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Quality of Governance in ASEAN: Examining the Roles of ICT, Globalization, and Socioeconomics Across Different Welfare Contexts

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ABSTRACT

This research explores the influence of information and communication technology (ICT), globalization, and socioeconomic variables on the quality of governance (QoG) in various welfare settings within ASEAN nations. Employing a thorough comparative examination, the study classifies eight countries into welfare, aspiring welfare, and low-welfare categories. Data was gathered from 1996 to 2022, covering 27 years. Structural equation modeling (SEM) is utilized to evaluate the connections between factors. Principal discoveries demonstrate that globalization significantly enhances the QoG in welfare nations, while ICT adoption demonstrates mixed outcomes, adversely affecting human resources. Aspiring welfare nations gain from ICT in amplifying government spending but encounter challenges in the efficient execution of globalization procedures. Low-welfare nations display notable positive repercussions of globalization on both government spending and QoG, whereas ICT boosts the development of human resources. The fit indices of the model suggest differing degrees of model appropriateness across the categories, with welfare and aspiring welfare nations displaying superior fit when compared to low-welfare nations. These findings accentuate the need for context-specific strategies to optimize the advantages of ICT and globalization efficiently. Decision-makers in welfare nations should concentrate on merging global benchmarks and enhancing institutional frameworks to maximize ICT advantages entirely. Aspiring welfare nations require well-rounded approaches that tackle institutional deficiencies while encouraging technological advancement and global amalgamation. Low-welfare nations ought to prioritize the development of human

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resources and effective resource management to convert economic expansion into governance enhancements.

Keywords: ASEAN, globalization, information and communication technology, quality of governance, socioeconomic factors

INTRODUCTION

The progressions in information and communication technology (ICT) and globalization have considerably transformed the world (Hale et al., 2013; Kurbalija, 2016). ICT and diverse socioeconomic conditions have notably influenced the quality of governance (QoG) in several developed nations, for example, Australia, Europe, Japan, and the United States. Despite their geographical proximity, ASEAN nations exhibit notable disparities in political systems, economic advancement, and social frameworks. Globalization, ICT advancement, and socioeconomic elements are pivotal in enhancing the quality of governance. Therefore, this research delves into how these elements impact QoG in ASEAN nations.

The varied political structures, economic progression levels, and social frameworks in ASEAN countries make them relevant for examining ICT, globalization, and socioeconomic conditions on QoG (Hossain, 2022; Wirajing & Nchofoung, 2023). Japan, South Korea, and Taiwan have been recognized as economically advanced in East Asia due to their robust welfare spending and comprehensive social safety (Aspalter, 2023; Holliday, 2005; Jakovljevic et al., 2020). On the other hand, China, India, and most ASEAN countries, including Indonesia, Malaysia, the Philippines, Thailand, and Vietnam, continue to strive to become welfare states (Aspalter, 2023; Rasyid, 2022). A thorough analysis of these connections in the ASEAN context can contribute to the global understanding of QoG. Effective QoG is crucial for sustainable and fair progress worldwide, including ASEAN (Wirajing & Nchofoung, 2023). A comparative examination of diverse welfare contexts in ASEAN can assist policymakers in enhancing the level of QoG (Aspalter, 2023; Hossain, 2022; Kurbalija, 2016).

ICT applications can enhance openness, receptiveness, and citizen involvement in governmental activities (Dias, 2020; Leite, 2021). However, varying levels of technological adoption can lead to differences in these areas, impacting QoG (Lnenicka & Nikiforova, 2021; Norris, 2001; Van-Dijk, 2006). For example, digitalized public information enables citizens to retrieve budget allocations (Musa et al., 2023), laws, and policy advancements, which can diminish corruption and enhance openness. Furthermore, ICT can considerably boost the efficiency and efficacy of government services. Social media facilitates direct interaction between government authorities and citizens, heightening involvement in policy formulation and reducing bureaucratic corruption (David et al., 2022; Dias, 2020). Nonetheless, the disproportional rates of ICT adoption in ASEAN warrant scholarly attention to scrutinize their contribution to QoG and provide policy suggestions.

Globalization has presented prospects and hurdles for governance (Held & McGrew, 2007; Stiglitz, 2020, 2021; Thees & Erschbamer, 2023). It has eased the acceptance of optimal governance methodologies and broadened international collaboration (Thees & Erschbamer, 2023; Slaughter, 2004). Nevertheless, nations must adjust to global dynamics, confronting external challenges and intensified competition (Aslan & Altinoz, 2021; Stiglitz, 2020, 2021). In the past few decades, the ASEAN countries have become more globally connected and have ratified numerous QoG agreements to strengthen internal governance (Hossain, 2022). However, the adoption of globalization varies among ASEAN countries, and one of the potential reasons is that it contributes to disparities in QoG in the region. This variation motivates us to examine how globalization affects QoG in ASEAN.

In ASEAN, endeavors to tackle corruption and unlawful activities through adherence to global standards have ameliorated citizens' standard of living (Hossain, 2022; S. Kim et al., 2009). Conversely, nations with secluded economies and restricted international exposure may endure adverse repercussions. Socioeconomic elements substantially impact a country's capacity to ensure social equity, governance, and sustainable expansion (Acemoglu & Robinson, 2012; Aslan & Altinoz, 2021; Rubasundram & Rasiah, 2019). Disparities in socioeconomic conditions affect QoG initiatives, emphasizing the importance of comprehending the impacts of these elements in different regions (Aspalter, 2023; Khalid & Maidin, 2022). Effective governance tactics can foster comprehensive expansion and social equity, profoundly influencing QoG (Hossain, 2022; Razin & Sadka, 2018).

