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**IMAGINING AN INCLUSIVE ECONOMY:
THE ROLE OF SMES AND DIGITAL PAYMENT
IN ELEVATING ECONOMIC EQUALITY**

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Abstract

Central to this study are small and medium enterprises (SMEs) and mainstreaming digital features that transform access to finance in imagining an inclusive economy. Underlining the advancement in technology, especially in the context of a digital payment system, perpetuates the financial-economic rationale as a means of financial inclusion. Nevertheless, the implementation remains a long-standing challenge, most notably in developing economies. Thus, this study assesses SMEs' efforts and digital payment in elevating economic equality in Southeast Asia. The panel data approach, as the econometric technique, is employed to examine the relationship between SMEs' contribution to the gross domestic product (GDP), digital payment, and the existing inequality proxied by the Gini coefficient. This study concludes with two core findings: (1) SMEs significantly help reduce inequality within the economy; (2) digital payment, as a digital transformation, narrows the inequality gap within Southeast Asian countries. Concluding remarks, recommendations, and suggestions for future research are presented.

Keywords: SMEs, digital payment, economic inequality, Southeast Asia

JEL Classification: E42, I31, O53

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1. INTRODUCTION

Financial inclusion reaps high-yielding economic benefits such as helping low-income people in managing risk, absorbing financial crises, and establishing a strong foundation for an inclusive economy by increasing job creation and investment (Soejachmoen 2016). The predominantly low-income group often remains underserved—in that they believe they have no money and find themselves economically disadvantaged in terms of financial services. Nevertheless, the growth of the economy in the long term will touch all parts of society and improve the well-being of all, including the poor and vulnerable. In other words, a trend is clear, in that serving the “left behind” people is now financially feasible, and this community represents a huge proportion of the population (Soejachmoen 2016).

Central to this study are small and medium enterprises (SMEs), where economically vulnerable groups are often found in the world population. SMEs represent the first step in the career and world of entrepreneurs. This makes sense as two-thirds of newly created jobs are due to the small and medium sectors (Savlovschi and Robu 2011). In today’s complex economy, SMEs are a place where new ideas are born and new processes are created that quicken the use of effective resources (Zaman and Vilceanu 1999). Another essential feature is that SMEs are drivers of technical innovation that is relevant in the economy (Savlovschi and Robu 2011). With their unique role in the innovation mechanism, SMEs can create new technological space and improve information technology systems (Almeida 2004). Almost all countries’ statistics have shown that 99% of enterprises are SMEs, and this sector plays a key role in the gross domestic product (GDP) and the job supply (Savlovschi and Robu 2011). Undoubtedly, SMEs have played a critical role in sustaining a viable economy (Manzoor et al. 2019). Through substantial job creation, essentially to reduce poverty, SMEs serve as a largely innovative catalyst for the world economy (Manzoor et al. 2019). The relevance of this phenomenon is reflected in an emerging body of empirical research. For example, Edom, Inah, and Emori (2015) examine the relationship between SMEs and poverty and find that financing SMEs is the best way to reduce poverty. Also, a study by Kowo, Adenuga, and Sabitu (2019), exploring the role of SMEs in reducing poverty in Nigeria, reinforces the fact that SMEs’ development can alleviate poverty.

As an extraordinarily exponential technology transformation in the economy is now more feasible and has formed a sophisticated system, including in the financial sphere, digital architecture can also transform access to finance, and this is another focus of this study. In terms of digital finance, accounting for 71% of adults have a formal financial account, reflecting a significant increase in comparison to a decade ago when it was only 42% (World Bank 2022). This is a breakthrough given that leveraging technological innovation can help support the development, particularly for banking systems that provide accessible savings, credit, or other financial services for the people (Soejachmoen 2016). In addition, underlining the rapid changes in technology, especially in the context of electronic payment systems, could perpetuate the financial-economic rationale as a means of inclusivity in finance (ASEAN Secretariat 2021; Soejachmoen 2016). Global payment services that provide speed, convenience, ubiquity, safety, and value for money are considered imperative, especially with the rise of cross-border capital flows and trade as well as changing consumer behavior. What is very surprising is that, with the economic setbacks brought on by the COVID-19 pandemic, the pandemic may have accelerated the use of digital finance, including by micro, small, and medium-sized enterprises, and vulnerable households (Beirne, Villafuerte, and Zhang 2022). The role of financial technology (FinTech) has become

clear, especially in the form of digital payments, as it became a necessary mechanism for making financial transactions from a safety perspective during the pandemic. With economies mainly focused on economic recovery during 2022, the COVID-19 pandemic has created promising opportunities offered by the substantial growth in digital financial services and e-commerce among SMEs to remain economically viable—with financial services being faster, more efficient, and cheaper. Notably, the digital finance adoption within economies can be expected to play a stronger role in progressing financial inclusion further going forward (Beirne, Villafuerte, and Zhang 2022).

