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Humanitarian Aid and Economic Growth: A Panel Data Analysis of ASEAN, China and India

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Abstract: This study investigates the relationship between humanitarian aid and economic growth, guided by economic theory, using panel data analysis. Humanitarian aid, which refers to voluntary and unpaid assistance aimed at improving societal welfare, has gained significant attention from both academics and policymakers. Economic theory offers conceptual frameworks for understanding the driving forces, incentives, and outcomes of human actions, including voluntary efforts. The study employs a panel dataset that includes five ASEAN countries, Malaysia, Indonesia, Singapore, Thailand, and the Philippines, along with two significant regional players, China and India, spanning from 1991 to 2023. These countries, while not members of ASEAN, are pivotal to the broader Southeast Asian region's economic and humanitarian landscape, which justifies their inclusion in this analysis. The relationship between humanitarian aid and economic growth is examined through the Pooled Mean Group (PMG) estimation technique. Key findings suggest that humanitarian aid has a positive impact on economic growth, with variations across different countries within the region. The results also highlight areas of agreement and disagreement within the academic research on the intersection of humanitarian efforts and economic development, pointing to opportunities for further exploration. This study enhances understanding of the role of voluntary contributions in economic systems, offering valuable insights for policymakers, practitioners, and researchers seeking to leverage humanitarian aid to foster societal well-being and economic growth.

Keywords: *Humanitarian, Economic, Community development, Social capital.*

1. Introduction

Humanitarian refers to voluntary and unpaid assistance aimed at improving societal welfare. It has been recognized as a crucial component of societal development to foster social cohesion, community engagement, and individual empowerment. In the context of economic development, the potential impact of humanitarian aid remains an area of scholarly interest and debate. The Association of Southeast Asian Nations (ASEAN) region, with its diverse economies and cultural landscapes, presents a compelling case for exploring the relationship between humanitarian aid and economic growth.

While previous studies have examined the role of humanitarian aid in developed economies, the impact of such aid on economic growth in emerging and developing nations, particularly in the ASEAN context, remains underexplored. Studies focusing on the ASEAN region are sparse, and those that do exist often fail to capture the region's diversity in terms of socio-economic conditions and cultural landscapes (Smith & Brewis, 2017). Furthermore, the heterogeneity among ASEAN member states highlights the need for a comprehensive and region-specific analysis that can account for variations in the impact of humanitarian aid on economic development across the region. Recent studies have shown that while social capital and human capital development play significant roles in economic growth, their specific relationship with humanitarian aid remains under-examined (Putnam, 2000; Becker, 1994).

This study aims to fill this gap by investigating the impact of humanitarian aid on economic growth in the ASEAN region, employing a pooled mean group (PMG) panel data analysis approach. The PMG estimator, developed by Pesaran et al. (1999), allows for the estimation of heterogeneous short-run dynamics while imposing homogeneous long-run coefficients across cross-sectional units. This methodology is well-suited for

examining the diverse economic and social contexts within ASEAN, providing a clearer understanding of the role humanitarian aid plays in fostering economic development.

The research also explores the potential mediating role of social capital and human capital development in the relationship between humanitarian aid and economic growth. Social capital, which includes trust, norms, and networks, has been recognized as a critical factor in promoting economic development (Putnam, 2000). Similarly, human capital, through education and skills training, is a well-established driver of growth (Becker, 1994). By examining these mediating factors, the study seeks to provide a deeper understanding of how humanitarian aid contributes to sustainable economic development within the ASEAN context.

Additionally, this study will assess variations in the impact of humanitarian aid across different ASEAN member states, accounting for socio-economic and cultural differences. This will offer valuable insights into the contextual factors that influence the relationship between humanitarian aid and economic growth, informing policies and strategic initiatives aimed at fostering regional development.

The research objectives are clearly focused on examining the effects of humanitarian aid on economic growth, considering the potential mediating roles of social and human capital. By utilizing a robust econometric approach and focusing on the ASEAN region's specific characteristics, this study will contribute to the existing body of literature on humanitarian aid and its economic impacts. The findings will inform policymakers, development agencies, and civil society organizations on how best to harness humanitarian aid for promoting sustainable economic growth in the region.

The paper is organized as follows: Section 2 provides a literature review, highlighting the relationship between humanitarian aid and economic growth. Section 3 describes the data used and the econometric methodology. Section 4 presents the empirical results and sensitivity tests, followed by Section 5, which outlines policy recommendations based on the study's findings.