Despite significant advancements in ICT and globalization, a gap exists in understanding their impact on the QoG in ASEAN countries. Most existing studies focus on developed regions; however, the unique political, economic, and social contexts of ASEAN countries require specific investigation. Disparities in ICT adoption, globalization, and socioeconomic conditions among ASEAN countries highlight the need for a comprehensive analysis. Besides, some existing studies come up with mixed and sometimes conflicting results, which also drives us to evaluate the issues. Moreover, this study categorizes ASEAN countries into three welfare groups: high welfare[1], aspiring welfare[2], and low welfare[3], marking a pioneering approach that has been considerably overlooked in previous research on the region. Therefore, the current study addresses the mentioned issues by exploring how these factors influence QoG in diverse ASEAN contexts. Specifically, this study examines the impact of ICT, globalization, and socioeconomic factors on the QoG in various welfare settings across

[1] High-welfare refers to a country with high indicators, namely Singapore, Brunei

[2] Aspiring welfare refers to a country with promising indicators, namely Indonesia, Malaysia, Thailand, and Vietnam

[3] Low-welfare refers to countries with low indicators, namely the Philippines, Myanmar

the ASEAN region. Nations are categorized into three categories: welfare (Singapore and Brunei Darussalam), aspiring welfare (Indonesia, Malaysia, Thailand, and Vietnam), and low welfare (the Philippines and Myanmar). Appendix A provides further details about the selection procedures for welfare countries. Our investigation delivers a comparative evaluation of elements impacting QoG in different welfare contexts throughout ASEAN. The objective is to provide perspectives into the importance of ICT advancement, globalization, and socioeconomic aspects of QoG disparities, delivering valuable expertise for decision-makers to enrich governance excellence. The discoveries can guide customized strategies and actions targeting ASEAN nations' distinct demands and obstacles.

LITERATURE REVIEW

The significance of information digitization in governance has attracted considerable scrutiny. Some academics posit that adopting ICT enhances openness, answerability, and effectiveness (Grimmelikhuijsen et al., 2017; Leite, 2021). Conversely, others contend that digitalization may exacerbate inequities in the absence of requisite institutional and cultural changes (Bannister & Connolly, 2014; Grybauskas et al., 2022). These discussions underscore the necessity to comprehend the contextual elements impacting ICT and QoG among varied welfare factions.

An exhaustive examination of ICT, globalization, and socioeconomic variables impacting governance in welfare-aspiring ASEAN nations is deficient. While globalization typically bolsters governance quality in ASEAN, Darusalam et al. (2023) discovered that the diffusion of ICT did not notably sway governance. Mukherjee and Dutta (2018) proposed that heightened levels of social globalization reap benefits from economic globalization. Notwithstanding advancements in ICT and e-governance in Singapore, Brunei, Malaysia, and Indonesia, certain ASEAN states exhibit a lag in ICT adoption. Scrutinizing the determinants of successful digitalization and ICT in governance is pivotal. Conversely, Acheampong (2023) observed that ICT has a meager influence on governance in sub-Saharan Africa, owing to low adoption rates, inadequate budget allocation, and a reluctance among authorities to harness ICT for societal welfare. These divergences underscore the exigency for further exploration into the contribution of ICT to QoG in ASEAN.

Chen and Yang (2022) remarked on ICT's restricted implications on QoG in ASEAN due to nascent adaptation phases. Similarly, Darusalam et al. (2023) pinpointed deficient governmental endeavors in ICT strategies. Sabani et al. (2019) accentuated ICT's favorable imprint on governance in Indonesia, particularly in combating corruption and amplifying accountability and transparency. Nevertheless, investigations into the repercussions of ICT on QoG in ASEAN are scant (Adams & Akobeng, 2021; Evans & Mesagan, 2022; Lechman, 2023; Rajaguru et al., 2023). Grasping ICT's function in ASEAN governance will bridge these knowledge lacunae.

The body of literature on ICT, globalization, and governance can be enriched by various theoretical frameworks. One notable theory is the Technology Acceptance Model (TAM), which elucidates how users embrace and employ technology. As per TAM, perceived utility and ease of use are pivotal determinants of technology adoption (Davis, 1989). This theory is pertinent to our investigation as it furnishes a groundwork for comprehending the adoption and repercussions of ICT on governance quality. In regions with greater perceived advantages and ease of use, such as welfare and aspiring welfare countries, ICT adoption is presumably more prevalent, culminating in enhanced transparency, answerability, and governance efficiency (Grimmelikhuijsen et al., 2017; Leite, 2021).

Another relevant theoretical framework is Institutional Theory, which underscores the significance of institutional structures and cultural norms in shaping organizational behavior (Scott, 2020). The significance of institutional mechanisms, which encompass legal structures, regulatory bodies, and governance models, is vital in shaping organizational responses to environmental challenges (Child & Tsai, 2005). These mechanisms function as channels through which global standards and practices are assimilated and executed within national frameworks, thereby impacting both the formulation of policy and the conduct of institutions (Turnpenny et al., 2008). This particular theory becomes especially pertinent when analyzing the influence of globalization on governance. The process of globalization exposes nations to international standards and practices, potentially driving institutional reforms and enhancing the quality of governance. For example, entities such as the judiciary, anti-corruption organizations, and central banking authorities might experience reform initiatives to conform to globally recognized best practices (Meagher, 2005), enhancing operational efficiency and transparency. This notion is supported by the research of Gygli et al. (2019), which indicates that high-income countries experiencing greater globalization tend to exhibit improved governance outcomes attributed to the adoption of global best practices. Furthermore, the Resource-Based View (RBV) of the firm asserts that organizational resources and capabilities are pivotal for attaining competitive advantage. The RBV can be expanded to the public sector to elucidate how human capital and government expenditure contribute to enhancing governance.

Public institutions, with the requisite resources and competencies, can function as effective mechanisms for the execution of policy reforms and the assurance of accountability, thereby reinforcing the governance framework (Rich, 2023). Increased investments in human capital, such as education and health, coupled with efficient resource allocation, have the potential to significantly enhance governance quality by fostering the development of capable institutions and reducing corruption (Acemoglu & Robinson, 2019; World Bank, 2021a, 2021b). In this context, the structural frameworks for

overseeing the advancement of human capital, encompassing public educational institutions, healthcare organizations, and workforce enhancement initiatives, are crucial in influencing governance results. These theoretical perspectives collectively underscore the intricate interplay of ICT, globalization, and socioeconomic factors in shaping governance quality within various welfare contexts.