In addition, highlighting access to finance could unlock possible opportunities in terms of creation, growth, and productivity that will eventually allow individuals or enterprises to invest either in tangible or intangible capital (OECD 2021). Nevertheless, financing constraints have often left a gap among SMEs that restricts this group from spending on innovative projects, snatching growth opportunities, and coping with financial distress (OECD 2018). Therefore, the core motivation of this study is rooted in the fact that there remains a prevalent and significant disparity in income per capita across SMEs in emerging economies, which undoubtedly can devastate human development. Despite pressing challenges, SMEs are potential drivers that contribute to economic equality and shape positive social, environmental, and economic change. Unfortunately, some SMEs are “unbanked” and unable to access formal financial systems, thus connecting these “left behind” communities to reliable finance is crucial. A sophisticated technological system that creates more feasible financial services for all is considered indispensable for expanding financial inclusion through, for example, digital payment. However, its implementation remains a long-standing challenge. Examining how SMEs and digital payment contribute to reducing economic inequality is vital in providing a research-based policy of importance across developing economies.

This paper makes several contributions. First, while we draw upon data from countries in Southeast Asia, gaps exist, particularly the lack of existing literature on SMEs’ contribution and digital payment in elevating the level of economic equality among Southeast Asian nations. Delineating the current digital situation as large numbers of Southeast Asians involve themselves in digital transformation, leads to a second caveat, which is devoted to policymakers in the region, enhancing the development of SMEs and digitalizing financial services, despite the challenges, as they create a potentially larger benefit to spur economic development and prompt broader adoption of cross-border payment among businesses and individuals. Third, this paper examines the effect of SMEs’ contributions and digital payment in developing economies, which promises to narrow the inequality gap among digital-adopting countries. This paper is thus worth highlighting as a bold step in developing inequality-narrowing policy experienced by developing nations. This study proceeds as follows. Section 2 provides a glimpse of the digital society in Southeast Asia. Section 3 features a review of the literature. We delineate materials and methods and provide empirical results and discussions in Sections 4 and 5. Lastly, Section 6 concludes.

2. A GLIMPSE OF THE DIGITAL SOCIETY IN SOUTHEAST ASIA

Given the importance of countries’ view on policy design in the context of financial inclusion or, as optimistically referred to, an “inclusive economy,” this section provides a rigorous picture that provides insight into the situation in terms of digitalization among Southeast Asian nations, as displayed in Table 1.

Table 1: Digital Society in Southeast Asia

Country	Populations Who had Access to the Internet (% age 15+)	Populations Who Used a Mobile Phone or the Internet to Buy Something Online (% age 15+)				
		2017	2021	Made a Digital Payment (% age 15+)		
	2021	2017	2021	2014	2017	2021
Indonesia	51%	10%	18%	16%	27%	29%
Thailand	80%	17%	51%	22%	43%	84%
Singapore	94%	48%	58%	85%	84%	91%
Myanmar	74%	3%	20%	2%	4%	37%
Lao PDR	48%	6%	10%	–	8%	16%
Cambodia	69%	3%	4%	16%	12%	19%
Viet Nam	71%	19%	–	11%	16%	–
Malaysia	87%	34%	50%	46%	60%	66%
Philippines	77%	9%	36%	18%	14%	39%

Source: World Bank (2022).

The data show that, in 2021, the lowest number of people who had access to the internet (% age 15+) was in Lao PDR, followed by Indonesia, and the highest was in Singapore. This indicates that the current situation regarding the accessibility of the internet in Southeast Asia is satisfactory, except for in Lao PDR and Indonesia. For Indonesia, with its huge population and conditioned by many rural areas, addressing the conundrum in digital infrastructure development seems very challenging. In terms of the populations who used a mobile phone or the internet to buy something online (% age 15+), some Southeast Asian countries, including Thailand, Myanmar, and the Philippines, showed a significant increase from 2017 to 2021, but other countries presented only a slight increase (Indonesia, Singapore, Cambodia, and Malaysia) during this period. In addition, highlighting the digital payment (% age 15+) data in 2021, Singapore was well ahead of other nations in the region, indicating that Singapore has one of the highest number of people who utilize digital payment among Southeast Asian countries. As a developed island nation, Singapore continues to be a global financial hub. With this distinctive digital landscape compared to other Southeast Asian countries, Singapore is excluded in our observation.