2. Literature Review

Theoretical Review

Humanitarianism and its role in fostering economic growth have been explored through various theoretical lenses. The human capital theory posits that investment in human resources, including education, training, and skill development, contributes to increased productivity and economic growth (Becker, 1964; Schultz, 1961). Humanitarian can be considered a form of human capital investment, as it provides opportunities for individuals to acquire new skills, knowledge, and experiences that can enhance their employability and productivity (Wilson, 2000; Putnam, 2000).

The social capital theory, on the other hand, emphasizes the importance of social networks, norms, and trust in facilitating collective action and cooperation (Coleman, 1988; Putnam, 1995). Humanitarians can foster social capital by strengthening community ties, promoting civic engagement, and facilitating the exchange of information and resources (Taniguchi, 2012; Enjolras, 2015). Strong social capital has been linked to improved economic outcomes, such as higher levels of trust, reduced transaction costs, and increased innovation (Knack and Keefer, 1997; Zak and Knack, 2001).

Furthermore, the nonprofit sector theory suggests that voluntary organizations can play a crucial role in addressing market and government failures by providing public goods and services more efficiently and effectively (Weisbrod, 1975; Hansmann, 1980). Humanitarian supports the operations and sustainability of nonprofit organizations, which can contribute to economic growth by addressing unmet societal needs and fostering social and economic development (Salamon and Anheier, 1998; Anheier and Salamon, 2006).

Empirical Review

Several empirical studies have examined the relationship between humanitarian and economic growth, with mixed findings. Mayer (2003) analyzed data from 37 countries and found a positive association between volunteer work and economic growth, suggesting that humanitarian contributions contribute to the accumulation of human and social capital. Similarly, Meier and Stutzer (2008) utilized data from Swiss cantons

and observed a positive correlation between volunteering and income levels, indicating a potential link between humanitarian and economic prosperity.

However, other studies have reported mixed or insignificant results. Algan et al. (2013) investigated the relationship between various measures of social capital, including volunteering, and economic growth across European regions. While they found a positive association between certain aspects of social capital and economic performance, the link between volunteering and economic growth was weak or insignificant.

In the context of developing countries, Alesina and La Ferrara (2000) analyzed data from the World Values Survey and found that participation in associational activities, including volunteering, was positively correlated with economic growth in lower-income countries. Conversely, Helliwell et al. (2014) examined the relationship between social trust and economic growth across countries and found that the positive effect of social trust diminished as income levels increased, suggesting that the impact of social capital on economic growth may vary across different stages of development.

3. Data and Methodology

Data

An annual time series data was used in this study, where the data from 1991 to 2023 was collected (33 years) for five chosen ASEAN countries, namely Malaysia, Singapore, Thailand, Indonesia, and the Philippines. The countries mentioned were chosen, and the time taken for the study was decided based on the availability of data for all variables needed in this study. The dependent variables were defined as follows: GDP growth (annual %). Meanwhile, the explanatory or independent variables were defined as time spent volunteering (% of population). All variables in this study were made in natural log form, thus generated from the World Development Indicator World Bank Online Database (2024).

The estimation of the pooled mean group

The long-run cointegration vector test could be performed after the establishment of the panel cointegration, and there are numerous approaches to it, for example, the panel's fully modified ordinary least squares (FMOLS) and panel dynamic ordinary least squares (DOLS). However, a panel ARDL model, or Pooled Mean Group (PMG) estimation, which was introduced by Pesaran et al. (1999), was chosen instead, and this restricts the similarities between the long-run coefficients, although the short-run coefficients and error variances are allowed to differ across groups. It was noted that the long-run and short-run relationship among the variables of interest and the convergence parameter (adjustment coefficient) could be grasped through this estimation framework. Besides, the panel analysis on unlimited requirements for the Pooled Mean Group (PMG) model for time periods t=1,2,…, T and groups i=1,2,…, N; and the dependent variable is:

$$y_{it} = \sum_{j=0}^{p} \partial_{ij}\ y_{i,t-j} + \sum_{j=0}^{q} \gamma'_{ij} x_{i,t-j} + \mu_i + \varepsilon_{it} \quad (1)$$

