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Analysis of the Impact of Globalization and Digitalization on Welfare in ASEAN and BRICS Countries

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ABSTRACT: This study investigates the multifaceted impacts of two global megatrends—globalization and digitalization—on public welfare in the ASEAN and BRICS nations from 2007 to 2024. Amid the prevailing narrative that links both phenomena to economic progress, this thesis critically analyses the influence of proxy variables for globalization (trade openness and foreign capital inflows) and digitalization (internet penetration and social media usage), alongside crucial domestic factors such as corruption and entrepreneurship, on three primary welfare indicators: per capita income, unemployment rate, and the poverty level. The principal objective of this research is to deliver nuanced empirical evidence on how the interplay of external forces and internal conditions shapes the welfare landscape in two of the world's most dynamic economic blocs. Employing a quantitative approach through panel data regression analysis, the findings reveal complex and non- uniform relationships. The analysis indicates that trade openness and internet penetration significantly contribute to a reduction in the unemployment rate. Conversely, social media usage demonstrates a negative correlation with per capita income and a positive association with rising poverty, suggesting potential counter-productive impacts and the promotion of consumptive behaviours. Furthermore, domestic governance factors, particularly corruption, are proven to have a significant influence on impeding income growth and exacerbating employment conditions. These findings affirm that the benefits of globalization and digitalization are not automatic but are heavily contingent upon the quality of domestic institutions and policies capable of optimizing opportunities and mitigating emergent risks.

Keywords: Globalization, Digitalization, Welfare, ASEAN, BRICS, Per Capita Income, Unemployment, Poverty, Corruption, Panel Data.

INTRODUCTION

Within the megatrend canvas shaping the 21st-century landscape, globalization and digitalization have emerged as two transformative forces reshaping the world's economic, social, and political architecture at unprecedented speed (Alfarizi & Heryadi, 2024; Damanik et al., 2025). The dynamic interaction between these phenomena not only redefines geographical boundaries and business

models but also profoundly affects welfare prospects for billions worldwide. This research seeks to systematically examine the multifaceted impact of the convergence between globalization and digitalization on welfare indicators across two major economic blocs with distinct dynamics and strategic significance: the ASEAN countries and the BRICS nations (Brazil, Russia, India, China, and South Africa) (Audi et al., 2025; Nurmuthasya, 2025).

Over the past few decades, the global economy has undergone fundamental restructuring. Globalization, characterized by intensified international trade, increased Foreign Direct Investment (FDI), and cross-border mobility of labor and technology, has acted as a catalyst for growth and development (Alkharafi & Alsabah, 2025; Limbong et al., 2024). However, as various studies suggest, globalization is not monolithic—it brings both opportunities for efficiency, productivity, and access, as well as challenges such as income inequality, environmental degradation, and cultural homogenization that may erode local identities (Amin, 2024; Metulini et al., 2017; Rehal, 2024).

In parallel, digitalization has swept through all sectors of life—from business and management to social and policy spheres (Pomaza-Ponomarenko et al., 2020). This transformation, marked by widespread internet and social media penetration, has revolutionized how people interact, trade, and access information (Brynjolfsson & McAfee, 2014; Dutton, 2004; Van Deursen & Van Dijk, 2019). The rise of the digital economy has reshaped conventional economic foundations, transforming markets, production, and competitive advantage (Koch & Windsperger, 2017; Manyika et al., 2016). While digitalization offers immense potential to boost innovation, productivity, and access to essential services such as education and healthcare, it also raises concerns over the digital divide, cybersecurity, and labor market displacement caused by automation (Bessen, 2018; World Bank, 2019).

Within their diverse geographic and demographic contexts, ASEAN and BRICS countries provide a compelling empirical setting to examine the impact of globalization and digitalization on welfare (Audi et al., 2025; Terdpaopong et al., 2025). The ASEAN region, with over 671 million people, has achieved notable economic growth yet continues to face income disparity and poverty challenges (Amar & Pratama, 2020; Syadullah et al., 2019). Meanwhile, the BRICS nations represent rising global economic powers, each following distinct growth trajectories while adapting to geopolitical and digital transformations (O'neill, 2001).

Although existing literature has extensively explored globalization and digitalization separately—mostly in the context of developed economies—there remains a significant gap in integrated analyses focusing on their combined effects on welfare in emerging regions like ASEAN and BRICS. This study addresses that gap by examining how globalization proxies (e.g., FDI, total trade) and digitalization indicators (e.g., internet penetration, social media use) influence welfare measures such as per capita income, unemployment, and poverty rates.

The central research question asks whether globalization and digitalization have positive or negative impacts on welfare in ASEAN and BRICS, and how their effects—alongside non-globalization factors—vary across countries. By exploring these dynamics, the study contributes to academic discourse in global economics, macroeconomics, and development studies, while

offering policy insights for promoting inclusive and sustainable growth in the globalized digital era.

The main reason the author chose the topic "Analysis of the Impact of Globalization and Digitalization on Welfare in ASEAN and BRICS Countries" is the persistent inequality among nations, despite the vast opportunities available to enhance societal welfare in Southeast Asia and BRICS member states.

Globalization refers to the process of economic, social, and cultural integration driven by technological progress and trade liberalization. Characterized by increased international trade, investment, and resource mobility, globalization has created significant opportunities for ASEAN countries (such as Singapore, Malaysia, Indonesia, and Thailand) and BRICS members (Brazil, Russia, India, China, and South Africa), fostering economic growth through enhanced trade and investment flows.

According to academic sources, globalization represents an ongoing process of international integration through the exchange of institutions, products, ideas, and cultures. It encompasses economic, political, and social dimensions, enabling the free movement of goods, capital, labor, and technology across borders. While globalization has driven substantial economic growth and innovation, it also presents challenges, including income inequality, environmental degradation, and cultural homogenization (Ashenfelter et al., 2018).

This study also examines digitalization, the digital economy, and information technology, which have become key drivers of global economic transformation. The rapid advancement of information technology has reshaped traditional economic structures, altering fundamental concepts such as markets, production, margins, and competitive advantage.

The widespread adoption of the Internet in the 1990s marked the beginning of the digital era, fueling the growth of the digital economy. Between 2000 and 2010, information and communication technology (ICT) significantly accelerated economic change, with the digital economy expanding by 15–25% annually. By 2015, revenues from digital applications had reached approximately $100 billion.