In addition, benefiting from a bigger and younger population, Southeast Asia can potentially use seamless payment transactions in society. Digital payment such as via e-Wallet is the preferred financial digital platform in this region, as proven by the existence of at least 150 e-Wallet license holders (ASEAN Secretariat 2021). The impact of the COVID-19 pandemic meant that fast adoption of e-commerce, home deliveries, and contactless payments could even be achieved earlier than expected (ASEAN Secretariat 2021). This may need to be proactively addressed. For example, in Indonesia (the biggest economy in Southeast Asia), opening a bank branch is very challenging due to the existence of many remote rural areas. However, a high mobile phone penetration even among the poor is clearly feasible; thus, digitalizing the payment system is the most appropriate impetus among the necessary elements to enhance financial inclusion in this country (Soejachmoen 2016). The government of Indonesia, in late 2014, in collaboration with the private sector launched a digital payment system and noncash disbursement of the Social Protection Program. Despite challenges, the implementation of digital payment is a way forward for the inclusive financial movement in Indonesia. In addition, Thailand is aiming to turn the Thai population into a cashless society. In 2017, the Bank of Thailand (BOT) and the

Ministry of Finance passed the Act of Payment Systems 2017 B.E. (Buddhist Era) 2560 (Aimon, Sentosa, and Mahatir 2021). The aim of this legal act is to support innovative services and consumer protection. The BOT has also established Thailand's banking sector computer emergency response team in tackling cyber threats. Efficient and secured payment systems require a strong foundation for the sustainable development of the Thai economy (Aimon, Sentosa, and Mahatir 2021). The study by Aimon, Sentosa, and Mahatir (2021) demonstrates the potential development of digital payment in Thailand as indicated by the increase in the volume and value of e-Payment every year. Most Thai people depend on the e-Payment system to make financial transactions (Aimon, Sentosa, and Mahatir 2021). Various electronic platforms such as Internet/mobile banking, PromptPay, and e-Wallet are now very popular among Thais. For an e-commerce business, however, Internet/mobile banking seems to be preferred by society because it is more convenient and has lower fees. Similarly, the digital situation in Singapore varies compared to its neighboring countries.

Southeast Asian nations have taken various significant steps in developing digital infrastructure and improving financial accessibility, especially for SMEs. It is promising that the rapid diffusion of internet accessibility allows more people to use digital networks and digital services globally. Consequently, Southeast Asian countries could gain potential productivity from leveraging digital technologies and could attract both local and international customers. Such policy designs primarily look for appropriate financing approaches that can address the essential problems to help "poor unbanked SMEs" (OECD 2021). Brunei Darussalam, Cambodia, Lao PDR, Malaysia, Myanmar, the Philippines, and Thailand have established a development bank to create a financial market for SMEs (OECD 2021), while Singapore utilizes a sophisticated portfolio to help SMEs to gain access to finance, such as tax exemption schemes and public startup funds (matching funds with young startups).

Seemingly, given that the region has been enjoying economic growth and integration, there is much hope for growth and improvement in the payment sector. Southeast Asians realize the importance of the globalization and digitalization of the payment landscape and place emphasis on seamless cross-border payments in the region through the harmonization and modernization of payment infrastructures, accentuated by rigorous initiatives, including digital data governance, cybersecurity, online dispute resolutions, and consumer protection (ASEAN Secretariat 2021). Based on the data and conditions above, it should be noted that Southeast Asia displays potential economic development through cutting-edge digital finance.

3. LITERATURE REVIEW

3.1 SMEs, Digital Payment, and Economic Inequality

Enterprises are a heterogeneous economic entity with different levels of complexity. Notably, SMEs take up a high percentage of the total number of enterprises and provide the bulk of employment worldwide. Birch (1979) posits that small enterprises in particular are driving job creation. A study by Hassaas (2017) also supports the pro-SMEs view stating that SMEs are potential enablers in employment generation, poverty alleviation, and economic growth. However, in times of crisis (e.g., the COVID-19 pandemic), disparities, especially in accessing the internet and other digital facilities, have affected the ability of these low-income communities to work from home and generate income. Thus, promoting and supporting SMEs by helping them to join the digital economy is essential (ILO 2022). According to Hendiarto et al. (2021), when a community utilizes innovations in information technology, they can seize

