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# SYNERGY OF DIGITALIZATION AND FIRM SIZE TO OPTIMIZE FINANCIAL PERFORMANCE: AN EMPIRICAL STUDY OF THREE ASEAN COUNTRIES

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## ABSTRACT

**Purpose:** This study aims to analyze the effect of firm size and digitalization on financial performance. It also examines the moderating role of digitalization in the relationship between firm size and financial performance.

**Methodology/approach:** A quantitative approach is employed in this study, grounded in established theory to develop a conceptual framework and hypotheses. The analysis is conducted using data and quantitative statistical techniques to test the relationships between variables.

**Findings:** The results reveal that firm size and digitalization do not consistently have a positive impact on financial performance. In Indonesia and Singapore, firm size enhances financial performance, but not in Malaysia. Conversely, digitalization improves financial performance in Malaysia but fails to do so in Indonesia and Singapore. Furthermore, in Malaysia, digitalization weakens the relationship between firm size and financial performance, whereas no moderating effect is found in Indonesia and Singapore.

**Practical implications:** The findings highlight the need for context-specific digitalization strategies. In Malaysia, continued government support for digitalization is essential. In contrast, companies in Indonesia and Singapore should balance digital investment with efficiency and competitiveness strategies.

**Originality/value:** This study introduces digitalization as a moderating variable to clarify previous inconsistencies regarding the impact of firm size on financial performance, considering differences between developing and developed countries.

**Keywords:** Digitalization; Financial Performance; Firm Size; Signalling Theory.

## ABSTRAK

**Tujuan penelitian:** Penelitian ini bertujuan untuk menganalisis pengaruh ukuran perusahaan dan digitalisasi terhadap kinerja keuangan. Penelitian ini juga menganalisis peran moderasi digitalisasi dalam hubungan antara ukuran perusahaan dan kinerja keuangan.

**Metode/pendekatan:** Pendekatan kuantitatif digunakan dalam penelitian ini, dengan dasar teori yang kuat untuk membangun kerangka konseptual dan hipotesis. Analisis dilakukan menggunakan data dan teknik statistik kuantitatif untuk menguji hubungan antar variabel.

**Hasil:** Hasil penelitian menunjukkan bahwa, ukuran perusahaan dan digitalisasi tidak selalu berdampak positif terhadap kinerja keuangan. Di Indonesia dan Singapura, ukuran perusahaan meningkatkan kinerja keuangan, namun tidak di Malaysia. Sebaliknya, digitalisasi meningkatkan kinerja keuangan di Malaysia, namun gagal di Indonesia dan Singapura. Selain itu, digitalisasi di Malaysia melemahkan hubungan antara ukuran perusahaan dan kinerja keuangan, sedangkan di Indonesia dan Singapura tidak terdapat efek moderasi.

**Implikasi praktik:** Temuan ini menunjukkan pentingnya strategi digitalisasi yang konteksual. Di Malaysia, dukungan pemerintah terhadap digitalisasi perlu diperkuat, sementara di Indonesia dan Singapura perusahaan perlu menyeimbangkan investasi digital dengan efisiensi dan daya saing.

**Orisinalitas/kebaharuan:** Studi ini memperkenalkan digitalisasi sebagai variabel moderasi, menjelaskan perbedaan hasil sebelumnya terkait pengaruh ukuran perusahaan terhadap kinerja keuangan dalam konteks negara maju dan berkembang.

**Kata kunci:** Digitalisasi; Kinerja Keuangan; Teori Sinyal; Ukuran Perusahaan.

## INTRODUCTION

The Covid-19 pandemic has resulted in a global economic crisis that has reduced the world's Gross Domestic Product (GDP) by -3.1%, having a direct impact on the decline in the financial performance of companies in various countries (Rojas-García et al., 2024). This decline not only weakens the company's financial position but also increases the risk of bankruptcy, especially in the manufacturing sector, which is sensitive to economic fluctuations (Alarussi & Gao, 2023). Financial performance refers to the company's ability to achieve positive financial performance in a sustainable and long-term manner (Solling Hamid, 2020). According to Kalyuzhnaya et al. (2020); Serban et al. (2023), Amidst increasing economic challenges, financial performance that reflects a company's ability to maintain positive results on an ongoing basis is the main benchmark in assessing a company's competitiveness. Companies with good financial performance tend to attract more investors and have stronger resilience to financial risks (Jothi & Menon, 2024).