The influence of globalization on the quality of governance has attracted considerable attention. Some scholars argue that globalization enhances governance by exposing nations to global standards and fostering economic progress (Thees & Erschbamer, 2023; Simmons & Elkins, 2020). Conversely, critics posit that globalization may undermine domestic institutions and exacerbate social disparities (Sinha & Sengupta, 2019; Stiglitz, 2020, 2021). Conflicting evidence exists regarding the role of globalization in improving governance within the ASEAN region (Hossain, 2022; H. Kim, 2019). Comparative studies on globalization and QoG across different regions yield varied findings (Samadi & Owjimehr, 2021). Gygli et al. (2019) identified enhanced governance in high-income nations due to globalization. In contrast, Langbein and Knack (2010) highlighted a diminished effect of globalization on QoG in low-income countries. Darusalam et al. (2023) demonstrated a significant improvement in QoG within ASEAN attributed to globalization, underscoring the necessity for further examination of the impact of globalization in this region.

Socioeconomic factors are also intertwined with governance attributes. Greater economic development and government expenditure are correlated with resilient governance structures (Acemoglu & Robinson, 2019). The proficiency of governmental entities is significantly influenced by their economic vitality, which subsequently enhances institutional capability and accountability. Human capital is pivotal in nurturing effective public institutions (World Bank, 2021b). Investments in human capital—encompassing education, skills development, and public health initiatives—establish a foundation for institutional effectiveness by nurturing a competent and informed workforce capable of engaging in governance mechanisms. Despite extensive research on the influence of socioeconomic factors on governance, further investigation is required to understand their impact on QoG within ASEAN. The relevance of this aspect is especially marked since the ASEAN area comprises both high-income and low-income countries, each encountering different governance obstacles shaped by their particular socioeconomic conditions.

Enhanced economic growth typically corresponds with improved governance, as wealthier nations can allocate more resources to public institutions (Acemoglu & Robinson, 2019; Beyene, 2022). Nevertheless, economic advancement alone does not adequately serve as an indicator of governance quality. The institutional frameworks that regulate the allocation and effective utilization of resources are

instrumental in this regard. Nevertheless, the relationship between gross domestic product per capita (GDP) and governance quality is intricate and influenced by institutional capacity and political norms (Hamid et al., 2022; Kurtz & Schrank, 2007). This intricacy is exacerbated by the efficacy of governance, which frequently depends on the competency of institutions in converting economic growth into public goods and services. Some resource-rich countries struggle with corruption and weak governance (Ross, 2015). This phenomenon is commonly characterized as the "resource curse," wherein the presence of plentiful natural resources may give rise to rent-seeking behaviors that detrimentally affect governance initiatives and cultivate institutional inefficiency and corruption (Mehlum et al., 2006; Zhang et al., 2024).

Analyzing the relationship between GDP and governance quality in both welfare and non-welfare ASEAN countries can offer insights into the impact of economic development on governance. A comprehensive analysis of these discrepancies among ASEAN nations can elucidate the intricate relationships between economic resources, institutional capacity, and quality of governance, thereby providing insights for enhancing governance frameworks within the region.

Government expenditure at an elevated level has the potential to improve governance by enhancing the provision of public services and social protection (Gemmell et al., 2016; Thanh et al., 2020). Nevertheless, increasing government expenditure (GOVE) might result in inefficiencies and corruption, particularly in nations with fragile institutions (Lindquist & Shepherd, 2023). An analysis of GOVE and the quality of governance within ASEAN countries can shed light on the impact of public expenditure and institutional strength on governance outcomes.

Human capital, when evaluated through indicators related to education and health, plays a crucial role in enhancing the efficacy of public institutions (World Bank, 2021b). Nations with elevated levels of human capital often observe improved governance results (Czyżewski et al., 2021; Duan et al., 2022; Hanushek & Woessmann, 2015). Nevertheless, research is scarce on the correlation between human capital and governance quality in welfare and non-welfare ASEAN countries. This investigation provides valuable insights into how human capital influences governance results in different contexts.

ICT has a transformative impact on the functioning of government, communication channels, and the delivery of public services, as discussed by Leite (2021). The utilization of E-governance not only enhances levels of transparency and accountability but also contributes to increased operational efficiency, as highlighted by Dunleavy et al. (2005). Governance is further improved through ICT integration, which facilitates real-time data provision, promotes active citizen engagement, and optimizes administrative procedures, as outlined by Bauhr and Grimes (2014) and Norris (2001). Various empirical investigations

have indicated a direct correlation between ICT adoption and governance quality, as demonstrated by Baloch et al. (2021), Leite (2021) and Mansoor (2021). Drawing from the existing body of literature, the present study formulates the following hypothesis:

Hypothesis 1: Information and Communication Technology (ICT) positively influences the quality of governance (QoG).

Globalization presents nations with global standards and norms, which serve to advance effective governance practices (Held & McGrew, 2007). It enables the expansion of economies, the evolution of organizations, and the availability of resources, thereby strengthening governance capabilities (Aslan & Altinoz, 2021; Stiglitz, 2020, 2021). Research demonstrates a connection between globalization and the quality of governance (Dreher et al., 2009; Gygli et al., 2019). Our second hypothesis is set as follows:

Hypothesis 2: Globalization positively influences the quality of governance (QoG).

Socioeconomic factors play a pivotal role in shaping government operations and resource allocation (Acemoglu & Robinson, 2019; Aslan & Altinoz, 2021). A higher GDP per capita is associated with increased tax revenues and public investments, leading to enhancements in public services and infrastructure (Wirajing & Nchofoung, 2023). The augmentation of government expenditure can strengthen state capacity in service delivery and promote social equity (Hossain, 2022). Human capital development is a critical component for the efficacy of public institutions (World Bank, 2021b). Our third hypothesis is set as follows:

Hypothesis 3: Socioeconomic factors (GDP, GOVE, HC) positively influence the quality of governance (QoG).

METHODOLOGY

Data Collection

Data were obtained from reputable international organizations, including the World Bank, the International Telecommunication Union (ITU), the International Monetary Fund (IMF), and the KOF Swiss Economic Institute (KOF). The study sample comprised Asian nations classified by the United Nations Development Program's Human Development Index (HDI) into welfare, aspiring welfare, and low-welfare categories. Welfare nations, characterized by a very high HDI, encompass Brunei Darussalam and Singapore. Aspiring welfare nations exhibiting a high HDI consist of Indonesia, Malaysia, the Philippines, Thailand, and Vietnam. Low-welfare nations with a medium or low HDI include the Philippines and Myanmar. The data collection process spanned 27 years, from 1996 to 2022. Further elaboration on the classification of welfare countries can be found in Appendix.