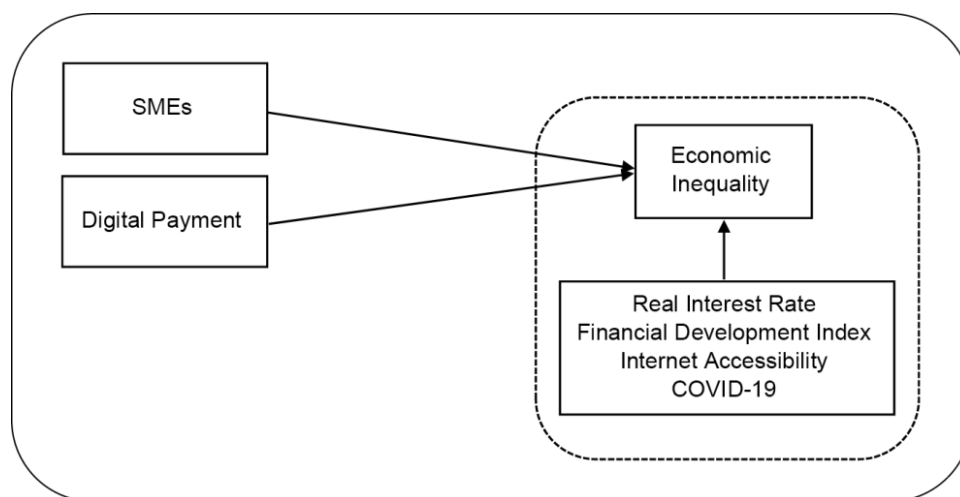
opportunities, particularly for SME entrepreneurs in undertaking financial activities anywhere with ease, safety, and control. In comparison to larger firms, as found by Acs and Audretsch (1987), SMEs present higher innovation rates in terms of technological development. The continued involvement of SMEs will potentially encourage more equitable economic growth. Nemoto and Yoshino (2019) state that improvement tends to increase when a company is small. If a company is small, the quality of financial data is likely to be low, but bank account information can complement this. If the use of the bank account information model spreads, banks can decrease credit costs and review times and costs and lend to SMEs more efficiently. Making it easier to overcome financial barriers can hasten growth and reduce inequality (Banerjee and Newman 1993; Galor and Zeira 1993). In addition, gaining access to financial services is easier when heavy financial requirements are relaxed, and this can bring financially vulnerable people into the financial market. Financial accessibility can benefit unbanked entrepreneurs and financially vulnerable households by helping them to manage the multitude of investments that have high returns, or beyond that, they can invest in the research and development (R&D) program, often by adopting new processes and technology. This potential benefit leads to financial inclusion, which can initially underpin efforts to reduce inequality (Nanziri and Wamalwa 2021). There is a vast amount of empirical documentation on the context of the finance-growth relationship, financial inclusion, and inequality. Extant literature is largely centered on the premise that accessibility to finance increases the output growth rate (King and Levine 1993; Levine 2005; McKinnon 1973) and leads to a reduction of both poverty and income inequality (Beck, Demirgüç-Kunt, and Levine 2007; Burgess and Pande 2005; Clarke, Xu, and Zou 2006). In addition, among SMEs, there is a positive association between financial accessibility, firm growth, and efficient allocation of productive assets (Ayyagari, Demirgüç-Kunt, and Maksimovic 2011; Beck and Cull 2014).

Digital payment plays various important roles, not only for online transaction services but also for online investment platforms. Djakasaputra et al. (2021) find that the financial platform is widely held and is considered a solution for financial inclusion via banking products. Bech et al. (2018) contend that in the most developed countries, especially during the financial downturn, cash had been the preferred payment system. However, Ramya, Sivasakthi, and Nandhini (2017) state that cashless financial transactions are more transparent, scalable, and accountable. Taking advantage of the increased participation of people in economic activities, incorporated with transformative digital payment, will lead to a reduction in poverty where equitable economic growth is more feasible. Achieving this will require robust justification from academic work. However, in existing research, empirical discoveries on the response of financialization to income inequality are mixed. For example, a study by Demir et al. (2022), utilizing a sample from 140 countries (cross-country level), reveals that financial technology affects inequality directly and indirectly through financial inclusion. The study reveals that financial inclusion is an important network through which FinTech reduces income inequality. In contrast, the positive redistributive effect of financialization on income inequality could become negative due to its inability to reach the poor population (Haan and Sturm 2017; Jauch and Watzka 2016). Financialization and digital technology can widen the income disparity (Mohd Daud, Ahmad, and Ngah 2021). Additionally, Noh and Yoo (2000) find that the digital divide worsens income inequality. The digital divide could be seen from specific dimensions such as personal categorical differences and internet usage attitudes that would cause an uneven resource distribution in material access (Helsper 2012; Van Deursen and van Dijk 2019).

An important theoretical view in finance is that financial bodies and markets are critical catalysts in the efficient allocation of capital resources and symmetric information, and in other market imperfections. According to the Global Findex database, although financial inclusion has brought potential benefits in recent years, formal financial services remain inaccessible to 1.7 billion adults worldwide, and 760,000 of those with access still do not utilize them. The reasons for this often include the high cost, distance, and documentation requirements (Demirgüç-Kunt et al. 2018). Nevertheless, FinTech can still offer many foreseeable future benefits in addressing financial barriers by leveraging the increase in mobile technology penetration. FinTech brings possible advantages in fostering financial inclusion, and it has the greatest potential to enable the remaining unbanked to gain access to formal banking services, eventually achieving more equitable growth (Demirgüç-Kunt et al. 2018; GPF 2016). With its key role, FinTech could reduce income inequality, particularly in emerging economies. This belief is supported by Asongu and Le Roux (2017). Utilizing panel data from 49 Sub-Saharan countries from 2000 to 2012, they contend that mobile, internet, and broadband penetration has led to inclusive growth, as proxied by the inequality-adjusted human development index. Similarly, the use of mobile phones (for paying bills or sending/receiving money) only has a significant and negative impact on income inequality in upper-middle-income nations (Asongu and Nwachukwu 2018).