In this regard, firm size has long been considered an important determinant that can influence financial performance, where large companies are generally more able to manage operations efficiently and have stronger resistance to financial risks (Lumapow & Tumiwa, 2017). The larger the size of the company, the better the company is at managing company operations (Ambrose et al., 2019). However, a study by Arifaj et al. (2023), shows that larger firms may experience a decline in financial performance due to increased bureaucratic complexity and reduced agility in adapting to dynamic market conditions.

Although many previous studies confirm a positive relationship between firm size and financial performance, there is inconsistency in the empirical findings (Ambrose et al., 2019; Arifaj et al., 2023; Lumapow & Tumiwa, 2017). Some studies show insignificant or even contradictory results, which may be caused by differences in research context, measurement methods, and observation periods. Pokhariyal (2019) stated that this inconsistency may occur due to the presence of other variables, such as moderating variables, which have not been adequately accounted for in previous research models. To address this inconsistency, this study proposes digitalization as a moderating variable that is thought to influence the relationship between firm size and financial performance. Digitalization can have a significant impact on firm competitiveness by accelerating the innovation process and increasing operational efficiency (Stolterman & Fors, 2004). However, the impact of digitalization is not always linear or positive, because its implementation requires high costs and readiness that may not be available to all companies, especially in developing countries (Urbach & Roeglinger, 2019). Therefore, companies must utilize digitalization for business strategies to succeed in changing competitive environments (Legner et al., 2017).

Digitalization has recently become a way to achieve competitive advantage and company differentiation (Ferreira et al., 2018). Digitalization has changed the way organizations and consumers interact and exchange value (Jain et al., 2013). Although digitalization is not a new phenomenon, it continues to develop and has new impacts on the business world (Ferreira et al., 2018). Companies that continue to adapt to digitalization will be more favoured by the market and perform better than other companies (Dubey et al., 2019; Huang et al., 2020; Yasmin et al., 2020). Digitalization brings both beneficial and detrimental consequences to company performance. The beneficial consequences are optimizing production processes and increasing the company's ability to face complex environments, thereby improving financial performance (Hitt & Brynjolfsson, 1996; Wamba et al., 2017). Despite the vast benefits of digitalization for companies, digitalization also brings adverse consequences to

company performance. This occurs due to the management and learning costs incurred by companies (Kohtamäki et al., 2020). Therefore, digitalization creates uncertainty about profits and losses in a company.

Digital adaptation significantly impacts the economy in ASEAN, with the ASEAN digital economy accounting for 7% of GDP in 2018, a significant increase in gross merchandise value (GMV) originating from digital platforms, and a widespread use of financial technology (fintech) reaching USD 600 billion in 2019 and USD 620 billion in 2020 (Abdillah, 2024). This indicates an increase in digitalization, coinciding with the emergence of successful digital economic policies in ASEAN. However, not all ASEAN countries, including Indonesia, have equally distributed digitalization. According to data from the Asian Development Bank (ADB) in 2020, Indonesia's level of innovation and digitalization was only 0.08, far below Thailand and Vietnam, which were 0.62 and 0.44, respectively (Elena, 2020). Digital adaption has been shown to enhance firm performance through improved efficiency, innovation, and customer engagement (Moro-Visconti et al., 2025; Zeng et al., 2022)

This study makes a major contribution by adding digitalization as a moderating variable in the relationship between company size and financial performance in ASEAN countries. The novelty of this study lies in the selection of a regional context that includes developed countries (Singapore) and developing countries (Indonesia and Malaysia). This study uses panel data from manufacturing companies listed on the stock exchanges of each country in the period 2014-2023, thus allowing a comprehensive analysis of the influence of digitalization in various stages of economic development. This study refers to Signalling Theory, which states that companies can provide signals to the market to reduce information asymmetry between management and investors (Connelly et al., 2010). In this context, company size and level of digitalization can be considered signals indicating operational excellence and the company's readiness to adapt to technological developments (Kohtamäki et al., 2020).