Variables

The QoG represents the dependent variable, which is evaluated using the Worldwide Governance Indicators (WGI), which

encompass six dimensions: voice and accountability, political stability, government effectiveness, regulatory quality, rule of law, and control of corruption (AlShiab et al., 2020; Polat, 2020).

The independent variables in this research encompass ICT and globalization. Measurement of ICT-related indicators includes internet penetration, e-government services, and digital infrastructure (International Telecommunication Union, 2021; World Bank, 2021a, 2021b). The evaluation of globalization utilized the KOF Globalization Index, which covers economic, social, and political aspects (Gygli et al., 2019).

Control variables considered in this research comprise various socioeconomic factors: gross GDP, GOVE, and human capital (HC). GDP, measured in constant US dollars, signifies the economic productivity per individual (World Bank, 2021a, 2021b). Government expenditure includes a percentage of GDP and represents public investments in education, healthcare, and social welfare (International Monetary Fund, 2021). The Human Capital Index, which accounts for education, healthcare, and employment results (World Bank, 2021a, 2021b), serves as an indicator for HC (Table 1).

Research Method

This research utilized SEM to investigate the determinants of governance quality. SEM, a statistical technique integrating factor analysis and multiple regression analysis, enables the concurrent examination of various relationships among observed and latent variables (Hair et al., 2017; Kline, 2015). This approach is especially beneficial for exploring intricate causal connections and addressing measurement inaccuracies (Bollen, 1989; Hoyle, 2012). Data cleansing procedures were implemented before conducting the primary analysis, and any

Table 1
Variable definition

Variables	Definition	Source	Measurement
Information and communication technology (ICT)	Information technology refers to the use of computers, software, networks, and other digital technologies to process, store, and transmit information.	Swiss Economic Institute (KOF)	0–100
Globalization	Globalization measures a country's level of economic, social, and political globalization through factors such as trade openness, capital flow openness, information and communication technology development, and cultural exchange.	Swiss Economic Institute (KOF)	0–100
Gross domestic product (GDP)	GDP is the sum of the gross value added by all resident producers in the economy, plus any product taxes and minus subsidies not included in the product value. It is calculated excluding depreciation of manufactured assets and depletion and degradation of natural resources.	World Development Indicator (WDI-World Bank)	0–100

Table 1 *(continue)*

Variables	Definition	Source	Measurement
Government expenditure (GOVE)	General government final consumption expenditure consists of all government current expenditures on the acquisition of goods and services (including employee compensation). It comprises the majority of national defense and security expenditures and excludes military expenditures included in government capital formation.	World Development Indicator (WDI-World Bank)	0–100
Human capital (HC)	Human capital comprises the knowledge, skills, and health that individuals acquire throughout their lives, allowing them to realize their potential as contributing members of society.	World Development Indicator (WDI-World Bank)	0–100
Quality of governance (QoG)	The QoG measures the effectiveness, accountability, and transparency of a country's political institutions and its ability to provide citizens with basic public goods and services, as evaluated by the International Country Risk Guide (ICRG) framework.	World Development Indicator (WDI-World Bank)	0–100

outliers were excluded. We ensured that the assumptions of normality were satisfied. Confirmatory Factor Analysis (CFA) was conducted, followed by an evaluation of the structural model using various fit indices, including the chi-square statistic, comparative fit index (CFI), and root mean square error of approximation (RMSEA; Hair et al., 2017; Kline, 2015).

RESULTS

Descriptive Analysis

Table 2 illustrates the descriptive statistics pertaining to different nations classified as welfare, aspiring welfare, and low welfare. The QoG metrics indicate that welfare nations exhibit the highest mean value (80.163) and the lowest standard deviation (4.579), implying a more uniform and elevated level of governance quality. Conversely, low-welfare countries display the lowest mean QoG (53.925) along with a higher standard deviation (12.290), signifying increased variability and generally inferior governance standards. Correspondingly, the ICT scores demonstrate a comparable trend, as welfare countries showcase a superior mean ICT score (67.415) compared to low-welfare nations (33.476). Globalization (Glob) scores peak in aspiring-welfare countries (63.712) and hit a low in low-welfare nations (49.774). Moreover, the GDP growth rates unveil that aspiring welfare nations record the highest mean (5.616), while welfare countries exhibit the lowest (3.854), indicating distinct economic dynamics among these classifications. GOVE and HC scores are also most noteworthy in welfare countries, underscoring their enhanced investments in public services and human development (Table 2).

Table 3 presents the inter-item correlation matrix, demonstrating noteworthy associations between governance quality

Table 2
Descriptive information

	All countries				Welfare Country				Aspiring-Welfare Country				Low-Welfare Country			
	Mean	**Min**	**Max**	**SD**	**Mean**	**Min**	**Max**	**SD**	**Mean**	**Min**	**Max**	**SD**	**Mean**	**Min**	**Max**	**SD**
QoG	64.359	27.000	89.125	13.371	80.163	67.913	89.125	4.579	61.675	39.833	79.417	9.250	53.925	27.000	78.583	12.290
ICT	49.447	4.928	85.380	22.365	67.415	52.708	80.213	8.110	48.449	9.631	85.380	20.381	33.476	4.928	72.650	23.045
Glob	59.731	29.006	83.507	15.463	61.726	29.508	83.507	16.896	63.712	31.711	81.342	12.211	49.774	29.006	71.923	15.612
GDP	5.125	-13.127	15.600	3.612	3.854	-2.778	15.600	3.840	5.616	-13.127	9.938	2.913	5.416	-7.370	13.844	4.321
GOVE	21.454	-6.815	69.960	11.265	24.217	-6.815	69.960	17.575	22.128	2.120	38.926	8.378	17.345	2.140	27.973	6.061
HC	2.298	1.333	3.636	0.450	2.495	1.682	3.636	0.429	2.225	1.333	3.043	0.460	2.246	1.500	2.893	0.392
n	304				76				152				76			