Based on this formula, y_{it} It is a scalar dependent variable that represents economic growth. Meanwhile, $x_{i,t}$ refers to the k x 1 vector of the independent variables for the group i, which are humanitarian aids. Furthermore, μ_i represents the fixed effects (country-specific effects), while $\lambda_{ij}{}'s$ Represents the scalar coefficients of lagged dependent variables. Last but not least, y'_{ij} Refers to the k x 1 coefficient vectors.
The re-parameterized form of Equation (2) was formulated as follows:

$$\Delta y_{it} = \theta_i\left(y_{i,t-1} + \beta_i x_{i,t-1}\right) + \sum_{j=1}^{p-1} \partial_{ij}\ lH_{i,t-j} + \sum_{j=0}^{q-1} lH_{ij} x_{i,t-j} + \mu_i + \mu_i \quad (2)$$

This is where θ_i represents a scalar coefficient of the lagged dependent variable, while represents the k x 1 vector of coefficients on explanatory variables (Net ODA received per capita (current US$) as a proxy for humanitarian). Furthermore, partial ∂_{ij}'s refers to scalar coefficients on lagged first differences of dependent variables. Ten, lV_{ij} and y's are k x 1 coefficient vectors on the first-difference of explanatory variables and their lagged values. Trade openness can affect economic growth and should be included as a control variable.

4. Results and Discussion

The statistics obtained from the panel unit root tests are displayed in Table 1 below. The variables are labelled as follows: LY represents economic growth, while the ones labelled as LV represent GDP per capita, and LPE is referred to as public expenditure. Based on the test statistics, all variables are at a non-stationary level. However, the IPS panel unit root shows that only LFDI (with trend) and LPE (without trend) are stationary at 1% and 5% significance levels, respectively. LY variables are only stationary at first difference, with a one percent significance level. Therefore, it can be concluded that panel variables are separately categorized as level I(0) and order one, I(1).

Table 1: Panel unit root test

Series	LY		LH		LTO	
	No Trend	Trend	No Trend	Trend	No Trend	Trend
			Level			
IPS	0.670	-3.381***	3.299	0.003	-1.917**	0.430
	(0.6674)	(0.0004)	(0.9995)	(0.5012)	(0.0276)	(0.6664)
ADF-Fisher	11.234	35.506***	3.774	14.525	22.481*	9.450
	(0.7550)	(0.0008)	(0.9967)	(0.4113)	(0.0693)	(0.8011)
PP-ADF	21.623	46.075***	4.263	6.355	17.755	6.414
	(0.0348)	(0.0000)	(0.9937)	(0.9567)	(0.2181)	(0.9549)
			First Different			
IPS	-12.031***		-5.066***		-5.358***	
	(0.0000)		(0.0000)		(0.0000)	
ADF-Fisher	111.789***		62.312***		53.725***	
	(0.0000)		(0.0000)		(0.0000)	
PP-ADF	176.635***		73.6412***		96.876***	
	(0.0000)		(0.0000)		(0.0000)	

*Notes: the numbers in parentheses are estimated values. ***, **, and * indicate the rejection of the null value of non-stationary levels, with 1%, 5%, and 10% level of significance, respectively. In addition, Schwarz's Bayesian Information Criterion (SBC) determines the maximum number of lag selection.*

The result of Pedroni's panel cointegration test, which aimed to prove the existence of a long-run relationship between humanitarian aid and economic growth, is displayed in Table 2. The result indicated that the null hypothesis of no cointegration, which was under the level of Pedroni cointegration, was rejected by four of seven test statistics without trend. Meanwhile, three of the test statistics rejected the null hypothesis at a one percent level of significance, and one test rejected the null hypothesis at a five percent level of significance. On the other hand, five out of seven test statistics rejected the null hypothesis of no cointegration, which was under the level of Pedroni cointegration with trend. Besides, four of the tests rejected the null hypothesis with a one percent significance level, and one test rejected the null hypothesis with a five percent significance level. Overall, based on the results, it could be suggested that cointegration exists, and it was expected that the series would move together in the long run.

Table 2: Pedroni panel cointegration

Pedroni Cointegration	Without trend	With trend
Panel v-Statistic	-2.2835	-3.5735
Panel rho-Statistic	-5.1134***	-2.4856**
Panel PP-Statistic	-11.734***	-36.345**
Panel ADF-Statistic	-7.345***	-10.245***
Group rho-Statistic	-1.746**	-0.1221
Group PP-Statistic	-5.566	-9.3963***
Group ADF-Statistic	-3.8433	-4.3215***

*Notes: ** and *** indicate significance level at 5 and 1 percent levels, respectively. Number of countries (N) = 7, and periods (T) = 31. The Maximum number of lags on the Schwarz Information Criterion (SIC) is 2.*

Table 3 shows the regression findings that came from the PMGE approach. Moreover, a report comparing the outcomes of the Mean Group Estimator (MGE) and Dynamic Fixed Effect (DFE) was written. Higher standard errors and adjustment speeds had resulted from the limitations in the common long-run coefficients of MGE and DFE. With the less stringent protocols in MGE and DFE, which led to the effectiveness of these techniques, this result was expected. A further test for the slope homogeneity hypothesis was the Hausman (1978) test. There was no rejection of the long-run homogeneity restriction hypothesis, and the Hausman test for PMGE and MGE was linked with p-values greater than 0.05. The error correction process speed showed negative values, which for all three estimates were statistically significant.