This study aims to answer whether company size and digitalization have a positive effect on financial performance and whether digitalization strengthens the positive effect of the relationship between company size and financial performance. Theoretically, this study contributes to the literature that highlights the role of digitalization as a moderating factor in corporate financial performance. On the practical side, the results of this study are expected to help corporate managers in designing effective digitalization strategies and provide insights for policymakers to develop regulations that support the adoption of digital technology in the manufacturing sector. A better understanding of the impact of digitalization on financial performance can also help ASEAN countries in formulating policies that support digital transformation to improve the competitiveness of the manufacturing industry.

The total assets owned by the company indicate the size of the company (Dang et al., 2018). The larger the size of the company, the more positive the signal will be. This positive signal encourages investors to invest in the company (Sudrajat & Daud, 2020). This view aligns with signaling theory, which suggests that firm size serves as a credible signal to external parties, especially investors, regarding the firm's strength, stability, and future profitability (Ispriyahadi et al., 2021). Capital investment by investors boosts a company's financial performance because the company gains additional resources to drive growth, profits, and operational gains (Yen et al., 2023). Previous research indicates that large companies are more likely to secure financial assistance due to their perceived reliability and ability to produce on a larger scale, resulting in improved financial performance (Maharani & Eka, 2023). The

research of Amimakmur et al. (2024) proves that large companies often achieve superior financial results compared to smaller ones. Large companies often have greater access to financial resources, which leads to greater operational efficiency and increased profitability, ultimately improving their financial performance. Thus, the hypothesis in this study is:

**H1**: Firm size has a positive influence on financial performance.

Digitalization is the integration of digital products into a company to increase efficiency in the company (Voitsekh, 2023). Digitalization encourages transparency in the company (Schnelle et al., 2023). According to Salvi et al. (2023), widespread transparency signals investors to invest in the company. This could potentially enhance the company's financial performance, as it receives additional capital from investors for product development. Previous studies have found that digitalization can improve financial performance (Abou-foul et al., 2021; Ekinci, 2021; Gupta et al., 2021; Kohtamäki et al., 2020; Zeng et al., 2022). Digitalization directly correlates with a company's financial performance, as companies that adopt it tend to be more profitable and earn higher incomes than those that do not (Abou-foul et al., 2021). Digitalization can establish a customer-interconnected business network, thereby enhancing user efficiency and offering valuable customer insights via the company's social media platforms (Gupta et al., 2021).Social media has recently become the most effective media for sharing experiences and information about a company's products or services (Akmese et al., 2016). Potential consumers can interpret this information as a signal when making purchases. Therefore, social media as an implementation of digitalization can potentially increase the number of company sales, thereby increasing profits and impacting the company's financial (Muhammad & Aprilia, 2021). Thus, the hypothesis in this study is:

