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Globalisation and Economic Development: Evidence from G20 Countries

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ABSTRACT

The connection between globalisation and economic development has been a topic of wide debate among scholars and policymakers over the years. The World Bank views globalisation as a potential tool for fostering economic development, promoting inclusion, and reducing poverty worldwide. The G20, or Group of Twenty, is an international forum comprising 19 countries and the European Union, representing 85% of the world's GDP, over 75% of global trade, and two-thirds of the world's population. Therefore, examining the impact of globalisation on G20 countries is highly important. The current research aims to examine both the level of globalisation and its impact on economic development across G20 countries, excluding the European Union and the African Union, from 1990 to 2022. This study employs a balanced panel data approach and relies primarily on secondary data sourced from the World Bank. It employed descriptive statistics, correlation analysis, and both fixed and random effects regression models to investigate the relationship between various dimensions of globalisation namely economic, political, and social and key indicators of economic development, such as GDP per capita(GDP_PC), the Human Development Index (HDI), Foreign Direct Investment (FDI), Political Stability Index(PSI), Gini Income Inequality Index(GII) and Unemployment. The study's findings indicate that economic and social globalisation, along with the HDI and FDI, collectively have a statistically significant positive impact on economic development. We observed that political globalisation demonstrates a negative association with GDP per capita, highlighting the complex and varied impacts of globalisation across its different dimensions. Furthermore, the results indicate that both unemployment and income inequality tend to have a negative correlation with economic growth, although some of the relationships are not statistically significant. This study addresses a gap in the literature by examining the impact of globalisation across the diverse economies of the G20. It provides policymakers with empirical insights, enhancing their understanding of how global forces influence national economies, social structures, and governance frameworks.

Keywords: *Globalisation, Economic Development, GDP Per Capita, G-20 Countries.*

INTRODUCTION

Globalisation has become one of the most significant factors influencing the modern world, radically changing the way economies, cultures, and political systems are organised worldwide. Globalisation, defined as the growing interdependence and integration of national economies through the flow of capital, people, goods, and services, has accelerated dramatically in recent decades due to advancements in communication and transportation, as well as the liberalisation of trade and investment regulations. Almost every area of societal growth is influenced by its complex

nature, which extends beyond economic dimensions to encompass social, cultural, and political elements. Numerous perspectives and methods have been used to analyse globalisation; according to Albrow and King (1990), globalisation refers to "all the processes by which people all over the world are integrated into a single society" whereas Hebron et al. (2016) and Graham (2006) define globalisation broadly, covering economic, political, cultural, and social dimensions. According to Graham (2006, p. 45), "Globalisation is the process by which the world is integrated into one economic space through international trade, the internationalisation of production and financial markets".

Globalisation has been spearheaded by the Group of Twenty (G20), which comprises the top economies in the world, including 19 sovereign nations and the European Union. The vast majority of worldwide economic activity is accounted for by the G20 group of countries, which includes both developed and emerging economies. They make up around 85% of global GDP, 75% of global exports, and two-thirds of the world's population. The G20 nations are ideally positioned to examine the relationship between global integration and economic growth, as they are significant hubs for international trade, investment, and innovation. The G20, the world's premier economic forum, plays a crucial role in shaping the global economic agenda and promoting sustainable economic development.

It is essential to comprehend how globalisation affects economic development: Since the consequences of globalisation on economic development are still unknown in today's interconnected world, research is crucial. Globalisation fosters economic growth, according to neoclassical economists. On the other hand, detractors contend that economic instability may result from globalisation. According to empirical data, globalisation has significantly benefited economic development by expanding access to capital and technology, creating new markets, and boosting productivity. G20 countries have been able to capitalise on their comparative advantages, attain greater growth rates, and, in many cases, lower poverty and raise living standards thanks to increased trade and foreign direct investment (FDI). This integration is not without its difficulties, though. Rising wealth disparities, unequal benefit distribution, environmental degradation, and heightened vulnerability to external shocks and crises have all been linked to the rapid pace of global economic change.