There is a significant breakthrough in developing economies, conditioned by the fact that many have a mobile phone, allowing these nations to jump directly to mobile payments. Indeed, mobile phones and the internet could go a long way toward helping to address some of the obstacles that are often found in unbanked adults, e.g., enabling access to reliable financial services, including digital finance (Demirgüç-Kunt et al. 2017). Therefore, based on those previous studies, the core objective of this work is to examine further the empirical findings of SMEs and digital payment in elevating economic equality in Southeast Asia. The conceptual framework that puts greater emphasis on the model of “imagining an inclusive economy” is delineated in Figure 1.

Figure 1: Conceptual Framework



Source: Authors compilations.

4. MATERIALS AND METHODS

This research employs the panel statistical approach and collects data on SMEs' contribution towards GDP, the total digital payment transaction volume, and economic inequality in eight Southeast Asian countries, namely Indonesia, Thailand, Myanmar, Lao PDR, Cambodia, Viet Nam, Malaysia, and the Philippines, from 2010 to 2021. Data are obtained from the World Bank and each country's statistics agency. Brunei Darussalam and Timor-Leste are excluded due to data unavailability. Also, the authors decided not to include Singapore in the observation due to differences in its economic structure compared to the other Southeast Asian countries. Eventually, this study obtained 96 country-year observations. A description of the variables is displayed in Table 2, in which economic inequality (*INEQUAL*) acts as the response variable, while SMEs' contribution (*SME*) and digital payment volume (*DPAY*) act as the predictor variables. We also incorporate variable controls such as real interest rate (*RIR*), financial development index (*FDI*), internet accessibility (*ACCESS*), and COVID-19 (*COVID19*).

Table 2: Description of Variables

Variable	Measurement
Dependent Variable:	
<i>INEQUAL</i>	Gini coefficient.
Independent Variables:	
<i>SME</i>	Percentage of SMEs' contribution to GDP.
<i>DPAY</i>	Digital payment transaction in US\$.
Control Variables:	
<i>RIR</i>	Bank lending rate minus inflation.
<i>FDI</i>	Financial development index.
<i>ACCESS</i>	Percentage of population who have access to Internet (% age 15+).
<i>COVID19</i>	Dummy variable, 1 if the year is 2020 or 2021, and 0 otherwise.

Note: This table describes the variables used in the study and their measurements.

Source: Author's compilations.

4.1 Measurement of Economic Inequality

Economic inequality refers to income disparities among individuals (Salazar 2022). The Gini index, or the Gini coefficient, is often used to assess the degree of income inequality or wealth disparity within a community (Salazar 2022). The Gini coefficient is the ratio of the area between the line of perfect equality and the observed Lorenz curve to the area between the line of perfect equality and the line of perfect inequality. If the area between the line of perfect equality and the Lorenz curve is A and the area under the Lorenz curve is B, the Gini coefficient is defined as $A/(A+B)$. The Gini coefficient is $G = 2A = 1-2B$, because $A+B = 0.5$. When $Y = L(X)$ is used to represent the Lorenz curve, integration can be used to get the value of B and:

$$G = 1 - 2 \int_0^1 L(X) dX.$$

The coefficient is a value between 0 and 1, where 0 represents perfect equality and 1 represents ideal inequality (World Bank 2023). A high-income and a low-income country can have the same Gini coefficient if the distribution of earnings within each is the same. However, COVID-19 is anticipated to worsen income inequality. The Gini coefficient rose by around 1.5 points in the five years after major diseases like Ebola and Zika, according to the World Bank. The COVID-19 pandemic caused the Gini coefficient to rise by 1.2 to 1.9 percentage points annually in 2020 and 2021 (Salazar 2022).

4.2 Empirical Models

This study uses a panel data regression model. Using panel data, the study can consider both time-invariant country-specific covariates and all factors shared across the whole period. The equation below presents an empirical model in this study, considering the effect of SMEs on economic inequality. Digital payment (*DPAY*), the second independent variable, is also incorporated to reduce economic inequality. These variables are then transformed into natural logarithm forms (Katircioglu, Gokmenoglu, and Eren 2018) and avoid the problems of dynamic properties in the data series (Paramati, Alam, and Chen 2017). Next, as there are a multitude of other factors driving inequality, this study adds three control variables. The following is the full equation:

$$\text{Ln } INEQUAL_{i,t} = \alpha + \beta_1 \text{Ln } SME_{i,t} + \beta_2 \text{Ln } DPAY_{i,t} + \beta_3 \text{CONTROL VARIABELS}_{i,t} + \varepsilon_{i,t}$$

5. EMPIRICAL RESULTS AND DISCUSSIONS

5.1 Descriptive Analysis

Table 3 presents an overview of the data. It shows the mean, median, maximum, and standard deviation for all variables used in the study. The data are then utilized to empirically explore the relationship between SMEs, digital payment, and economic inequality.