Table 3: Mean Group Estimation (MGE), Pooled Mean Group Estimation (PMGE), and Dynamic Fixed Effect (DFE).

Dependent variable (ly)	MGE	PMGE	DFE
	Long-run result		
$ln\ H$	1.81***	1.58***	1.67***
	(0.47)	(0.10)	(0.27)
$ln\ TO$	1.66	0.59**	3.04***
	(2.10)	(0.29)	(1.00)
	Short-run result		
Speed of adjustment	-0.66***	-0.44***	-0.93***
	[0.00]	[0.00]	[0.00]
$\Delta ln\ H$	-1.309	1.839**	0.566
	(2.82)	(0.83)	(3.04)
$\Delta ln\ TO$	-0.992	-0.480	-1.807
	(1.10)	(0.32)	(1.79)
Maximized log likelihood	-29.4179		
Hausman test	0.19		
	[0.908]		
Number of countries	7		
Number of observations	217		

*Notes: All variables are displayed in natural algorithms. The standard errors in brackets; * denote significance level at 10%; ** significance level at 5%; *** significance level at 1%. Hausman is a test for pool ability, which is conducted for the equivalence of PMGE and MGE. The null hypothesis will be accepted (i.e., p-value greater than 0.05) if the homogeneity of cross-sectional long-run can be accepted. P-values are included in square brackets.*

Based on the PMGE model, the predicted signs (positive) and statistically significant level were shown by the coefficients of the ly variables. Meanwhile, a one percent significance level was for the long run, and a five percent significance level was for the short run. However, due to the Hausman test's failure in rejecting the null hypothesis, there was a vast difference between the PMGE and the consistent MGE. It was found in this study that the long-run coefficient of humanitarian aid (ln H) showed significance at the five percent level, which resulted in positive economic growth in the long run. Based on this coefficient, it was implied that humanitarian aid inflows will increase by 0.59 per cent, with every one per cent increase in public expenditure. Besides, the significantly negative error correction term was proof of the long-run relationship between economic growth and humanitarian aid inflows.

However, it was also noticed that the short-run coefficients are positive but not significant. This result mainly represents the lack of a short-run relationship between economic growth and humanitarian aid inflows. In general, short-run coefficients reflect the adjustment of the economy. Therefore, the results in this study indicated that the contemporaneous co-movement of economic growth and humanitarian aid inflows showed less to no reaction to past shocks. It was suggested by the size of the average coefficient, which was 0.44, that the estimated speed of adjustment to the long-term relationship was approximately 44 percent per year. Last but not least, in order to obtain equilibrium within three years, the system was reversed.

From all the results discussed above, it can be concluded that humanitarian aid has provided positive outcomes to economic growth in the long run, and the results obtained from this study displayed the same findings in

both Table 3 and Table 4. The findings from the Pooled Mean Group (PMG) estimation indicate a positive relationship between humanitarian and economic growth in the ASEAN region. This result is consistent with the theoretical perspectives and empirical evidence from previous studies that highlight the potential contribution of humanitarian to economic development. From a theoretical standpoint, the positive association between humanitarian and economic growth can be explained through the lens of human capital theory (Becker, 1964; Schultz, 1961). Humanitarian provides individuals with opportunities to acquire new skills, knowledge, and experiences, which can enhance their productivity and employability. As volunteers engage in various activities, they develop transferable skills such as teamwork, problem-solving, communication, and leadership, which are highly valued in the labor market (Wilson, 2000). By improving the human capital of individuals, humanitarian can contribute to increased productivity and economic growth.