Digitalization, as an inevitable outcome of human progress, enables individuals and societies to control the flow of information, access knowledge, and create new business and lifestyle opportunities. It is commonly measured through internet penetration rates, the use of digital devices (computers, tablets, smartphones), and e-commerce transaction levels, among other indicators.

Digitalization, as a transformative process involving the integration of digital technologies across various aspects of life, has revolutionized how businesses operate and how individuals interact with markets. It refers to the transformation of business processes and social interactions through digital technology, which now dominates how people and organizations function in the modern era.

More specifically, digitalization entails converting information into digital formats that can be easily accessed, stored, and processed by computers. This process has reshaped numerous sectors,

including business, healthcare, education, and communication. In academia, digitalization has significantly changed how knowledge is accessed, shared, and utilized. It has made education more accessible and flexible, allowing learners worldwide to reach high-quality resources and engage with peers and instructors regardless of location.

Furthermore, digitalization has fostered the growth of online academic platforms, such as e-learning systems, open educational resources, and digital archives, which have expanded the reach of academic knowledge and made it more widely available (Chakraborty et al., 2024).

Income

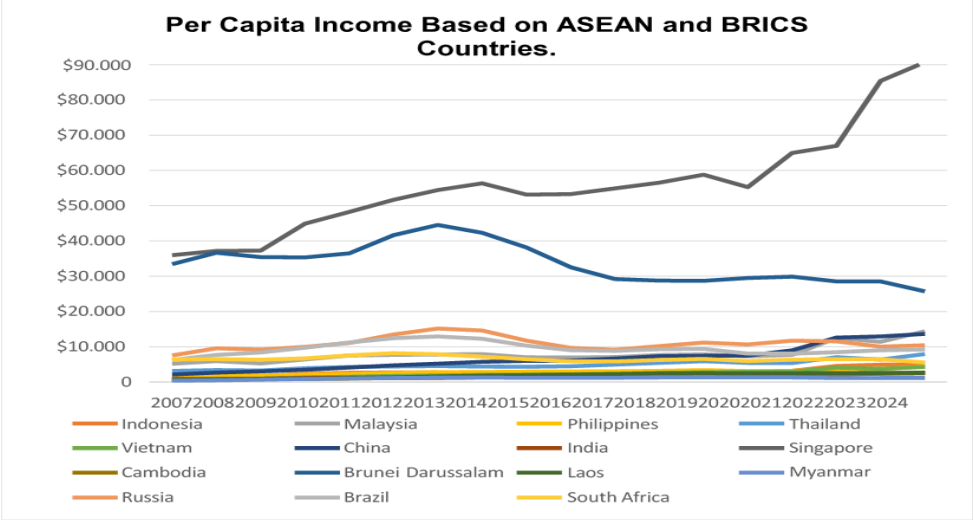

Figure 1. Income
Source: Data from the worldbank.org/ database and processed by the author.

Figure 1. illustrates the trend of GDP per capita across ASEAN and BRICS countries from 2007 to 2024, based on data from the World Development Report 2025 (World Bank). The graph highlights the dynamics of economic growth and enables comparison of income levels across nations.

Overall, the data show significant economic variation among countries. Singapore consistently recorded the highest income, rising from $36,010 in 2007 to $90,689 in 2024, with a sharp post-pandemic recovery after 2021. In contrast, Brunei Darussalam's per capita income declined from a peak of $44,580 (2014) to $25,725 (2024), likely due to fluctuations in global oil prices.

Indonesia showed steady growth from $1,305 in 2007 to $4,960 in 2024, while Malaysia, Thailand, and Vietnam also experienced notable increases—especially Vietnam, whose income rose from $716 to $4,318, indicating rapid industrialization. The Philippines followed a similar positive trend.

Outside ASEAN, China demonstrated remarkable progress, increasing from $2,168 to $13,659, surpassing Malaysia and approaching South Korea's level—reflecting successful economic reforms. Meanwhile, Laos, Myanmar, and Cambodia remained in the low-income group, and large non-ASEAN economies such as Russia, Brazil, and South Africa showed less stable growth patterns.

Unemployment

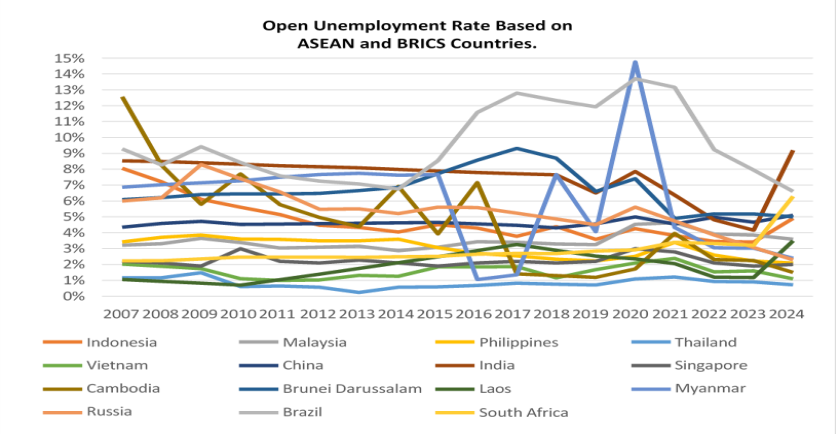

Figure 2. Unemployment
Source: Data from the worldbank.org/ database and processed by the author.

Figure 2 illustrates the trend of open unemployment rates in ASEAN and BRICS countries from 2007 to 2024, based on data from the World Development Report 2025 (World Bank). The chart highlights labor market dynamics and employment condition comparisons among countries.

Overall, Thailand and Vietnam maintained the lowest and most stable unemployment rates below 2%. Malaysia also showed stability between 2.8%–4.6%, with a temporary rise during the 2020 pandemic before declining again in 2024. The Philippines and Singapore experienced consistent downward trends, while Indonesia successfully reduced unemployment from 8.06% (2007) to 3.59% (2019), rising slightly to 4.91% in 2024. Countries like Cambodia, Laos, Myanmar, and Brunei Darussalam faced sharper fluctuations.

Outside ASEAN, India recorded the highest unemployment rate (9.20% in 2024), while China maintained rates around 4%–5%. Russia and Brazil showed notable improvements, declining to 2.30% and 6.60% respectively in 2024. Overall, the trend indicates increasing employment stability across most countries despite the temporary impact of the pandemic.