**H2:** Digitalization has a positive influence on financial performance

Large companies are often a positive signal in terms of the company's financial condition (Yen et al., 2023). Investors and creditors trust large companies more than small ones, making them easier to obtain funding (Maharani & Eka, 2023). Furthermore, large companies tend to achieve profits more easily due to wider access to financial resources to expand production, thereby increasing the company's profitability (Amimakmur et al., 2024). Large companies tend to invest more easily in digitalization, due to adequate access to funding (Lastauskaite & Krusinskas, 2024). Digitalization creates a distinctive informative advantage through integration and transformation with other resources (Akhtar et al., 2019). Research by Salvi et al. (2023), stated that digitalization can be a signal to investors. This signal comes in the form of information indicating that companies investing in digitalization are becoming more transparent in comparison to their peers. Experts believe that digitalization enhances the correlation between the size of a company and its financial performance. Digitalization investment in large companies can increase financial performance (Lastauskaite & Krusinskas, 2024). This is because large companies that adopt digitalization can be a signal to investors, because large companies show higher profitability Ševkušić (2020) and are more transparent so that investors are interested in investing in the company (Yu et al., 2023). As a result, investors provide the company with additional capital for product development, thereby boosting its profitability and financial performance (Salvi et al., 2023). Thus, the hypothesis in this study is:

**H3:** Digitalization strengthens the positive relationship between firm size and financial performance.

## METHODS

This study used a quantitative approach that prioritizes theory in building a framework and hypothesis, focuses on answers regarding the existence or absence of relationships between variables, and uses quantitative data and analysis tools. Based on the formulation of the problem and research objectives, this study is classified as explanatory research. This study investigates how digitalization moderates the effect of company size on financial performance in both developed and developing countries.

The study's population consists of manufacturing companies that are listed on the stock exchange. We conducted this research in developing and developed countries within ASEAN, specifically Indonesia, Malaysia, and Singapore. We selected manufacturing companies as the study's population due to their large size and perceived ability to invest in digital transformation. This study aims to investigate how digitalization moderates the impact of company size on financial performance in both developing and developed countries within ASEAN.

The researcher determined criteria, commonly known as the purposive sampling technique, to select the study's sample. The purposive sampling criteria in this study refer to companies that possess comprehensive data on the variables required for the study.

| **Indonesia** | |
|---|---|
| **Criteria** | |
| Manufacturing companies that were consistently listed on the IDX from 2014 to 2023. | 1.830 |
| Companies that do not have missing or incomplete financial data related to the variables used in this study (Net income and total assets) | 492 |
| **Total Sample** | **1.338** |
| **Malaysia** | |
| **Criteria** | |
| Manufacturing companies that were consistently listed on the FBM KLCI from 2014 to 2023. | 3.970 |
| Companies that do not have missing or incomplete financial data related to the variables used in this study (Net income and total assets) | 1.196 |
| **Total Sample** | **2.774** |
| **Singapore** | |
| **Criteria** | |
| Manufacturing companies that were consistently listed on the SGX from 2014 to 2023. | 2.060 |
| Companies that do not have missing or incomplete financial data related to the variables used in this study (Net income and total assets) | 821 |
| **Total Sample** | **1.239** |
| **Overal Total Sample** | **5.351** |

**Table 1.** Purposive Sampling

Source: processed by researcher (2024)



After sample identification, the number of samples in this study was 5,351 companies, specifically 1,338 companies from Indonesia, 2,774 companies from Malaysia, and 1,239 companies from Singapore, covering the period from 2014 to 2023. The study uses secondary and unbalanced data. This is because the data in this study have different numbers

of time series units in cross-section units. The database program www.lseg.com serves as the study's data source.

The measurement instruments for the variables in this study are as follows: First, financial performance describes the company's condition through financial ratio analysis to generate profits, reflect efficiency, and assess management's ability to allocate resources (Alawamleh et al., 2022; Kusuma, 2021; Rahim et al., 2024). A company's financial performance can be characterized by a variety of indicators, including profitability, sales growth, and stock returns (W. Chen & Srinivasan, 2024; Eremina et al., 2019). This study measures financial performance using ROA, referring to previous research (Alawamleh et al., 2022; Kusuma, 2021; Rahim et al., 2024). ROA measures how well a business uses its assets to produce profits (Lestari et al., 2022). Here is the ROA formula used in this study:

