17.12)

assess the joint significance of the threshold effect. Significant values indicate that the threshold model is better than the linear model.

Employee effectiveness at a firm is significantly impacted by job experience and educational attainment. Education is crucial for enhancing employees' abilities, knowledge, and skills. Higher-educated workers often comprehend their positions better and may use that information to their advantage. In addition, education also forms an upbeat personality and work attitude. Work experience also contributes to employee performance. The longer a person works in a company, the better their understanding of the work process, the tasks to be done, and how to overcome daily challenges. Work experience enriches practical skills and allows employees to face different situations more confidently. A good combination of education and work experience can improve overall employee performance. Companies focusing on education and providing development and training opportunities will have more productive and high-performing teams. Thus, education and work experience are key factors in achieving company goals.

Long-term financial performance is often higher for companies that adopt ESG (environmental, social, and governance) principles. Corporate governance, social issues, and the environment are all covered under ESG. Corporate Governance emphasizes transparency, ethics, and sustainability of corporate management. Companies that are good at governance are more sustainable and have a competitive advantage. Companies with better environmental and social practices (Green CSR) can positively impact their performance, especially if they holistically pay attention to ESG aspects.

Companies that adopt technological innovation can improve their operational efficiency. Technology enables automation of business processes, reduces production costs, and increases productivity. Businesses may enhance their operations by implementing cloud computing, data analytics, and artificial intelligence. Technological innovation provides companies with a competitive advantage. They can respond to market changes faster, adapt to industry trends, and better meet customer needs. Companies that invest in technology research and development can develop new products and expand their market share.

Technology allows companies to interact with customers more efficiently and personally. Mobile applications, e-commerce platforms, and AI-based customer service are examples of how technology improves the customer experience. Companies that focus on good customer experience tend to have higher customer loyalty.

Companies that collect and analyze data wisely can make better decisions. Technology allows companies to gain insights from data and optimize business strategies. By understanding trends and patterns through data analysis, companies can identify opportunities and reduce risks. In a constantly changing world, organizations that can adopt the latest technology and innovate will have a strong competitive advantage. Therefore, companies that invest in technological innovation tend to record better and more sustainable performance.

Political relationships significantly impact the success of a firm. Two factors, namely market performance and financial performance, may be used to assess a company's success in this context. Companies with Political connections usually get benefits such as ease of paying debts and high market power. In addition, political connections also affect the ease of companies obtaining funds, such as credit from banks or project contracts from the government. Company management that utilizes political connections well can efficiently manage operational activities and improve

performance. Increased performance, both in terms of market and finance, can attract investors to invest in the company.

In order to maximize the effects of technical innovation, green corporate social responsibility (CSR), and political ties on business success, education is essential. Political connections often affect a company's access to resources and business opportunities. However, However, education may increase the beneficial effects of political ties. How? Good education increases the capacity of company management to utilize Political connections ethically and efficiently. Educated leaders tend to be more careful in utilizing political connections for the company's benefit, avoid the risk of corruption, and ensure long-term performance sustainability. Environmentally conscious corporate social responsibility, or "Green CSR," is becoming increasingly important. Education is crucial for businesses to recognize the value of social and environmental responsibility. Inclusive education based on ethical values can shape a corporate culture that cares about the environment. Companies that invest in Green CSR can improve their brand image, attract investors, and strengthen relationships with stakeholders.

Technology-focused education provides expertise and understanding of innovation. Companies with employees educated in technology tend to be more adaptive to change and able to adopt innovation. Technology also plays a vital role in connecting companies with markets, customers, and business partners. With education that strengthens digital literacy, companies can optimize technological innovation to improve operational efficiency and performance. Education is an investment in individuals and the company's overall success. With a holistic approach, companies can integrate Political connections, Green CSR, and technological innovation to achieve sustainable and responsible performance.

The panel threshold estimation results show that education is important in driving firm performance in IMT-GT countries (Indonesia, Malaysia, and Thailand). Firms with higher levels of education tend to perform better. In the threshold model, the threshold values of education were 0,291, 0,287, 0,231, and 0,211, indicating that above this threshold, the impact of education on firm performance becomes more significant.

Firms that adopt better environmental and social practices (green CSR) also show higher performance. The significant positive coefficient on the green CSR variable indicates that firms with good green CSR practices not only fulfill their social responsibilities but also enhance their reputation and consumer trust, enhancing firm performance. This impact is amplified when the level of education is above a specific threshold value, indicating that a more educated workforce is more capable of implementing and utilizing green CSR practices more effectively.

Technological innovation is also found to significantly impact firm performance. Firms that adopt technological innovation tend to have better operational efficiency, competitive advantage, and customer experience. The positive coefficient on the technological innovation variable indicates that firms that utilize the latest technology can increase productivity and reduce operational costs. This effect is stronger in firms with a high level of education, indicating that more educated employees can better utilize technology and innovation to improve firm performance.

Political connections also play an important role in firm performance. Good political connections help firms access resources and business opportunities, improving performance. The significant positive coefficient on the political connections variable indicates that firms with strong political connections can better obtain support

and favorable policies from the government. This impact is more significant in firms with a high level of education, indicating that educated leaders can better utilize political connections effectively and ethically for the firm's benefit.

Education as a threshold variable strengthens the positive effects of green CSR, technological innovation, and political connections. Firms with a higher education level can maximize the benefits of good social and environmental practices, technological innovation, and political connections to achieve better and sustainable performance. These findings suggest that education directly improves firm performance and amplifies the positive impact of other variables. It suggests that firms that invest in employee education and development can better face business challenges and achieve long-term success.

Education drives firm performance, firms with better green CSR practices tend to have higher performance, firms that adopt technological innovation tend to have better performance, political connections affect firm performance, and education strengthens the role of green CSR, technological innovation, and political connections in driving business success. The threshold autoregressive panel data model helps capture the non-linear dynamics between these variables, providing a deeper understanding of the factors influencing firm performance in IMT-GT countries.

These findings have important implications for corporate and government policies in supporting education and skills development, encouraging responsible CSR practices, facilitating technological innovation, and building healthy political relations to improve firm performance and sustainable economic growth. With the right investment in education and responsible business practices, firms can achieve better and more sustainable performance, ultimately contributing to sustainable economic growth at the national and regional levels.

CONCLUSION

The conclusion of this study shows that education, green CSR practices, technological innovation, and political connections all positively influence company performance in IMT-GT countries (Indonesia, Malaysia, and Thailand). Education as a threshold variable strengthens the positive effects of these variables so that companies that focus on developing education and providing development and training opportunities will have more productive teams. ESG (Environmental, Social, and Governance) practices contribute to the company's long-term performance, while technological innovation improves operational efficiency, provides competitive advantage, and enhances customer experience. Companies with good political connections get benefits such as easy debt repayment, easier access to funds, and more significant business opportunities. Management that utilizes political connections effectively can improve company performance and attract investment.

However, this study has several limitations. First, it only covers annual data from 2012 to 2023, so the results may not reflect broader long-term changes. Second, the autoregressive threshold panel model used in this study may have limitations in capturing more complex non-linear dynamics between variables. Third, it only covers IMT-GT countries, so the results may not be generalizable to other countries or regions with different economic and political characteristics.

For similar studies in the future, it is recommended to expand the scope of time and study area to capture broader long-term dynamics and ensure more representative results. In addition, using more complex and sophisticated analysis models, such as more advanced non-linear dynamic models, can help capture more complex relationships between variables. Future studies can also consider other factors that may

affect firm performance, such as government policies, macroeconomic conditions, and cultural factors, to provide a more comprehensive understanding of these factors.

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