Poverty

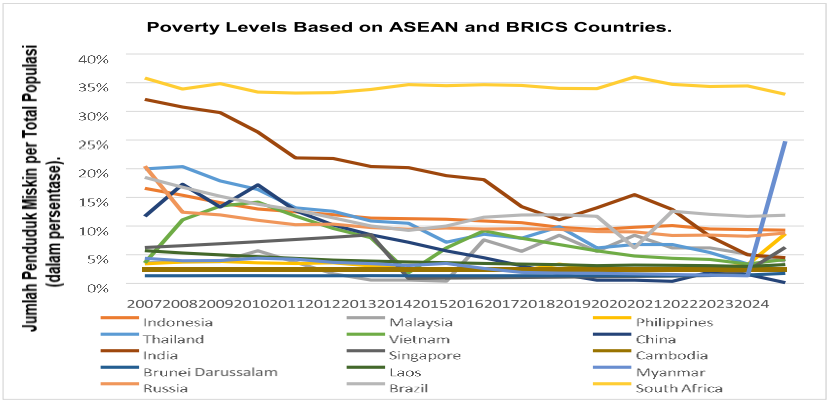

Figure 3. Poverty
Source: Data from the worldbank.org/ database and processed by the author.

Figure 3 shows the trend of poverty rates in ASEAN and BRICS countries from 2007 to 2024, based on World Bank data. The chart indicates a general decline in poverty across most countries, though with significant variation.

In ASEAN, Thailand recorded the sharpest drop from 20% (2007) to 2.4% (2024), followed by Indonesia from 16.6% to 9.3%. The Philippines saw an increase from 3.43% to 8.67%, reflecting economic pressure. Malaysia and Singapore experienced temporary fluctuations during the pandemic, while Brunei remained below 2%. Myanmar had the highest rate in ASEAN, surging to 24.8% in 2024.

Among BRICS, China achieved a dramatic reduction from 11.7% to 0.16%, and India from 32.1% to 4.5%, despite a brief pandemic setback. Russia's poverty rate declined from 20.48% to 8.8%, while Brazil stagnated around 9–12%. South Africa remained the highest, above 33%. Overall, global poverty reduction has progressed, though large disparities persist among low-income nations.

Trade Openness

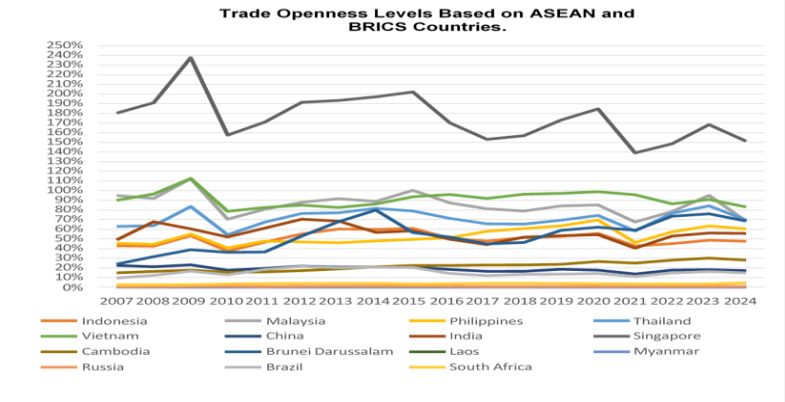

Figure 4. Trade Openness
Source: Data from the worldbank.org/ database and processed by the author.

Figure 4 illustrates trade openness—measured by the ratio of exports and imports to GDP—based on World Bank (2025) data for 2007–2024. The chart highlights the extent of global economic integration among ASEAN and BRICS countries.

ASEAN countries generally show high trade openness. Singapore leads with a ratio exceeding 200%, reflecting strong dependence on international trade. Malaysia, Thailand, and Vietnam also demonstrate high openness, with Vietnam rising sharply to nearly 100% in 2020. Indonesia remains lower (40–60%), indicating a domestically oriented economy, while the Philippines and Cambodia show gradual improvement.

In contrast, BRICS countries exhibit lower openness. China and India maintain moderate ratios (20–55%) due to large domestic markets, while Russia, Brazil, and South Africa remain below 5%, signaling limited global trade engagement. Overall, ASEAN economies are significantly more open than BRICS, reflecting differing trade structures and orientations.

Financial Market Openness

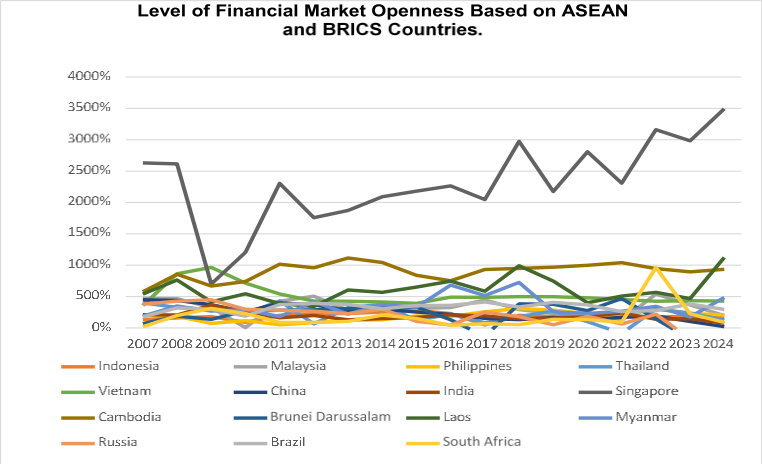

Figure 5. Financial Market Openness
Source: Data from the worldbank.org/ database and processed by the author.

Figure 5 presents the trend of Foreign Direct Investment (FDI) inflows as a share of GDP in ASEAN and BRICS countries from 2007 to 2024, based on World Bank (2025) data. This indicator reflects financial market openness and foreign investor confidence.

Singapore consistently records the highest and most stable FDI, exceeding USD 20 billion annually, reinforcing its role as a global investment hub. Vietnam shows strong and steady growth, driven by industrial relocation from China. Malaysia and Indonesia experience moderate fluctuations but remain attractive due to industrial expansion and economic stability, while Thailand's FDI varies with domestic political and economic conditions.

Among BRICS, China and India receive moderate FDI inflows reflecting large domestic markets. Laos shows a sharp rise to USD 11.24 billion in 2024, mainly from resource sectors. Russia and Brazil face strong volatility—with Russia turning negative in 2023 due to sanctions—while South Africa's inflows rose significantly to USD 9.66 billion in 2022. Overall, ASEAN markets appear more dynamic and stable than BRICS, underscoring Southeast Asia's growing investment appeal.