$$\boldsymbol{ROA = \frac{Net\ Income\ \times 100\%}{Total\ Assets}}$$

Second, firm size reflects the size of the company as seen from total assets, total sales, and market capitalization (G. Chen et al., 2020; Dang et al., 2018; Wicaksari et al., 2024). The total assets owned by the company serve as the measure of firm size in this study. Larger assets reflect better financial performance in the company (Maharani & Eka, 2023). This study refers to previous research that uses the natural logarithm of total assets as a proxy for firm size (G. Chen et al., 2020; Dang et al., 2018; Maharani & Eka, 2023; Wicaksari et al., 2024). Here is the firm size formula:

$$\boldsymbol{Firm\ Size = Ln(Total\ Assets)}$$

Third, digitalization involves the application of the latest technologies to improve operations, enhance customer service, and maximize management effectiveness, which supports modernization and increased efficiency (Tretyakova et al., 2024). The adoption of technology in businesses and the integration of digital technologies like big data platforms, analytics, cloud mobile, and social media are signs of digitalization (Chaushi et al., 2024). This study uses a dummy variable to proxy the company's digitalization efforts. Companies that integrate social media into their technological development receive code 1, while those that have not adopted social media receive code 0 (Fitzgerald et al., 2014; Li et al., 2024).

This study uses panel data regression analysis to examine the effect of company size (X) on financial performance (Y), with digitalization (Z) as a moderating variable. The analysis is conducted using EViews 12, chosen for its user-friendly interface and ability to handle panel data, which combines cross sectional and time series data. The model selection process involves three stages: First, the Chow Test determines whether the optimal model is a fixed effect or a common effect model; if the probability is greater than 0.05, the common effect model is selected, while a probability less than 0.05 leads to the fixed effect model. Second, the Hausman Test selects between a fixed effect or random effect model; if the probability is greater than 0.05, the random effect model is chosen, otherwise, the fixed effect model is preferred. Third, the Lagrange Multiplier Test helps determine whether random or common effects model is selected, while a value less than 0,05 indicates a better fit for the random effect model. Prior to analysis, several classical assumption test are performed: the Normality Test checks if the residuals of the model are normally distributed, with data considered normal if the probability value exceeds 0.05: the Heteroscedasticity Test ensures that the residual variance is consistent across observations, with a p-value greater than 0,05 indicating no heteroscedasticity; the Multicollinearity Test checks for high correlations among independent variables, with correlations less than 0.80 indicating no multicollinearity; and

the Autocorrelation Test assesses the correlation of residuals across different time periods, with a Durbin Watson value between -2 and +2 considered acceptable. These tests are conducted to ensure the validity of the regression model.

We conduct hypothesis testing at a significance level of 0.05 to assess the relationship between independent, moderating, and dependent variables. We use the R-squared value to assess how well the independent variables explain the variation in the dependent variable. Hypothesis decisions are based on probability values, with H0 accepted if the probability > 0.05 and H0 rejected if the probability ≤ 0.05.

In this study, we used the following regression equation model:

Model 1 $Y = a + \beta_1 X1 + e$
Model 2 $Y = a + \beta_1 X1 + \beta_2 Z + e$
Model 3 $Y = a + \beta_1 X1 + \beta_2 Z + \beta_3 X1*Z + e$

*With:*
*Y: Financial Performance*
*X: Firm Size*
*Z: Digitalization*
*X*Z: Firm Size*Digitalization*
*a: Constanta*
*e: Error*

## RESULTS AND DISCUSSION

### RESULTS

Based on the results of the Indonesian data model test, the R-squared value was 41.1%, the Malaysian data obtained an R-squared value of 99.1%, and the Singapore data obtained an R-squared value of 55.5%. This indicates that the variables in the research model account for 41.1% of the financial performance variable in Indonesia, 99.1% in Malaysia, and 55.5% in Singapore.