Table 3: Descriptive Analysis

	Mean	Median	Maximum	Minimum	Std. Dev.
Panel A: Dependent Variable					
Ln <i>INEQUAL</i>	0.578	0.580	0.667	0.487	0.047
Panel B: Independent Variables					
Ln <i>SME</i>	0.643	0.653	0.838	0.301	0.122
Ln <i>DPAY</i>	1.346	1.916	2.778	0.176	0.947
Panel C: Control Variables					
<i>RIR</i>	3.389	3.000	18.200	-21.500	4.603
<i>FDI</i>	-0.640	-0.650	-2.600	-9.200	0.216
<i>ACCESS</i>	68.625	71.500	86.000	47.000	12.813
<i>COVID19</i>	-0.833	-1.000	-1.000	0.000	-1.000

Source: Author's compilations.

5.2 Correlation Analysis

Table 4 presents the correlation matrix of our sample. A negative correlation is seen between Ln *SME*, Ln *DPAY*, *RIR*, *ACCESS*, *COVID19*, and *INEQUAL*, while FDI is positively correlated with *INEQUAL*.

Table 4: Correlation Matrix

Correlation Probability	<i>INEQUAL</i>	Ln <i>SME</i>	Ln <i>DPAY</i>	<i>RIR</i>	<i>FDI</i>	<i>ACCESS</i>	<i>COVID19</i>
<i>INEQUAL</i>	1.000 –						
Ln <i>SME</i>	–0.203** (0.035)	1.000 –					
Ln <i>DPAY</i>	–0.493*** (0.000)	–0.117** (0.022)	1.000 –				
<i>RIR</i>	–0.105** (0.027)	–0.118** (0.022)	0.217** (0.023)	1.000 –			
<i>FDI</i>	0.349*** (0.000)	–0.050* (0.060)	–0.584*** (0.000)	–0.294*** (0.002)	1.000 –		
<i>ACCESS</i>	–0.138** (0.015)	0.114** (0.023)	–0.628*** (0.000)	–0.141** (0.014)	0.655*** (0.000)	1.000 –	
<i>COVID19</i>	–0.118** (0.022)	0.175* (0.069)	0.160* (0.097)	0.061* (0.052)	0.039* (0.068)	–0.829 (0.100)	1.000 –

Note: ***, **, and * represent the significance level at *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$, respectively.

5.3 Residual Diagnostics: Hausman Test

The Hausman test is intended to compare between a random-effects model and a fixed-effect model. The fixed-effect model is the most appropriate one to use when H_0 is rejected or when the p -value is less than the significance level (0.05). The p -value of the Hausman test in our study is 0.006; as a result, H_0 is rejected, and the fixed-effect model outperforms the random-effect model.

Table 5: Hausman Test Result

Test Summary	Chi-Sq. Statistic	Chi-Sq. d.f.	Prob.
Cross section and period random	14.381	6	0.006

Source: Author's compilations.

5.4 Panel Data Analysis

This section details the statistical results to provide valuable insight into the determinant factors of inequality reduction among Southeast Asian nations. Table 6 reports the results of panel data analysis. The results reveal that *SME* has a significant and negative relationship with *INEQUAL* (–3.250, p 0.001 < 0.01). We conclude that SMEs actively contribute to reducing income disparity among individuals in Southeast Asia. The growth of SMEs represented by their contribution to GDP is directly proportionate to lowering the economic inequality.

Table 6: Panel Data Results

Dependent Variable: <i>INEQUAL</i>			
Variable	Coefficient	t-statistic	Prob.
Constant	0.790	19.905	0.000***
Ln <i>SME</i>	-0.106	-3.250	0.001***
Ln <i>DPAY</i>	-0.033	-6.892	0.000***
<i>RIR</i>	0.001	0.913	0.363
<i>FDI</i>	0.049	2.212	0.029**
<i>ACCESS</i>	-0.000	-2.487	0.014**
<i>COVID19</i>	0.007	0.751	0.454
Adjusted R-squared			0.428
Prob(F-statistic)			0.000
Number of countries: 8			
Number of observations: 96			

Note: ***, **, and * represent the significance level at $***p < 0.01$, $**p < 0.05$, $*p < 0.1$, respectively. Dependent variable: Economic inequality, measured as the Gini coefficient.

Source: Author's compilations.