Corruption

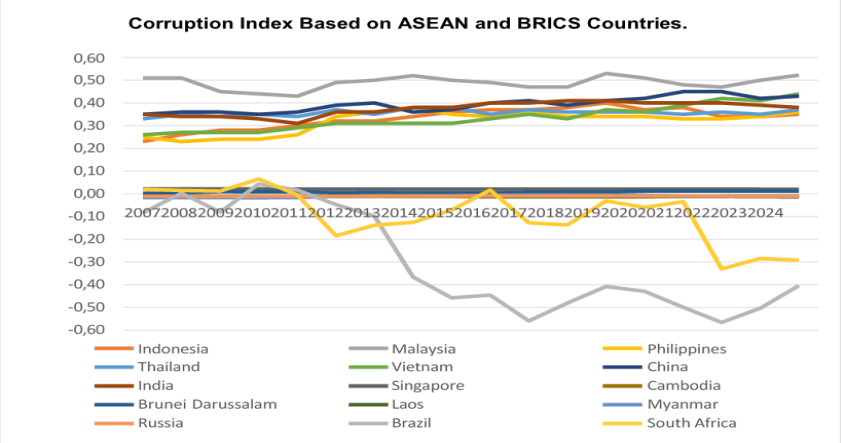

Figure 6. Corruption Index
Source: Data from the www.transparency.org database and processed by the author.

Figure 6 illustrates the trend of the Corruption Perception Index (CPI) from 2007 to 2024, based on data from Transparency International. The index ranges from 0 (highly corrupt) to 100 (very clean), reflecting governance quality and public trust.

Indonesia's score improved from 23% (2007) to 35% (2024), indicating slight progress but persistent corruption. Malaysia and the Philippines show similar patterns (40–50%), while Vietnam, Thailand, and India face rising corruption levels despite economic growth.

Singapore and Brunei Darussalam record the lowest corruption rates (below 2%), reflecting transparent and efficient governance. In contrast, Cambodia, Laos, and Myanmar remain among the most corrupt, showing weak institutional oversight.

Among BRICS, China's score rose moderately (35% → 43%), while Brazil, Russia, and South Africa continue to struggle with severe corruption, eroding public governance and investor confidence. Overall, corruption remains a major challenge for ASEAN and BRICS countries in achieving transparent and sustainable development.

Entrepreneurship

Figure 7 illustrates the entrepreneurship rate, calculated as the ratio of entrepreneurs to the labor force (×100%), based on data from the World Development Index 2025 (World Bank) and ILO model estimates. This indicator reflects a country's economic dynamism, innovation, and self-reliance.

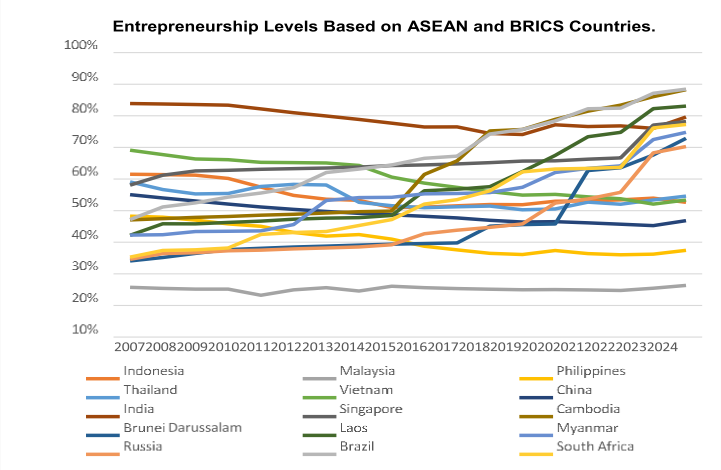

Figure 7. Entrepreneurship

Source: Data from the worldbank.org/ database and processed by the author.

The chart shows that Indonesia's entrepreneurship rate remains relatively stable, slightly declining from 61.55% (2007) to 52.67% (2024), indicating that over half of its workforce is engaged in entrepreneurial activity. Compared to Malaysia (around 25%) and the Philippines (down from 48.29% to 37.46%), Indonesia's rate is much higher.

India and Vietnam maintain the highest levels, with India peaking at 83.96% in 2007. Singapore shows a sharp rise from 58.1% to 78.2%, likely due to strong startup and tech innovation support.

Meanwhile, Cambodia, Laos, and Myanmar display rapid growth in entrepreneurship—Cambodia rising from 47.10% to 88.30%—reflecting structural shifts toward informal and small-scale enterprises amid limited formal job opportunities.

Internet Penetration

Figure 8 presents the trend of internet penetration—measured as the percentage of individuals with internet access relative to total population—from 2007 to 2024, based on World Bank (World Development Index) and ITU data. Internet penetration serves as a key indicator of social globalization and digital connectivity across nations.

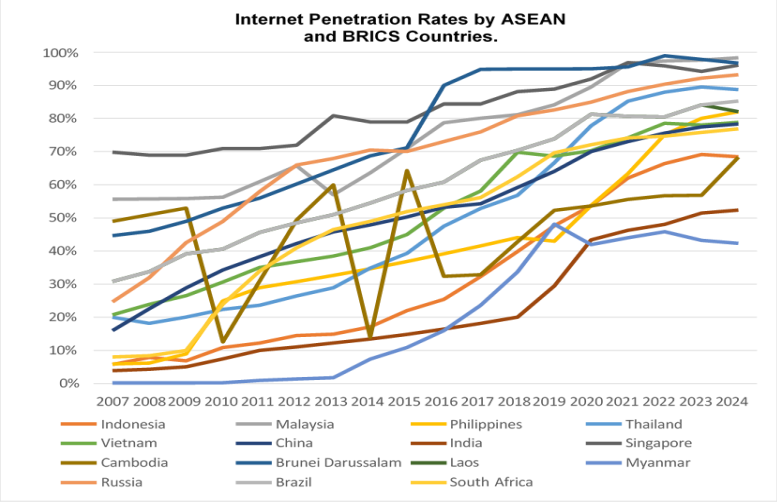

Figure 8. Internet Penetration

Source: Data from the worldbank.org/ database and processed by the author.