**Table 2.** Determination Coefficient Results

| | **Probability** |
|---|---|
| Indonesia | 0,411340 |
| Malaysia | 0,991258 |
| Singapore | 0,555040 |

Source: processed secondary data (2024)

The following are the results of the t-statistic test in this study:

**Table 3.** T-Statistic Results

| **Dependent: Financial Performance** | | | |
|---|---|---|---|
| **Variable** | **Indonesia** | **Malaysia** | **Singapore** |
| Firm Size (UP) | 0,02383 | 0,00340 | 0,13223 |
| | (2,33) | (0,04) | (2,06) |
| Digitalization (DT) | 0,11529 | 1,64867 | -0,32000 |
| | (0,66) | (2,28) | (-0,44) |
| Firm Size*Digitalization (UP*DT) | -0,01399 | -0,15567 | 0,02784 |
| | (-0,89) | (-2,19) | (0,44) |

| | | | |
|---|---|---|---|
| Constant | -0,23478 (-2,00) | 0,13370 (0,18) | -1,59332 (-2,16) |

Source: processed secondary data (2024)



Thus, the panel data regression equation model is as follows:

Y = -0,23478 + 0,02383 UP + 0,11529 DT – 0,01399 UP*DT + ε (Indonesia)

Y = 0,13370 + 0,00340 UP + 1,64867 DT - 0,15567 UP*DT + ε (Malaysia)

Y = -1,59332 + 0,13223 UP -0,32000 DT + 0,02784 UP*DT + ε (Singapore)

We conducted panel data regression analysis in this study using the E-views 12 program. This section will outline the outcomes of the formulated research hypothesis testing and subsequently delve into each existing finding. The conclusion of the hypothesis testing results in this study can be found below:

**Table 4.** Hypothesis Results

| | Hypothesis | Probability | | |
|---|---|---|---|---|
| | | **Indonesia** | **Malaysia** | **Singapore** |
| **$H_1$** | Firm size has a positive influence on financial performance. | 0.0195 (Accepted) | 0.9615 (Rejected) | 0.0387 (Accepted) |
| **$H_2$** | Digitalization has a positive influence on financial performance. | 0.5038 (Rejected) | 0.0222 (Accepted) | 0.6549 (Rejected) |
| **$H_3$** | Digitalization strengthens the positive relationship between firm size and financial performance. | 0.3721 (Rejected) | 0.0279 (Rejected) | 0.6552 (Rejected) |

Source: processed secondary data (2024)

The results of the Indonesian panel data regression analysis test on the t-test of hypothesis 1 show that there is a positive coefficient value of 0.02383 with a significance value of 0.0195 (0.0195 < 0.05). This value validates the acceptance of hypothesis 1, indicating a positive impact of firm size on financial performance in manufacturing companies listed on the Indonesia Stock Exchange during the 2014-2023 period.

The Malaysian panel data regression analysis test, when applied to the t-test of hypothesis 1, reveals a positive coefficient value of 0.00340, accompanied by a significant value of 0.9615 (0.9615 > 0.05). This value can prove that hypothesis 1 is rejected, which means that there is no positive effect of firm size on financial performance in manufacturing companies listed on the Malaysia Stock Exchange for the 2014-2023 period.

The results of the Singapore panel data regression analysis test on the t-test of hypothesis 1 show that there is a positive coefficient value of 0.13223 with a significance value of 0.0387 (0.0387 < 0.05). This value validates the acceptance of hypothesis 1, indicating a positive impact of company size on the financial performance of manufacturing companies listed on the Singapore Stock Exchange during the 2014-2023 period.

The Indonesian panel data regression analysis test, when applied to the t-test of hypothesis 2, reveals a positive coefficient value of 0.11529, accompanied by a significant value of 0.5038 (0.5038 > 0.05). This value indicates the rejection of hypothesis 2, implying that digitalization has no positive impact on the financial performance of manufacturing companies listed on the Indonesia Stock Exchange during the 2014-2023 period.