Note. SD = Standard deviation

Table 3
Inter-item correlation matrix

	QoG		**ICT**		**Glob**		**GDP**		**GOVE**		**HC**
QoG	1.000										
ICT	0.724	***	1.000								
Glob	0.484	***	0.779	***	1.000						
GDP	-0.213	***	-0.177	***	0.021		1.000				
GOVE	0.264	***	0.283	***	0.018		-0.229	***	1.000		
HC	0.251	***	0.288	***	0.202	***	-0.129	**	0.137	**	1.000

Note. *** indicates a high level of significance (99% confidence), and ** represents moderate significance (95% confidence)

and other variables. QoG exhibits a robust positive correlation with ICT at 0.724 and with Socioeconomic Conditions (SoC) at 0.814, indicating a close relationship between enhanced governance and superior digital infrastructure, as well as favorable socioeconomic circumstances. A moderate positive correlation of 0.484 is observed between QoG and Globalization, suggesting that nations with higher levels of globalization tend to exhibit superior governance standards. Conversely, QoG displays a weak negative correlation of -0.213 with GDP, implying that increased economic productivity per capita does not necessarily equate to enhanced governance. GOVE and HC demonstrate weak positive correlations with QoG at 0.264 and 0.251, respectively, underscoring their contributions to governance reinforcement, although to a lesser degree. Furthermore, ICT displays strong positive correlations with Globalization at 0.779, emphasizing the significance of digital technologies within a globalized setting. These results highlight the intricate interplay of diverse factors that impact governance quality across various welfare contexts within ASEAN nations (Table 3).

Regression Estimates

In welfare countries, the regression analysis underscores various substantial associations. All variables are statistically significant at 90, 95 and 99 confidence intervals, except for ICT to GOVE, which has a negative and insignificant estimate of -0.119 (p = 0.7). The highest estimated unstandardized coefficient is between Glob and GDP, with an unstandardized estimate of 0.201, while exerting a significant negative influence of ICT on GDP with an estimate of -0.254 ($p < 0.001$). Additionally, ICT significantly diminishes HC with an estimate of -0.016 ($p = 0.006$). Conversely, Glob significantly reduces GOVE with an estimate of -0.563 ($p < 0.001$). Concerning the QoG, the impact of ICT is positive yet not statistically significant (estimate = 0.14, $p = 0.092$), whereas Glob has a significant positive effect on QoG (estimate = 0.134, $p = 0.005$). Furthermore, GOVE significantly enhances QoG (estimate = 0.129, $p < 0.001$), indicating a positive relationship where higher government expenditure is associated with improved governance quality in welfare countries.

The indirect effect of Glob on QoG mediated through GOVE indicates a negative unstandardized estimate of -0.073, and the indirect effect of ICT on QoG mediated through GDP also presents a negative unstandardized estimate of -0.056, both of which are statistically significant at a 99% confidence interval. These mean that the increase in GOVE and GDP would decline the QoG. This finding can be interpreted that while Glob and ICT may contribute to economic and governance changes, their overall impact on the quality of governance might not always be beneficial. It highlights the complexity of these relationships and stresses the need for balanced and targeted policy measures to ensure that improvements in government effectiveness and economic performance lead to better governance outcomes.

In countries characterized by aspiring welfare systems, ICT has a significant and positive influence on GOVE (estimate = 0.391, $p < 0.001$), suggesting that increased ICT utilization leads to higher government expenditure. Conversely, globalization significantly decreases GOVE (estimate = -0.227, $p = 0.026$), implying that globalization may reduce government spending in such nations. The effect of ICT on GDP is positive but not statistically significant (estimate = 0.02, $p = 0.463$), and globalization also exerts a non-significant negative impact on GDP (estimate = -0.084, $p = 0.068$). ICT does not significantly impact HC (estimate = 0.002, $p = 0.229$), but it significantly enhances QoG (estimate = 0.219, $p = 0.015$). In this cohort, neither GOVE (estimate = 0.095, $p = 0.374$) nor globalization (estimate = -0.088, $p = 0.522$) significantly influences QoG, indicating distinct dynamics in aspiring welfare countries compared to welfare countries.

For low-welfare countries, the utilization of ICT demonstrates a noteworthy adverse influence on GOVE with an estimated coefficient of -0.269 and a *p*-value of 0.001, suggesting that increased adoption of ICT could potentially lead to a decrease in government spending. Conversely, the phenomenon of globalization exhibits a notably positive effect on GOVE, as indicated by an estimate of 0.467 and a p-value of less than 0.001. The impact of ICT on GDP is not deemed statistically significant, with an estimate of 0.021 and a *p*-value of 0.741. At the same time, the influence of globalization on GDP is also considered non-significant, with an estimate of -0.067 and a *p*-value of 0.479. Notably, the effect of ICT on HC is significantly positive, with an estimate of 0.012 and a *p*-value of less than 0.001, suggesting that ICT plays a crucial role in enhancing human capital development within low-welfare countries. Concerning QoG, ICT does not yield a significant impact, with an estimate of 0.04 and a *p*-value of 0.673. In contrast, globalization has a substantial positive effect, with an estimated coefficient of 0.593 and a *p*-value of less than 0.001. Furthermore, GDP exerts a significant negative influence on QoG, with an estimate of -0.411 and a p-value of 0.011, implying that an increase in GDP in low-welfare nations does not necessarily translate to improved governance (Table 4).

Model Fit Classification

Table 4 illustrates the model fit indices utilized in the SEM for three distinct welfare categories: welfare nations, aspiring welfare nations, and low-welfare nations. The tabulated data provides a comprehensive overview of various fit metrics, including the Chi-square value, degrees of freedom (DF), Chi-square/DF ratio, goodness-of-fit index (GFI), adjusted goodness-of-fit index (AGFI), comparative fit index (CFI), and root mean square error of approximation (RMSEA). These metrics play a critical role in evaluating the alignment of the proposed model with the observed data for each welfare group.