The chart shows a strong upward trend in nearly all observed countries. ASEAN leaders such as Singapore, Malaysia, and Brunei have maintained penetration rates above 95% since 2020, while Thailand and Vietnam rose from around 20% to nearly 90% by 2024. Indonesia and the Philippines grew sharply from about 5–6% in 2007 to over 80% in 2024. Cambodia, Laos, and Myanmar progressed more slowly, though still improved significantly.

Among non-ASEAN countries, Russia, Brazil, and China show high and steady internet adoption—Russia reaching 93.27% and Brazil 85.29% in 2024. China and India also expanded rapidly, from 16% and 3.95% (2007) to over 78% and 52% (2024). South Africa remains lower at 76.9%.

Overall, the data highlight rapid digital growth and narrowing digital divides, though disparities persist between advanced and developing ASEAN nations, reflecting differences in digital infrastructure and policy readiness.

Social Media Users

Figure 9 illustrates the trend of social media usage—measured as the percentage of the population active on social media platforms—from 2007 to 2024, based on data from DataReportal and We

Are Social & Meltwater. This indicator reflects the extent of digital connectivity and the role of social media in shaping global social interaction and communication patterns.

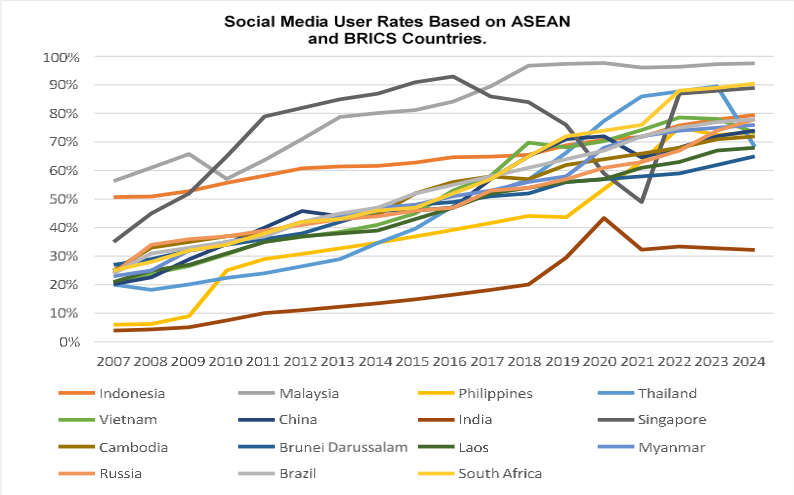

Figure 9. Social Media Users

Source: Data from the datareportal.com database and processed by the author.

The chart shows a significant rise in social media penetration across all countries. In ASEAN, Indonesia increased from 50.7% (2007) to 79.5% (2024), Malaysia reached the highest at 97.6%, and the Philippines surged from 5.97% to 73.4%. Thailand and Vietnam followed similar upward trends, while Singapore maintained stable growth from 35% to 89%. Cambodia, Laos, Brunei, and Myanmar showed slower but steady increases, with Myanmar reaching 76% in 2024.

Non-ASEAN countries such as Russia, Brazil, and South Africa also experienced strong growth—each rising from about 24–25% in 2007 to around 78–90% in 2024. Overall, ASEAN nations show comparable or even faster social media adoption than larger economies like China and India, highlighting how digital connectivity and cultural shifts have accelerated social globalization in both emerging and developed nations.

This study aims to analyze the impact of globalization and digitalization on the well-being of ASEAN and BRICS countries. It seeks to examine how these two factors influence welfare levels, identify other possible determinants affecting societal well-being, and assess both the positive and negative effects of globalization and digitalization on social and economic development within these regions.

Literature Review

Globalization is widely defined as the intensification of cross-border interconnectedness across economic, political, and social dimensions. Technological advances and policy liberalization have accelerated trade flows, foreign investment, and cultural exchange, reshaping countries' welfare prospects (Jotia & Ntheetsang, 2011). Economic globalization—through trade openness and capital mobility—affects income levels, employment creation, and poverty reduction, while also exposing countries to global market volatility.

Non-globalization domestic factors also play a significant role in shaping welfare. Entrepreneurship contributes to job creation, innovation, and economic dynamism, thus promoting income growth and poverty alleviation. Public-sector entrepreneurship, in particular, fosters innovation and proactive behavior that enhances public service delivery (Demircioglu & Chowdhury, 2021). Broader institutional conditions, including corruption levels and governance quality, further determine how effectively countries translate economic opportunities into improved welfare outcomes.

Digitalization represents another key driver of socioeconomic transformation. Internet penetration and social media usage influence economic participation, access to information, and productivity. The growth of digital technologies enables financial inclusion, entrepreneurial activities, and market expansion, but also requires supportive infrastructure and policies to ensure equitable distribution of benefits.

Welfare, as conceptualized in social policy scholarship, encompasses financial, material, and social support provided to individuals and households in need. Welfare regimes vary across contexts: liberal regimes emphasize limited government intervention and targeted benefits (Marshall & Bottomore, 1950), while social-democratic regimes emphasize universal rights and comprehensive protection systems (Esping-Andersen, 1990). National welfare outcomes therefore depend on the interaction between globalization pressures, digital transformation, and domestic institutional capacities.

METHOD

This study employs a causal explanatory design, aiming to identify how one variable influences another. Using a quantitative approach, the research analyzes numerical data through statistical methods to examine the effects of globalization, digitalization, and non-globalization factors on welfare in ASEAN and BRICS countries. Globalization is divided into three dimensions, digitalization into two, and non-globalization factors into three, while welfare is measured through income, poverty, and unemployment indicators.

Operational variables define how each concept is measured based on theoretical understanding, ensuring clarity and consistency in data collection and analysis. This study includes two main variable groups: dependent and independent variables. The dependent variables consist of income per capita, open unemployment rate, and poverty rate, each measured on a ratio scale. The independent variables include globalization (measured through trade openness and foreign direct investment), non-globalization factors (corruption level and entrepreneurship rate), and digitalization (internet penetration and social media usage), all expressed as percentages or ratio-based indicators.

This study uses secondary data obtained from existing sources such as reports, prior research, and official publications. The data include indicators of economic, social, and political globalization, social media usage, online trade volume, income per capita, unemployment rate, and poverty rate. All data were collected from reliable sources including the World Bank, Data Reportal,

Transparency International, and the Human Development Report to ensure accuracy and relevance in analyzing the impact of globalization and digitalization on welfare.