The results of the Malaysia panel data regression analysis test on the t-test of hypothesis 2 show that there is a positive coefficient value of 1.64867 with a significance value of 0.0222

(0.0222 < 0.05). This value validates the acceptance of hypothesis 2, indicating a positive impact of digitalization on the financial performance of manufacturing companies listed on the Malaysia Stock Exchange between 2014 and 2023.

The Singapore panel data regression analysis test, when applied to the t-test of hypothesis 2, reveals a negative coefficient value of -0.32000, accompanied by a significant value of 0.6549 (0.6549 > 0.05). This value indicates the rejection of hypothesis 2, implying that digitalization has no positive influence on financial performance in manufacturing companies listed on the Singapore Stock Exchange for the period 2014-2023.

The Indonesian panel data regression analysis test, when applied to the t-test of hypothesis 3, reveals a negative coefficient value of -0.01399, accompanied by a significant value of 0.3721 (0.3721 > 0.05). This value can prove that hypothesis 3 is rejected, which means that digitalization cannot weaken or strengthen the influence of company size on financial performance in manufacturing companies listed on the Indonesian Stock Exchange for the 2014–2023 period.

The results of the Malaysian panel data regression analysis test on the t-test of hypothesis 3 show that there is a negative coefficient value of -0.15567 with a significance value of 0.0279 (0.0279 < 0.05). This value indicates the rejection of hypothesis 3, implying that Digitalization diminishes the impact of company size on financial performance in manufacturing companies listed on the Malaysia Stock Exchange during the 2014-2023 period.

The results of the Singapore panel data regression analysis test on the t-test of hypothesis 3 reveal a negative coefficient value of 0.02784, accompanied by a significance value of 0.6552 (0.6552 > 0.05). This value can prove that hypothesis 3 is rejected, which means that digitalization cannot weaken or strengthen the influence of company size on financial performance in manufacturing companies listed on the Singapore Stock Exchange for the period 2014–2023.

## DISCUSSION

### Firm Size and Financial Performance

In the context of developing countries, namely Indonesia, company size has a positive effect on financial performance. The larger a company is, the greater the impact on the financial performance of manufacturing companies. Large companies provide a positive signal to investors so that investors are interested in investing their money in the company (Sudrajat & Daud, 2020). The company uses this investment as additional capital to develop products, which boosts the company's profitability and financial performance (Salvi et al., 2023). Previous research indicates that large companies typically enhance their financial performance in Indonesia (Amimakmur et al., 2024; Maharani & Eka, 2023).

In the context of other developing countries, specifically Malaysia, the results of this study show that firm size does not significantly impact financial performance. The results of this study are not in line with signal theory. This may be because manufacturing companies in Malaysia are volatile and have higher risks. Furthermore, there may be information inefficiencies in Malaysian companies, which could potentially impact their financial performance (Amin et al., 2024). The results of this study are in line with research Sia et al. (2018) this demonstrates that the size of a company does not influence its financial performance.

In the context of developed countries, namely Singapore, firm size has a positive effect on financial performance. Developed countries companies attract investors due to their lower systematic risk compared to those in developing countries (Bayramoglu & Başarır, 2019). Companies from developed countries have a major advantage because of their access to broader financial resources (Khanna & Palepu, 2006). Furthermore, large companies can leverage resources to achieve greater economies of scale and lead to increased company performance (Ho et al., 2018). The results of this study are in line with research (Amimakmur et al., 2024; Maharani & Eka, 2023).

### Digitalization and Financial Performance

In the context of developing countries, namely Indonesia, digitalization has no effect on financial performance. The results of this study contradict the signal theory. Manufacturing companies in Indonesia reflect digitalization through their use of social media. Companies that utilize digitalization do not impact their financial performance. This may be because many companies are reluctant to adopt digitalization because they do not understand its proper function and use (Rizkalla et al., 2023). Furthermore, the company does not believe that the use of digitalization will result in significant benefits (Papachristos et al., 2014). Therefore, many companies have not adopted digitalization, ensuring that it has no impact on their financial performance. Therefore, many companies have not adopted digitalization, which contributes to its lack of impact on financial performance. These findings are consistent with the study by Sudrajad et al. (2023), which also shows that digitalization does not effect on financial performance.