The Chi-square value tests the overall model fit, where lower values correspond to a superior fit (Kline, 2015). The Chi-

Table 4
Summary of the regression weights

Path			Welfare Countries					Aspiring-Welfare Countries					Low-Welfare Countries				
			Unstandardized	Standardized	S.E.	C.R.	*P*-Value	Unstandardized	Standardized	S.E.	C.R.	*P*-Value	Unstandardized	Standardized	S.E.	C.R.	*P*-Value
GOVE	<---	ICT	-0.119	-0.055	0.308	-0.386	ns.	0.391	0.95	0.061	6.402	***	-0.269	-1.023	0.082	-3.278	***
GOVE	<---	Glob	-0.563	-0.541	0.148	-3.805	***	-0.227	-0.331	0.102	-2.229	**	0.467	1.203	0.121	3.856	***
GDP	<---	Glob	0.201	0.885	0.032	6.310	***	-0.084	-0.352	0.046	-1.823	*	-0.067	-0.241	0.094	-0.708	ns.
GDP	<---	ICT	-0.254	-0.536	0.066	-3.822	***	0.020	0.141	0.028	0.733	ns.	0.021	0.112	0.064	0.330	ns.
HC	<---	ICT	-0.016	-0.304	0.006	-2.763	**	0.002	0.097	0.002	1.204	ns.	0.012	0.698	0.001	8.439	***
QoG	<---	ICT	0.140	0.246	0.083	1.684	*	0.219	0.484	0.091	2.424	**	0.040	0.076	0.096	0.422	ns.
QoG	<---	GOVE	0.129	0.491	0.028	4.528	***	0.095	0.086	0.107	0.889	ns.	0.117	0.058	0.126	0.931	ns.
QoG	<---	Glob	0.134	0.493	0.048	2.813	***	-0.088	-0.116	0.137	-0.640	ns.	0.593	0.755	0.145	4.100	***
QoG	<---	GDP	0.220	0.184	0.132	1.673	*	-0.156	-0.049	0.237	-0.660	ns.	-0.411	-0.145	0.162	-2.543	**
QoG	GOVE	Glob	-0.073	-0.266			***										
QoG	GDP	ICT	-0.056	-0.099			***										

Note. *** indicates a high level of significance (99% confidence), ** represents moderate significance (95% confidence), and * represents marginal significance (90% confidence), ns. Indicates not significant

square/DF ratio provides a more nuanced perspective, with values below three generally deemed acceptable (Schumacker & Lomax, 2010). GFI and AGFI gauge the proportion of variance and covariance explained by the model, with values approaching 1 indicating a strong fit (Hu & Bentler, 1999). CFI compares the model fit to an independent model, and values exceeding 0.90 suggest a favorable fit (Hu & Bentler, 1999). Lastly, RMSEA evaluates the model fit to the population covariance matrix, where values below 0.08 denote an acceptable fit and values below 0.05 signify a close fit (Browne & Cudeck, 1993).

The outcomes presented in Table 5 underscore the disparities in model fit among the three welfare groups, reflecting the varying levels at which ICT, globalization, and socioeconomic factors elucidate governance quality within distinct welfare contexts. These fit indices are indispensable for validating the structural relationships and ensuring the reliability of the insights derived from the analysis.

Figures 1 to 3 depict graphical representations of the associations among ICT, globalization, socioeconomic aspects, and governance quality within the three categories of welfare nations: welfare countries, aspiring welfare countries, and low-welfare countries.

For social welfare nations, the fit indices of the model demonstrate an acceptable fit with a Chi-square value of 12.239 and degrees of freedom of 5, resulting in a Chi-square/DF ratio of 2.448. This ratio is within the acceptable range, implying a satisfactory fit (Kline, 2015). The GFI at 0.951 and the CFI at 0.958 exceed the suggested threshold of 0.90, suggesting a robust model fit (Hu & Bentler, 1999). However, as shown in Figure 1, Panels A and B, the RMSEA value of 0.139 exceeds the acceptable upper threshold of 0.08, suggesting potential areas for improvement in the model fit (Browne & Cudeck, 1993).

Aspiring welfare countries demonstrate a comparably satisfactory model fit, albeit with certain cautionary signs. The Chi-square value is 15.351 with 5 degrees of freedom, yielding a Chi-square/DF ratio of 3.070, slightly surpassing the acceptable range yet still suggestive of a reasonable

Table 5
Model fit for welfare groups

Model Fit Classification	Welfare Country	Aspiring Welfare Country	Low Welfare Country
Chi-square	12.239	15.351	31.840
DF	5	5	5
P-value	0.032	0.009	0.000
Chi-square/DF	2.448	3.070	6.368
GFI	0.951	0.969	0.893
AGFI	0.795	0.870	0.550
CFI	0.958	0.974	0.924
RMSEA	0.139	0.117	0.268

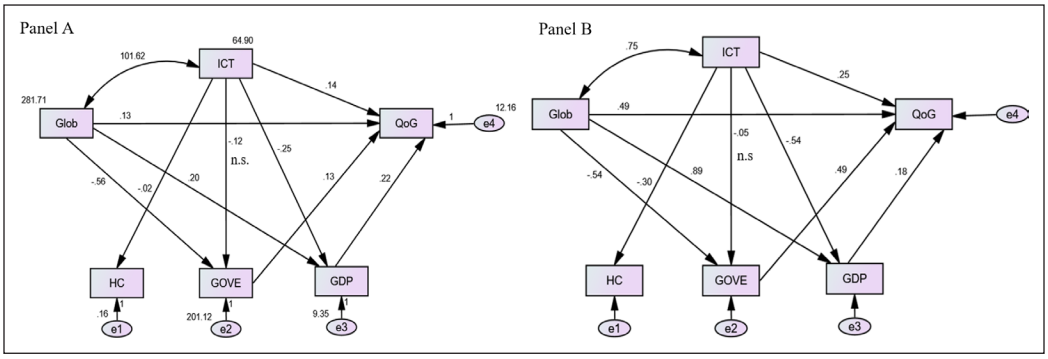

Figure 1. Welfare Country: Panel A—Unstandardized estimates; Panel B—Standardized estimates
Note. Chi-square = 12.239, DF = 5, *P* = 0.032, Chi-square/DF = 2.448; GFI = 0.951, AGFI = 0.795, CFI = 0.958; RMSEA = 0.139; Group = Welfare Country

fit (Schumacker & Lomax, 2010). GFI of 0.969 and the CFI of 0.974 are deemed outstanding, surpassing the threshold of 0.90 and indicating a robust fit (Hu & Bentler, 1999). With an RMSEA of 0.117, slightly above the optimal level, there is an implication of a moderate fit and a hint towards potential adjustments in the model for achieving a better fit (Steiger, 1990; Figure 2, Panels A and B).