The population in this study consists of countries within the ASEAN and BRICS regions. Due to the large population size, a representative sample was selected, including 10 ASEAN countries (Indonesia, Malaysia, the Philippines, Thailand, Vietnam, Singapore, Cambodia, Brunei Darussalam, Laos, and Myanmar) and 5 BRICS countries (Brazil, Russia, India, China, and South Africa). This sampling allows for comprehensive analysis of globalization and digitalization impacts across diverse economic contexts.

This study uses the documentation method to collect secondary data from credible published sources. Relevant information related to the research variables was obtained from official databases such as the World Bank, Data Reportal, Transparency International, and the Human Development Report, ensuring the accuracy and reliability of the data used for analysis.

This study employs panel data regression analysis using STATA, combining cross-sectional data (ASEAN and BRICS countries) and time-series data (2007–2024). Descriptive analysis is first conducted to examine variable characteristics. Three estimation models—Common Effect (CEM), Fixed Effect (FEM), and Random Effect (REM)—are tested using the Chow, Hausman, and Lagrange Multiplier tests to determine the best fit model. The analysis then applies hypothesis testing (t-test and F-test) to assess the individual and simultaneous effects of independent variables (globalization, non-globalization factors, and digitalization) on welfare indicators (income, unemployment, and poverty). The coefficient of determination (R^2) is also used to evaluate the explanatory power of the model.

RESULT AND DISCUSSION

Descriptive Statistical Analysis

This study uses secondary data from 15 ASEAN and BRICS countries over an 18-year period (2007–2024), totaling 270 observations. Descriptive statistical analysis was conducted to provide an overview of the dataset used in the research.

Table 1. Descriptive Statistics Results

Descriptive Statistics						
		N	**Minimum**	**Maximum**	**Mean**	**Std. Deviation**
Y1	Income	270	5.886	11.415	8.468	1.168
Y2	Unemployment	270	0.003	0.148	0.043	0.028
Y3	Poverty	269	0.002	0.360	0.089	0.089
X1	Trade Openness	270	0.000	2.378	0.465	0.470
X2	Foreign Inflows	270	-1.756	34.949	4.641	5.754
X3	Corruption	270	-0.566	0.530	0.146	0.236
X4	Entrepreneurship	270	0.232	63.100	0.774	3.810
X5	Internet Penetration	270	0.002	0.990	0.525	0.266
X6	Social Media	270	0.040	0.977	0.521	0.218

Source: Stata output, secondary data processed 2025.

1. Income (Y1)
   The income variable (Y1) shows a maximum value of 11,415, a minimum of 5,886, and an average of 8,468 with a standard deviation of 1.168, indicating homogeneous data and relatively similar income levels across countries during the observation period.
2. Unemployment (Y2)
   The unemployment variable (Y2) ranges from 0.003 to 0.148, with a mean of 0.043 and a standard deviation of 0.028, indicating homogeneous data and relatively similar unemployment levels across ASEAN and BRICS countries.
3. Poverty (Y3)
   The poverty variable (Y3) ranges from 0.002 to 0.360, with a mean and standard deviation of 0.089, indicating high variation and significant disparities in poverty levels across countries.
4. Trade Openness (X1)
   As illustrated in Figure 3, woven fabric crafts represent a key element of culture-based tourism. However, these local products are not yet fully integrated into Kendari's tourist destinations, highlighting the need for stronger synergy between tourism promotion and local wisdom management to align with national and regional tourism goals.
5. Foreign Inflow Funds (X2)
   Trade openness (X1) ranges from 0.0000000776 to 2.378, with a mean of 0.465 and standard deviation of 0.470, indicating moderate variation and differing levels of global trade integration across countries.
6. Corruption Index (X3)
   The corruption index (X3) ranges from -0.566 to 0.530, with a mean of 0.146 and standard deviation of 0.236, indicating high variability in corruption levels across countries.
7. Entrepreneurship (X4)
   Entrepreneurship (X4) ranges from 0.232 to 63.100, with a mean of 0.774 and standard deviation of 3.810, indicating high heterogeneity in entrepreneurial activity across ASEAN and BRICS countries.
8. Internet Penetration (X5)
   Internet penetration (X5) ranges from 0.002 to 0.990, with a mean of 0.525 and standard deviation of 0.266, indicating homogeneous patterns of internet access across most countries.
9. Social Media (X6)
   Social media use (X6) ranges from 0.040 to 0.977, with a mean of 0.521 and standard deviation of 0.218, indicating homogeneous and fairly even social media adoption across ASEAN and BRICS countries.

Multicollinearity Test

Multicollinearity testing was conducted using a correlation matrix among independent variables. High correlations indicate potential multicollinearity, which can distort regression estimates and reduce accuracy. Therefore, this test serves as an initial diagnostic to identify overly correlated variables in the model.

Table 2. Multicollinearity Test Results

	X1	X2	X3	X4	X5	X6
X1	1,000					
X2	0,592	1,000				
X3	0,343	-0,208	1,000			
X4	0,164	0,205	-0,045	1,000		
X5	0,260	0,262	-0,159	0,041	1,000	
X6	0,258	0,246	-0,026	0,073	**0,735**	1,000

Source: Stata output, secondary data processed 2025.

The correlation analysis shows a high coefficient between X5 and X6 (0.735), indicating potential multicollinearity that could affect model stability. To address this, differentiation was applied to these variables, followed by a re-correlation test of all independent variables.

Table 3. Results of Multicollinearity Test After Differentiation

	X1	X2	X3	X4	X5	X6
X1	1.000					
X2	0.581	1.000				
X3	0.343	-0.213	1.000			
X4	0.168	0.212	-0.046	1.000		
X5	-0.046	-0.076	0.039	-0.033	1.000	
X6	-0.013	0.031	-0.059	0.151	0.116	1,000

Source: Stata output, secondary data processed 2025.

The re-test shows all correlation coefficients are below 0.60, indicating no multicollinearity after differentiation, and all independent variables are valid for regression analysis.

Heteroscedasticity Test

The heteroskedasticity test, conducted using the Breusch-Pagan/Cook-Weisberg method in Stata, aims to check whether residuals have constant variance across observations.

Table 4. Heteroscedasticity Test Results

Model	Chi2	Prob > Chi2	Information
Equation 1	0.98	0.3221	There is no heteroscedasticity in equation 1
Equation 2	23.96	0.0000	There is heteroscedasticity in equation 2
Equation 3	37.55	0.0000	There is heteroscedasticity in equation 3

Source: Stata output, secondary data processed 2025

The results show heteroskedasticity in equations 2 and 3. To address this, clustered standard errors were applied, providing robust estimates while maintaining consistent coefficients despite heteroskedasticity.