This makes sense because SMEs are labor-intensive sectors employing large numbers of the workforce with generally invariable professional qualifications, which leads to a minimal salary gap among workers. The increase in the number of SMEs may be advantageous for the economy's viability and growth because these firms tend to be labor-intensive and are often found in rural urban regions. The labor intensity and geographic spread of these businesses could play a significant role in the equitable distribution of income. Long-term economic growth is supported by the SMEs' expansion since these businesses contribute to domestic market productivity and make efficient use of limited resources. Businesses that are strengthened create jobs and drive the economy forward. Employment and economic growth are generated by strengthened SMEs. A strong inverse association between small-scale business and the incidence of poverty was discovered in a number of works when they examined the relationship between small-scale business development and growth. Increased output from SMEs has been studied for its effect on reducing inequality. The study's findings support Beck, Demirgüç-Kunt, and Levine (2004), who state that small-business innovation and entrepreneurship contribute to improved economic growth and lower levels of poverty in developing nations. This finding also supports Hassaas (2017), who posits that SMEs are potential enablers in poverty alleviation and economic growth. Small-scale businesses foster entrepreneurship and increase competitiveness in the economy, which helps the entire country in terms of productivity growth, efficiency, and innovation. Further, to grow the economy and reduce inequality, a solid SMEs foundation is necessary. The importance of economic policy designed by policymakers should be pointed out, which should concentrate on creating formal financial markets to address financial challenges in small and medium sectors. The development of a strong SMEs would enable SMEs to benefit from the simplification of lending processes, enforcement of credit rights, and decreased credit costs. Offering an educated and technically proficient labor force would both speed up the expansion of SMEs and aid in the effort to reduce poverty.

DPAY exhibits a significant and negative relationship with *INEQUAL* as shown in Table 6 (-6.892 , $p\ 0.000 < 0.01$). This finding underscores the prevailing digital payment as a digital transformation to narrow the inequality gap within the economy. Pro-poor economic development is indicated by leveraging digital financial services explicitly resulting in equal income distribution. This finding supports Demir et al. (2022), who uncover the importance of financial technology in reducing income inequality. Notwithstanding, the term “inclusive digital financial services” is enjoyed by populations, especially among adults. Also, a narrow inequality, which might result from an increasing number of active internet users in digital financial activities who are highly engaged with compatible platforms, could enable individuals to generate income. Supportive empirical studies are found in GPF (2016) and Demirgüç-Kunt et al. (2018), who conclude that FinTech proxied by mobile financial services leads to financial inclusion and enables the achievement of more equitable growth. With its key role, FinTech can reduce income inequality, particularly in developing countries (Demirgüç-Kunt et al. 2018). Digital money circulating within the economy can increase SMEs’ impact in creating more equality in society. The results confirm that digital payments support small and medium-sized businesses’ efforts to eliminate inequality, showing that an inclusive economy promotes greater economic equality. Moreover, a cashless system increases the accountability, transparency, and scalability of financial transactions. Our conclusion, generally, is that digital finance is the key to recovering and transforming the economy. Severe inflation, economic contraction, and food scarcity have devastated the economy and required a breakthrough to approach the problem. Implementing digital finance services that expand people’s access to finance and alleviate the cost of digital transactions is the most applicable policy to overcome the economic turmoil. Providing convenience, user-friendliness, and reliability are vital features for developing digital payment to attract more users. Additionally, the digital finance system should be able to accommodate the different needs of different market segments. Some communities such as farmers, in particular, may need more access to online loans for working capital, while corporate individuals may need more access to vehicle installments.

The statistical results of control variables’ response to economic inequality are varied. In terms of *FDI*, since emerging countries have taken serious steps towards financial and economic development, research efforts aimed at understanding the effect of financial development on income distribution are important. The results of our study show that *FDI* has a significant and positive relationship with economic inequality (2.212 , $p\ 0.029 < 0.05$), emphasizing that *FDI* cannot reduce economic inequality in digital-payment-adopting countries. This is unlike much of the existing empirical evidence—for example, Bitterncourt (2006), Clarke, Xu, and Zou (2006), and Liang (2006), who state that financial development lessens income inequality, and Banerjee and Newman (1993) and Galor and Zeira (1993), who find there is reduced income inequality in developed financial markets. Similarly, Li, Squire, and Zou (1998) find that better-functioning financial markets have a significant association with reduced inequality. Our findings indicate that an inequality gap can be wide when financial development only really benefits rich and well-connected people. This will occur especially when weak institutional quality is found in society. In other words, the rich are more likely than the poor to have ability to offer collateral and repay a loan (Rajan and Zingales 2003). This indicates that the poor are still excluded and find it difficult, for example, to access loans even in an established financial market. Thus, the relevant inequality-narrowing policy should put forward the idea of developing a pro-“underserved population.” Recently, research by the World Bank (Beck et al. 2004) and Claessens and Perotti (2007) revealed that financial market development contributes not only to economic growth but also to poverty reduction. Understanding

the distributional impact of financial reforms would allow authorities to tailor better the content and sequencing of economic policy prescription in developing countries (Das and Mohapatra 2003). Policies' efforts should prioritize eliminating difficulties and establishing innovative financial products that have a direct impact on the low-income consumer and those who have been excluded. Consequently, digital technology would benefit unbanked people in delivering accessible financial products. This empirical finding calls for the government in Southeast Asia to bolster the development of purposeful financial systems that can simultaneously enhance entrepreneurship and educational opportunities, aligning income with individual talents, and improve the demand for labor through a more efficient capital allocation.