For low-welfare countries, the model fit is less favorable. The Chi-square value is 31.840 with a degree of freedom of 5, leading to a Chi-square/DF ratio of 6.368, substantially higher than the acceptable range, indicating a poor fit (Kline, 2015). The GFI of 0.893 and CFI of 0.924, while close to acceptable levels, are slightly below the ideal thresholds, suggesting the model does not fit the data as well as in the other groups (Hu & Bentler, 1999). As shown in Figure 3, Panels A and B, the most concerning indicator is the RMSEA of 0.268, which is significantly above the acceptable limit, indicating a poor fit and suggesting that substantial revisions are necessary for this model to adequately represent the data (Browne & Cudeck, 1993).

These results demonstrate that the impact of ICT and globalization on governance is contingent upon the unique socioeconomic and institutional environments of individual nations. Nations with strong welfare systems tend to derive greater advantages from globalization and must prioritize institutional reforms to fully exploit the benefits of ICT. Countries with promising welfare systems exhibit the potential for adopting ICT but encounter difficulties in effectively leveraging globalization. Less affluent nations have the opportunity to utilize globalization and ICT to enhance governance, yet they must concentrate on enhancing institutional capability and developing human capital. This research emphasizes the significance of policies that are attuned to specific contexts, reaffirming and building upon the findings of earlier studies on ICT, globalization, and governance (Grimmelikhuijsen et al., 2017; Hossain, 2022; Leite, 2021).

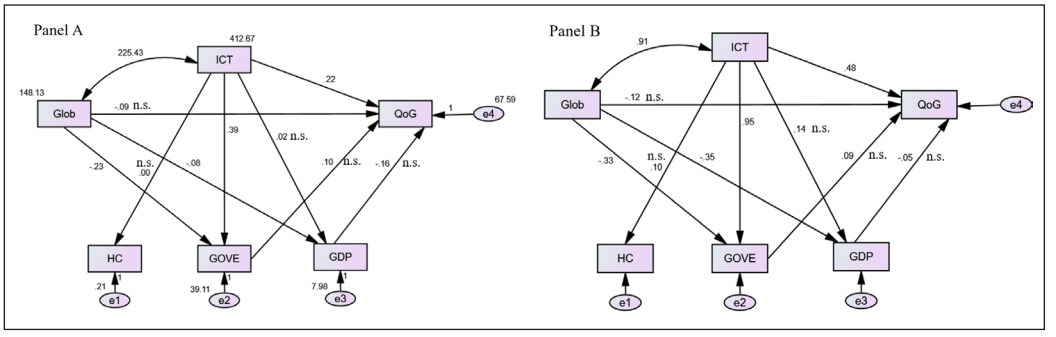

Figure 2. Aspiring Welfare: Panel A—Unstandardized estimates; Panel B—Standardized estimates
Note. Chi-square = 15.351, DF = 5, *P* = 0.009, Chi-square/DF = 3.070; GFI = 0.969, AGFI = 0.870, CFI = 0.974; RMSEA = 0.117; Group = Aspiring Welfare Country

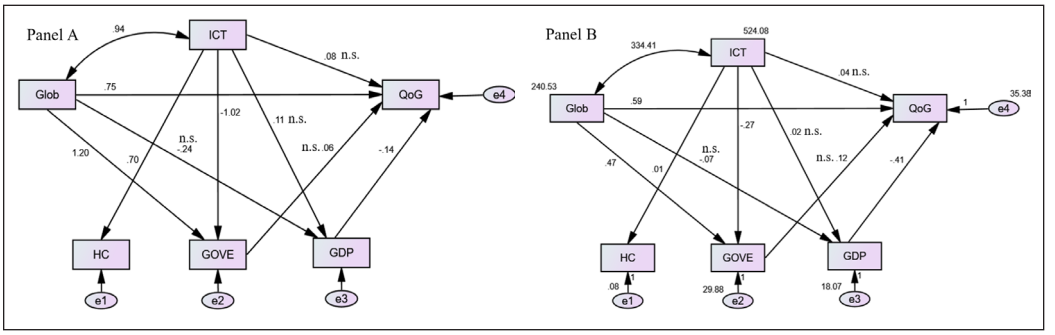

Figure 3. Low-Welfare Panel A—Unstandardized estimates; Panel B—Standardized estimates
Note. Chi-square = 31.840, DF = 5, *P* = 0.000, Chi-square/DF = 6.368; GFI = 0.893, AGFI = 0.550, CFI = 0.924; RMSEA = 0.268; Group = Low Welfare Country

DISCUSSIONS

In line with Institutional Theory, our findings endorse the notion that globalization can markedly improve governance by exposing nations to international best practices and norms, as evidenced by the positive influence of globalization on the quality of governance (QoG) in welfare and low-welfare nations (Gygli et al., 2019; Held & McGrew, 2007). This is consistent with the assertions of Dreher et al. (2009) and Thees and Erschbamer (2023), who emphasized the enhancements in governance resulting from increased global interconnectedness. However, the study also points out the intricacy and variability of these effects. For example, the favorable impact of ICT on QoG in aspiring welfare nations supports the Technology Acceptance Model (TAM), which highlights perceived usefulness and ease of use as catalysts for technology adoption and its advantages (Davis, 1989; Leite, 2021). Conversely, the adverse effect of ICT on human capital in welfare nations contradicts the optimistic perspectives on ICT's role in enhancing governance (Grimmelikhuijsen et al., 2017). Moreover, the discovery that economic

growth does not necessarily correspond to enhanced governance quality in low-welfare nations echoes Ross's (2015) observations on the potential downsides of resource abundance. It underlines the significance of institutional capability and efficient resource management (Acemoglu & Robinson, 2019). These diverse findings emphasize the necessity for tailored, context-specific strategies to effectively leverage ICT and globalization for governance enhancements, confirming the crucial role of socioeconomic and institutional contexts highlighted in prior studies (Hossain, 2022; Scott, 2020).