Panel Data Regression

Panel regression combines cross-sectional and time-series data to enhance variability and analysis accuracy. The best estimation model is selected using Chow, Hausman, and Lagrange Multiplier tests to ensure optimal fit.

Table 5. Selection of the Best Model

Equality	Testing	P-value	Testing Decision	Selected Model
Equation I	Chow Test	0,0000	Selected FEM models	FEM
	Hausman test	0,0309	Selected FEM models	
	Lagrange Multiplier Test	-	-	
Equation II	Chow Test	0,0000	Selected FEM models	FEM
	Hausman test	0,0490	Selected FEM models	
	Lagrange Multiplier Test	-	-	
Equation III	Chow Test	0,0000	Selected FEM models	REM
	Hausman test	0,7715	Selected FEM models	
	Lagrange Multiplier Test	0,0000	Selected FEM models	

Source: Stata output, secondary data processed 2025.

Model selection results show that Equations I and II fit best with the Fixed Effect Model (FEM), while Equation III fits best with the Random Effect Model (REM).

Panel Data Regression Model Analysis

Based on the selected panel regression models, the following are the regression results for all equations.

Table 6. Panel Data Regression Results

Variable		Y1	Y2	Y3
		Income	**Unemployment**	**Poverty**
	Constant			
X1	Trade Openness	-0.306	-0.020	0.023
		0.138	**0.081***	**0.397**
X2	Foreign Inflow Funds	0.009	-0.000	0.001
		0.298	**0.452**	**0.705**
X3	Corruption	1.036	-0.056	-0.045
		0.000***	**0.000*****	**0.488**
X4	Entrepreneurship	-0.001	-0.000	0.001
		0.837	**0.177**	**0.000*****
X5	Internet Penetration	0.200	-0.039	-0.016
		0.475	**0.022****	**0.509**
X6	Social media	-0.732	0.021	0.053
		0.078*	**0.462**	**0.028****
Simultaneous Test (F Test)		3.81	29.83	8126.29
		0,0012***	**0,000*****	**0,000*****

Variable		Y1	Y2	Y3
		Income	Unemployment	Poverty
Constant				
R-Squared	Within	**0.0890**	**0.1164**	**0.0329**
	Between	**0.2727**	**0.2185**	**0.0235**
	Overall	**0.1876**	**0.1829**	**0.0118**

Note: The model is estimated using panel data regression. The symbols *, **, and *** indicate statistical significance at the 10%, 5%, and 1% levels, respectively. The R-squared value is presented to provide an overview of the goodness-of-fit of the model.

Source: Stata output, secondary data processed 2025.

Panel regression results indicate that several variables partially affect per capita income, unemployment rate, and poverty level.

Coefficient of Determination

The estimation results show varying R-squared values across models (within, between, and overall), reflecting how well the independent variables explain changes in income, unemployment, and poverty.

For Equation I (Income), the within R-squared of 0.0890 indicates that only 8.9% of income variation within countries over time is explained by the model, suggesting limited explanatory power for time-series dynamics. The between R-squared of 0.2727 shows that 27.27% of income differences between ASEAN and BRICS countries are explained, while the overall R-squared of 0.1876 indicates moderate explanatory ability overall.

For Equation II (Unemployment), the within R-squared of 0.1164 suggests that 11.64% of within-country variation is explained by the model, higher than in the income model. The between R-squared (0.2185) and overall R-squared (0.1829) indicate that the independent variables moderately explain cross-country and total variation, consistent with the model's overall significance.

For Equation III (Poverty), the within R-squared (0.0329), between R-squared (0.0235), and overall R-squared (0.0118) are all very low, indicating that the model poorly explains poverty variation. This suggests other dominant factors—such as income inequality, domestic economic structure, and fiscal redistribution policies—play a greater role.

F Test

The F-test assesses whether all independent variables jointly have a significant effect on the dependent variable. The estimation results show F-statistics of 3.81, 29.83, and 8126.29, with p-values of 0.0112 and 0.000 (< 0.05). This indicates that, at the 5% significance level, all independent variables collectively have a significant impact on per capita income, unemployment rate, and poverty level, confirming that the regression models are appropriate for explaining these relationships.

t-test

The partial t-test evaluates the individual significance of each independent variable on the dependent variable while holding others constant.

For Equation I (Income), Corruption (X3) has a highly significant effect at the 1% level ($p < 0.01$), and Social Media (X6) is marginally significant at the 10% level ($p = 0.078$). Other variables—Trade Openness (X1), Foreign Inflows (X2), Entrepreneurship (X4), and Internet Penetration (X5)—show no significant effect.

For Equation II (Unemployment), Trade Openness (X1) is marginally significant at the 10% level ($p = 0.081$), Corruption (X3) is highly significant at 1% ($p < 0.01$), and Internet Penetration (X5) is significant at 5% ($p = 0.022$). Variables X2, X4, and X6 are not significant.

For Equation III (Poverty), Entrepreneurship (X4) is highly significant at the 1% level ($p < 0.01$), and Social Media (X6) is significant at 5% ($p = 0.028$), while the remaining variables (X1, X2, X3, and X5) are not significant.

The Impact of Globalization on Welfare in ASEAN and BRICS Countries

Based on the data analysis results, it was found that Per Capita Income (Y1) and Poverty (Y3) were not significantly affected by any globalization indicators. Jaya and Widanta (2023) stated that the benefits of globalization, such as international trade, are not evenly distributed among all social groups (Jaya & Widanta, 2023). Gains from exports and imports are often concentrated in already strong sectors or regions, while the poor remain limited in accessing job opportunities, capital, or markets created by trade. Without supporting policies such as skill training, social protection, and equitable infrastructure, trade openness may not effectively reduce poverty. Meanwhile, the next social welfare indicator, the Open Unemployment Rate (Y2), was found to be influenced only by Trade Openness (X2). This indicates that higher trade openness—reflected by a larger share of exports and imports in GDP—tends to reduce unemployment. Trade openness stimulates the growth of export-oriented sectors, which in turn creates more job opportunities as firms expand production to meet increased demand.