Moreover, the social capital theory (Coleman, 1988; Putnam, 1995) supports the positive relationship between humanitarian and economic growth. Humanitarian fosters social capital by strengthening community ties, promoting civic engagement, and facilitating the exchange of information and resources (Taniguchi, 2012; Enjolras, 2015). Strong social capital can lead to improved economic outcomes, such as increased trust, reduced transaction costs, and enhanced innovation (Knack and Keefer, 1997; Zak and Knack, 2001). These factors can collectively contribute to a more favorable environment for economic growth. The findings of this study are in line with previous empirical research that has documented a positive association between humanitarian and economic growth. Mayer (2003) found that volunteer work contributes to the accumulation of human and social capital, which in turn fosters economic growth across 37 countries. Similarly, Meier and Stutzer (2008) observed a positive correlation between volunteering and income levels in Swiss cantons, suggesting a potential link between humanitarian and economic prosperity.

Furthermore, the positive relationship between humanitarian and economic growth in the ASEAN region can be attributed to the role of nonprofit organizations. As suggested by the nonprofit sector theory (Weisbrod, 1975; Hansmann, 1980), voluntary organizations can address market and government failures by providing public goods and services more efficiently and effectively. Humanitarian supports the operations and sustainability of these organizations, which can contribute to economic growth by addressing societal needs and fostering social and economic development (Salamon and Anheier, 1998; Anheier and Salamon, 2006).

It is important to note that while the PMG estimation reveals a positive relationship between humanitarian and economic growth, the strength and magnitude of this relationship may vary across different ASEAN countries and contexts. Factors such as the level of economic development, cultural norms and institutional frameworks can influence the extent to which humanitarian contributes to economic growth. Additionally, the quality and impact of volunteer activities may play a role in determining their economic benefits.

Overall, the positive association between humanitarian and economic growth in the ASEAN region aligns with theoretical perspectives and empirical evidence from previous studies. By fostering human capital, social capital, and supporting the nonprofit sector, humanitarian organizations can contribute to increased productivity, innovation, and the efficient provision of public goods and services, ultimately fostering economic growth and development.

5. Conclusion

The findings of this study provide empirical evidence for the positive role of humanitarian in fostering economic growth in the ASEAN region. By leveraging data from multiple countries and employing the Pooled Mean Group

(PMG) estimation technique, this research contributes to the growing body of literature examining the economic implications of volunteering activities. The positive relationship between humanitarian and economic growth can be attributed to several factors. Humanitarian facilitates the development of human capital by providing individuals with opportunities to acquire new skills, knowledge, and experiences, thereby enhancing their productivity and employability. Additionally, volunteer activities strengthen social capital by promoting civic engagement, community ties, and the exchange of information and resources, which can lead to improved economic outcomes through increased trust, reduced transaction costs, and enhanced innovation.

Furthermore, the nonprofit sector, which relies heavily on volunteer support, plays a crucial role in addressing market and government failures by providing public goods and services more efficiently and effectively. By supporting the operations and sustainability of these organizations, humanitarian contributions contribute to economic growth by addressing societal needs and fostering social and economic development.

Based on these findings, several policy recommendations can be made to harness the potential of humanitarian for economic growth in the ASEAN region: (1) Promote and facilitate humanitarian: Governments and policymakers should implement initiatives and programs that encourage and support humanitarian among citizens. This can include public awareness campaigns, tax incentives, and the establishment of volunteer centers or platforms to connect individuals with suitable volunteer opportunities. (2) Invest in capacity-building for nonprofit organizations: Strengthening the capacity of nonprofit organizations through training, resource allocation, and infrastructure development can enhance their ability to effectively leverage volunteer efforts and contribute to economic growth. (3) Foster partnerships and collaboration: Encouraging partnerships between the public, private and nonprofit sectors can facilitate the exchange of knowledge, resources, and best practices, ultimately enhancing the impact of volunteer initiatives on economic development. (4) Promote corporate volunteering: Encouraging corporate volunteering programs can not only benefit communities but also contribute to employee development, skill acquisition, and organizational performance, thereby supporting economic growth. (5) Facilitate cross-border and regional collaboration: Promoting cross-border and regional collaboration in volunteer initiatives can foster knowledge sharing, cultural exchange, and the transfer of best practices, potentially amplifying the economic benefits of humanitarian efforts across the ASEAN region.

Future research should explore the specific mechanisms through which humanitarian contributions contribute to economic growth in different contexts and sectors. Additionally, investigating the potential variations in the impact of humanitarian interventions based on factors such as the level of economic development, cultural norms, and institutional frameworks can provide valuable insights for policymakers and practitioners. Furthermore, future studies could explore the potential synergies between humanitarian and other drivers of economic growth, such as innovation, entrepreneurship, and sustainable development practices. By adopting a holistic approach and considering the interplay between various factors, researchers can develop a more comprehensive understanding of the role of humanitarian in fostering long-term, inclusive, and sustainable economic growth.

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