CONCLUSION

This study investigates the impact of ICT, globalization, and socioeconomic variables on the quality of governance (QoG) across different welfare settings within ASEAN countries. Through a comprehensive comparative analysis, the study categorizes eight countries into welfare, aspiring welfare, and low-welfare groups, collecting data from 1996 to 2022 from various sources. To investigate the relationship, this study deployed Structural Equation Modeling (SEM), which is able to offer robust estimations. The study's findings reveal that in welfare nations, globalization significantly enhances the QoG, while ICT adoption has mixed outcomes, negatively impacting human resources. In aspiring welfare nations, ICT helps increase government spending but faces challenges in the efficient implementation of globalization processes. In low-welfare nations, globalization positively influences both government spending and QoG, while ICT notably contributes to the development of human resources. The study also provides information about the model fit. The model of welfare and aspiring welfare nations display a strong fit compared to low-welfare nations. These findings emphasize the significance of developing context-specific strategies and policies to effectively harness the benefits of ICT and globalization in welfare-based ASEAN countries.

This research makes a significant contribution to the literature on governance, ICT, and globalization in the context of ASEAN countries. Through a comprehensive comparative analysis of welfare, aspiring welfare, and low-welfare countries, the study offers considerable insights into the relationship of these factors influencing QoG. It illustrates the diverse impacts of ICT and globalization on governance, highlighting their effectiveness, which is largely contingent on the socioeconomic and institutional contexts of each country. This contextual approach fills the gaps in the existing literature, which often neglects the varied effects of these variables. Moreover, the study integrates theoretical frameworks such as the Technology Acceptance Model (TAM), Institutional Theory, and the Resource-Based View (RBV) to explain the observed dynamics, thus enriching the theoretical comprehension of governance enhancements through ICT and globalization. By identifying the particular challenges and opportunities in each category of countries, the investigation

provides tailored policy recommendations that can assist policymakers in formulating more effective governance strategies. Furthermore, the results underline the importance of considering human capital development and institutional reforms in conjunction with technological and global integration efforts. This paper advances scholarly discourse and offers practical insights that can guide policy interventions aimed at improving QoG in diverse welfare settings in ASEAN.

Implications of the Study

Based on the study's findings, several policy recommendations are made for policymakers in welfare, aspiring welfare, and low-welfare countries. In welfare countries, policymakers should focus on integrating international best practices and standards into their governance frameworks by promoting stronger international partnerships and aligning domestic policies with global norms. Additionally, investments in digital infrastructure must be supported by cultural and institutional changes to fully utilize ICT advancements, alongside developing training initiatives to enhance the digital literacy of government personnel. The research emphasizes that in nations possessing well-developed welfare systems, the synchronization of ICT investments with governance frameworks has resulted in measurable advancements in transparency and operational efficiency. These findings support the necessity for ongoing enhancements to both digital and institutional infrastructures.

Balancing ICT adoption with effective globalization strategies in aspiring welfare countries is crucial. Policymakers should create environments that foster technological innovation and global integration by addressing institutional deficiencies, strengthening regulatory frameworks, and supporting e-governance endeavors to enhance transparency. The results emphasize that rectifying regulatory and institutional deficiencies has the potential to optimize the advantages arising from globalization and the adoption of ICT, especially within the framework of emerging welfare contexts.

For low-welfare nations, strategic investments in human capital and institutional capacity are vital. Policymakers should prioritize educational and healthcare programs to build a proficient workforce and leverage globalization to incorporate best practices and enhance transparency. The study emphasizes the argument that enhancing human capital through educational programs and healthcare provisions is fundamentally linked to improving governance quality, particularly in countries marked by low welfare, where institutional capacity often serves as a limiting factor.

Limitations and Recommendations for Future Research

Despite the significant contributions of this study on the effects of ICT, globalization, and socioeconomic factors on QoG in ASEAN countries, several limitations must be acknowledged. First, the study primarily relies on data from a limited number of

countries and periods, which may affect the generalizability of the findings. Adding more countries and different regions is suggested for empirical analysis. The relationship between these factors and QoG suggests that other unexamined variables, such as political stability and cultural aspects, might play significant roles. Additionally, the study's findings highlight disparities in the impact of ICT and globalization across different welfare groups, but it does not deeply explore the underlying institutional mechanisms driving these differences. Finally, the relatively short time frame of the study may not fully capture the long-term effects of ICT and globalization on governance, indicating a need for future research with extended longitudinal data to better understand these dynamics.

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APPENDIX

Welfare, aspiring and non-welfare information

Country	Mean of SOT[(1)] 1980-2021	Mean of WGI IQ[(2)] 1980–2020	HDI[(3)] 2021	Welfare Status[(4)]
Singapore	15.53	0.86	0.93	Welfare
Brunei Darussalam	--	0.75	0.82	Welfare
Malaysia	41.07	0.63	0.80	Aspiring welfare
Thailand	20.64	0.53	0.80	Aspiring welfare
Indonesia	42.97	0.40	0.70	Aspiring welfare
Vietnam	--	0.49	0.70	Aspiring welfare
Philippines	20.34	0.43	0.69	Low welfare
Myanmar	18.75	0.30	0.58	Low welfare

Notes.

[(1)] **SOT:** Subsidies and Other Transfers means subsidies, grants, and other social benefits, including all unrequited, non-repayable transfers on current account to private and public enterprises; grants to foreign governments, international organizations, and other government units; and social security, social assistance benefits, and employer social benefits in cash and in kind.

(*Source:* https://www.indexmundi.com/) The SOT data for Brunei Darussalam and Vietnam are not available; however, they still have welfare programs.

[(2)] **WGI IQ:** Worldwide Governance Indicators Institutional Quality. *Source*: World Bank

[(3)] **HDI:** Human Development Index (HDI), an index that measures key dimensions of human development. The three key dimensions are (1) a **long and healthy life**, measured by *life expectancy*; (2) a**ccess to education**, measured by *expected years of schooling of children at school-entry age and mean years of schooling* of the adult population, and (3) **a decent standard of living:** measured by *Gross National Income (GDP) per capita* adjusted for the price level of the country. Source: United Nations Development Program.

[(4)] **Welfare status:** The categorization of countries based on welfare often takes into account various indicators such as GDP per capita, HDI, social welfare programs, healthcare, education, income equality, and more. Categorizing countries into "welfare country," "aspiring welfare country," and "low welfare country" in this paper may not be a standard classification system. This research categorizes countries based on SOT, WGI IQ, and HDI, along with some justifications.