The Impact of Digitalization on Welfare in ASEAN and BRICS Countries

The dependent variable of welfare was measured using three indicators: per capita income (Y1), open unemployment rate (Y2), and poverty rate (Y3). Digitalization was measured using Internet Penetration (X5) and Social Media (X6). Data analysis revealed that Internet Penetration (X5) had a negative and significant effect on the open unemployment rate (Y2) but no significant effect on per capita income (Y1) or poverty rate (Y3). Conversely, Social Media (X6) had a negative and significant effect on per capita income (Y1), no effect on the unemployment rate (Y2), and a positive effect on poverty rate (Y3).

Specifically, Internet Penetration (X5) negatively and significantly affected the open unemployment rate (Y2) ($p < 0.022$), suggesting that greater internet access reduces

unemployment by improving job information access, search efficiency, and creating new digital job opportunities. This finding aligns with (Zhang et al., 2025), who found that internet penetration promotes economic growth and job creation.

Meanwhile, Social Media (X6) showed mixed effects: a negative and significant relationship with per capita income (Y1) (β = -0.732; p = 0.078) — indicating reduced productivity due to social media use — and a positive and significant relationship with poverty rate (Y3) (β = 0.053; p = 0.028), suggesting that increased social media usage may drive higher poverty through unproductive consumption and a hedonistic lifestyle culture.

Other Factors that Influence Welfare

This study also examined non-globalization factors that may influence social welfare (Y), measured through three indicators: per capita income (Y1), open unemployment rate (Y2), and poverty rate (Y3). The non-globalization and non-digitalization factors were represented by Corruption Level (X3) and Entrepreneurship Rate (X4).

The analysis showed that corruption (X3) had a significant effect on per capita income (Y1) ($p < 0.05$), indicating that higher corruption levels negatively impact economic welfare. This finding aligns with (Fitri & Lutfi, 2024), who found that corruption perception significantly affects GDP per capita in ASEAN countries. For the open unemployment rate (Y2), corruption (X3) also had a negative and significant effect ($p < 0.05$), suggesting that corruption hampers job creation by distorting resource allocation and discouraging business growth, consistent with (Uddin & Rahman, 2023).

Meanwhile, the poverty rate (Y3) was significantly influenced only by the entrepreneurship rate (X4) with a positive relationship (β = 0.001; $p < 0.01$). This suggests that higher entrepreneurship levels are associated with increased poverty, possibly because many new micro or small enterprises have limited profitability and do not yet contribute significantly to poverty reduction. This finding supports (Boudreaux, 2019), who argued that entrepreneurship growth does not automatically reduce poverty without adequate access to capital, education, and market networks.

CONCLUSION

This thesis presents a comprehensive empirical analysis of the impact of globalization and digitalization megatrends on welfare outcomes in ASEAN and BRICS countries, with welfare proxied by per capita income, open unemployment rate, and poverty rate. Employing a quantitative panel data approach covering the period from 2007 to 2024, the study reveals substantial heterogeneity and complexity in the relationships between globalization, digitalization, and welfare indicators across countries. The findings demonstrate that not all dimensions of globalization and digital transformation uniformly translate into improved welfare, highlighting the importance of contextual and structural factors in shaping development outcomes.

The empirical results indicate that trade openness does not have a statistically significant effect on per capita income or poverty rates. However, it exerts a significant negative effect on the open unemployment rate, suggesting that greater integration into international trade contributes to job creation, particularly through increased labor demand in export-oriented sectors. This finding implies that while trade openness may not immediately raise income levels or alleviate poverty, it plays an important role in expanding employment opportunities.

Foreign direct investment (FDI) is found to have no significant impact on any of the welfare indicators examined, namely income, unemployment, and poverty. This result suggests that FDI inflows in ASEAN and BRICS countries during the observed period may not have been sufficiently productive or inclusive to generate broad-based welfare improvements. Possible explanations include weak linkages between foreign firms and local economies, limited technology spillovers, and the concentration of FDI in capital-intensive sectors.

Corruption, measured using the Corruption Perceptions Index (CPI), shows a significant positive effect on per capita income and a significant negative effect on unemployment, while its effect on poverty is not statistically significant. Given that a higher CPI score reflects lower levels of corruption, these findings indicate that improvements in governance and reductions in corruption are associated with higher income levels and lower unemployment rates. This underscores the critical role of institutional quality in enhancing economic performance and labor market outcomes, even though its direct impact on poverty reduction appears less pronounced.

Entrepreneurship does not exhibit a significant effect on income or unemployment, suggesting that the expansion of entrepreneurial activity alone does not necessarily translate into higher productivity or job creation. Interestingly, entrepreneurship has a significant positive effect on poverty, indicating that an increase in entrepreneurial activity may be dominated by necessity-based or low-productivity informal businesses. This condition potentially reflects structural weaknesses in the entrepreneurial ecosystem, where new ventures are unable to generate sufficient income to lift individuals out of poverty.

Internet penetration is found to have no significant impact on income and poverty but shows a significant negative effect on unemployment. This result highlights the role of digital connectivity in expanding access to labor markets, information, and economic opportunities, thereby reducing unemployment. However, the absence of a significant effect on income and poverty suggests that digital access alone is insufficient without complementary factors such as skills development, productive digital utilization, and inclusive digital business models.

Social media usage exhibits a significant negative effect on per capita income and a significant positive effect on poverty, while its effect on unemployment is statistically insignificant. These findings suggest that excessive or unproductive use of social media may reduce labor productivity and earnings, while simultaneously encouraging consumptive behavior that increases vulnerability to poverty. This highlights the dual nature of digital platforms, where benefits depend heavily on how technology is utilized rather than mere access.

Based on these findings, the study recommends several policy directions. Governments should prioritize the development of high–value-added productive sectors that can effectively leverage

trade openness and FDI to generate quality employment, particularly in labor-intensive and export-oriented technology industries. Strengthening governance and anti-corruption measures is essential to ensure the efficient allocation of public resources and investment, thereby supporting income growth and more equitable welfare distribution. Expanding internet infrastructure must be accompanied by digital literacy programs and targeted support for micro, small, and medium enterprises (MSMEs) to integrate into digital markets, enabling income generation and poverty reduction. In addition, productive social policies, including conditional cash transfers, job training subsidies, and employment placement programs, should be optimized to reduce unemployment and protect vulnerable populations. Finally, the development of a high-quality entrepreneurial ecosystem should focus not merely on increasing the number of businesses, but on improving access to affordable financing, business mentoring, and integration into major industry supply chains to enhance competitiveness and market reach.

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