Being able to access the internet appears to be the key factor in connecting people to digital financial services and contributes actively to reducing income disparity (-2.487 , $p0.014 < 0.05$). Indeed, sophisticated digital financial features without established technology infrastructure such as an internet connection will continue to exclude people from enjoying financial services. Having access to the Internet, as mentioned by Demirgüç-Kunt et al. (2017), could help in addressing barriers that prevent unbanked adults from accessing financial services. Stable Internet accessibility can make people resilient, even during the COVID-19 pandemic, which has imposed devastating economic pressures. Digital financial services through internet accessibility might well benefit people in urban areas, but not in rural ones (often found in Southeast Asia), therefore financialization and digital technology development should now put greater emphasis on "underserved populations" rather than broad-based development to navigate the degree of the digital divide problem in society. Most notably, in terms of human capital, improving digital financial literacy for people is another important agenda for raising awareness in using digitally focused people for potential users. Meanwhile, more collaborations between public and private funding can achieve a more sizeable impact on sustainable digital inclusion. A funding strategy that incorporates a public-private funding mix might be more long term for the country's efforts to promote digital inclusion. A social entrepreneurial system, in which the telecommunications companies with the largest market shares are expected to finance national digitalization plans, may be the ideal win-win scenario for all parties. This is a mutually beneficial scheme where companies gain profit from commercializing users' data and the users can gain profit from the digital inclusion facilities provided by the companies rather than heavily taxing the companies. Furthermore, financial intermediaries should also provide efficiency in terms of allocating financial resources to finance households' productive activities, while maintaining local technological capabilities, thereby alleviating economic inequality. The development of an efficient financial system should thus accentuate a pro-poor development strategy (Law and Tan 2009).

5.5 Robustness Check

Table 7 presents the results of a robustness check. This section provides measurement of economic inequality by considering the Palma ratio. The Palma ratio is referred to as a specification within a family of inequality measures or inter-decile ratios such as the Gini share of the poorest 20% of the population over the richest 20% (or its inverse) (Cobham, Schlögl, and Sumner 2016). Changes in income or consumption inequality are exclusively because of changes in the share between the richest and poorest, leaving unchanged the income share of the "middle" (Palma 2006). The findings for our main variables such as *SME* and *DPAY* remain unchanged.

Table 7: Palma Ratio for Robustness Check

Variable	Coefficient	t-Statistic	Prob.
Constant	2.728	2.970	0.003***
Ln <i>SME</i>	-1.436	-1.894	0.061*
Ln <i>DPAY</i>	-0.516	-4.598	0.000***
<i>RIR</i>	-0.065	-3.231	0.001***
<i>FDI</i>	-1.007	-1.929	0.056*
<i>ACCESS</i>	0.026	3.152	0.002***
<i>COVID19</i>	-0.479	-1.973	0.051*
Adjusted R-squared			0.275
Prob(F-statistic)			0.000
Number of countries: 8			
Number of observations: 96			

Note: ***, **, and * represent the significance level at *** $p < 0.01$, ** $p < 0.05$, and * $p < 0.1$, respectively. Dependent variable: Economic inequality, measured as the Palma ratio.

Source: Author's compilations.

6. CONCLUDING REMARKS, RECOMMENDATIONS, AND SUGGESTIONS FOR FUTURE RESEARCH

Central to this study are small and medium enterprises (SMEs) and mainstreaming digital features that transform access to finance. Using a panel data approach to examine the relationship between SMEs' contribution to the gross domestic product (GDP), digital payment, and the existing economic inequality measured in terms of the Gini coefficient, this study highlights the significant and negative relationship between SMEs and economic inequality, concluding that SMEs reduce inequality among Southeast Asian countries. In terms of the digital payment variable, the findings show that digital payment has also contributed to reducing inequality. Notably, the beneficial impact of digital finance is potentially recovering and transforming the economy.

This study suggests that a solid SME foundation is necessary. Thus, economic policymakers should concentrate on creating formal financial markets. The development of a strong SME sector would be achieved, for example, from the simplification of lending processes, enforcement of credit rights, and a decrease in credit costs. In addition, offering an educated and technically proficient labor force would both speed up the expansion of SMEs and aid in the effort to reduce poverty. Policy efforts should prioritize eliminating difficulties and establishing innovative financial products that have a direct impact on the low-income consumer and those who have been excluded. Governments in Southeast Asia also need to take various steps in bolstering the development of purposeful financial systems that can simultaneously enhance entrepreneurship and educational opportunities, aligning income with individual talents, and improve the demand for labor through a more efficient capital allocation. The need for an overall, pro-poor development strategy through efficient cross-border financial development should thus be emphasized.

We believe that there is considerable need for further comprehensive studies that encompass more countries in Asia or in the world, which would present more representative findings. Future researchers should also expand the horizon by considering the social factors that affect individuals' decisions to use digital payment systems or examining the widespread digital payment adopted by SMEs in the effort to achieve reduced inequality, particularly over the long term, which would enhance well-being for all.

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