The results of this study differ in the context of other developing countries, specifically Malaysia, they indicate that digitalization positively impacts financial performance. Investors in developing countries like Malaysia can accept digitalization as a positive signal (Salvi et al., 2023). Companies that adopt digitalization are considered more transparent, so they can attract investors to invest their capital in the company (Schnelle et al., 2023). The company uses the capital to develop its products in order to improve its financial performance (Salvi et al., 2023). Furthermore, through digitalization, especially social media, companies can market products to attract consumers, thereby increasing sales and financial performance (Muhammad & Aprilia, 2021). These findings are consistent with the study by Yang & Ming (2024), which also shows that digitalization enhances financial performance.

In the context of developed countries, namely Singapore, digitalization has no effect on financial performance. The results of this study are not in line with the signal theory. In developed countries, digitalization, such as the use of social media, is a must for companies, so it no longer provides a strong signal for investors (Schreckling & Steiger, 2017). The amount of information content published through digitalization on social media platforms does not affect the company's value. This may be due to the limited nature of the information content, which primarily focuses on the company's products or services, making it less attractive to potential investors (Santosa & Salma, 2023).

### The Moderating Role of Digitalization in Firm Size and Financial Performance

In the context of developing countries, namely Indonesia, digitalization cannot strengthen the positive influence of company size on financial performance. The results of this study contradict the signal theory, which posits that any information, including digitalized information, can serve as a signal for the recipient. This is because, in Indonesia, there are not too many large companies that utilize digitalization, due to a lack of knowledge of the

benefits of using social media (Papachristos et al., 2014). Furthermore, large companies tend to use more traditional promotions than social media (Rizkalla et al., 2023). Thus, digitalization cannot strengthen the relationship between company size and financial performance.

In the context of other developing countries, namely Malaysia, digitalization weakens the positive influence of company size on financial performance. This result also does not support the signal theory. Digitalization actually weakens the positive influence of company size on financial performance. Excessive digitalization by companies will not be effective. Excessive use of social media by both large and small companies, such as showcasing their achievements, can be perceived as arrogant and haughty, potentially negatively impacting the company's financial performance (Suryani & Fernando, 2024).

In the context of a developed country, namely Singapore, digitalization cannot strengthen or weaken the positive influence of company size on financial performance. The results of this study contradict the signal theory. Large companies and small and medium enterprises (SMEs) have widely adopted digitalization in developed countries (Schreckling & Steiger, 2017). Digitalization is no longer a positive signal for investors to invest in companies. Therefore, we can conclude that digitalization neither strengthens nor weakens the positive influence of company size on financial performance.

## CONCLUSION

The study's results indicate that, contrary to the signaling theory, company size and digitalization do not consistently enhance the financial performance of manufacturing companies in both developing and developed countries. In Indonesia, as a developing country, and Singapore, as a developed country, company size can improve the financial performance of manufacturing companies. This result is different from other developing countries, namely Malaysia, which shows that company size cannot improve company performance. Digitalization can enhance financial performance in developing countries like Malaysia, but it doesn't have the same effect in other developing countries like Indonesia and developed countries like Singapore. Furthermore, digitalization in Malaysia, a developing country, weakens the positive effect of company size on financial performance. This is in contrast to other developing countries such as Indonesia and Singapore, which demonstrate that digitalization neither weakens nor strengthens the positive effect of company size on financial performance.

This study has limitations. First, digitalization is measured using dummy variables, which may not reflect the variation in the use of digitalization within companies due to the limited data obtained by researchers. Second, many companies have research data that is not publicly available, thus reducing the sample of companies used in the study. Therefore, researchers suggest that further research can consider other proxies to measure the use of digitalization, such as big data implementation, level of automation, and intensity of technology use in companies.

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