Atif et al. (2012) found that economic liberalisation, which is fueled by globalisation, tends to widen the income gap. Gozgor et al. (2017) examined the effects of globalisation on wealth redistribution and income inequality and concluded that globalisation is linked to increased inequality and redistribution. The results of studies on how globalisation affects economic growth are not entirely consistent. According to some research, political globalisation has little to no effect on economic growth (Dreher, 2006; Ying et al., 2014). On the other hand, political globalisation has a favourable impact on economic growth, according to Destek (2020) and Nguyen et al. (2021). Economic globalisation has been found to affect economic growth positively by Dreher (2006), Ying et al. (2014), and Rao et al. (2011). However, according to Kilic (2015), while globalisation helps some countries thrive and create economic opportunities, it also exacerbates poverty, inequality, and economic decline in other countries. Rich people may gain more from trade openness than the poor in emerging nations because they have easier access to cutting-edge technologies, which gives them a competitive advantage. There is also disagreement on the effects of social globalisation. Dreher (2006) and Jensen et al. (2011) found a positive effect, whereas Suci et al. (2015) and Nguyen et al. (2021) found no significant influence, while Ying et al. (2014) found an adverse effect. Globalisation and economic growth have a complicated and situation-specific interaction overall.

In light of this, the current study utilises balanced panel data from 1990 to 2022 to thoroughly investigate how economic, social, and political globalisation has affected economic development in the G20 nations (excluding the European Union and the African Union). Examining how various globalisation indicators—such as EGI, PGI, SGI, HDI, PSI, FDI, and others—impact economic growth aims to advance knowledge of the complex issues. Policymakers, economists, and academics seeking to understand the complexities of globalisation will find great value in the study's conclusions.

The following is how this document is structured: After the introduction, Section 2 thoroughly examines the literature on globalisation and economic growth, and Section 3 explains the methodological approach used in this study. Findings and Discussions are presented in Section 4, and the conclusion and policy implications of the empirical results are presented in Section 5.

The rationale of the sample Selection

Studying the G20 countries provides a comprehensive understanding of the impact of globalisation on economic growth due to their representativeness, diverse economic systems, varying levels of globalisation intensity, and data availability. The G20 countries account for 85% of global GDP, 75% of international trade, and two-thirds of the world's population, making them a suitable sample for analysis. The G20 countries play a crucial role in shaping global economic policies related to trade, investment, and economic development.

Furthermore, the G20 countries exhibit varying levels of globalisation intensity, which allows us to discern the effects of globalisation on economic growth across different degrees of global integration. By examining the relationship between globalisation and economic growth in these countries, this study informs policy decisions. It contributes to developing effective economic strategies, addressing research questions on the impact of globalisation on economic growth, its varying effects across different dimensions and countries, and the differences in its impact across economies.

Significance of the study

This study is noteworthy because it is the first to examine a highly interconnected region such as the G20 (apart from the European Union and the African Union), a field that has not received enough attention in the literature too far and has helped to overcome the shortcomings of earlier research. Although the general consequences of globalisation have been extensively debated, there have been targeted empirical studies that concentrate on this significant group of economies. Understanding how globalisation affects economic development is essential for both academic advancement and governance, as the G20 nations collectively account for a dominating proportion of global economic output, trade, and investment flows. Using a balanced panel data methodology, this study provides thorough evidence from 1990 to 2022, providing important insights into the intricate relationship between economic progress and globalisation. In the end, the outcomes enhance quality of life and foster innovation, which benefits individuals, organisations, and society as a whole. The study's conclusions also assist policymakers in formulating well-informed strategies that leverage globalisation to ensure inclusive and balanced development within the G20 framework by fostering sustainable economic development while mitigating any potential drawbacks.

Literature Review

The relationship between economic growth and globalisation is a highly debated topic. According to some research, globalisation enhances economic growth by increasing capital investment, facilitating technological improvements, enhancing factor productivity, and allocating local resources more efficiently. Conversely, some argue that nations with weak governance, unstable political systems, diminished sovereignty, deteriorating cultural identities, resource and labour exploitation, or those that have become unduly dependent on unproductive activities due to globalisation may experience negative effects on economic growth. The impact of globalisation on economic development in both developed and developing nations has been the subject of several empirical studies. The idea that globalisation accelerates economic growth is supported by a substantial body of research

The KOF (Konjunkturforschungsstelle) globalisation index, which includes three different dimensions, namely economic, social, and political globalisation, was introduced by Dreher (2006). It used a dynamic panel dataset spanning 123 nations from 1970 to 2000 to examine the connection between economic growth and globalisation. Higher scores indicate greater globalisation on the scale, which runs from 0 to 100. According to the study, social and economic factors were positively impacted, but political factors had no discernible effect. This finding is further corroborated by research from Rao et al. (2011), Villaverde et al. (2011), and Samimi et al. (2014), which examined the influence of globalisation on economic growth using the KOF globalisation Index and found a positive effect.

Furthermore, Polasek et al. (2013) examined how globalisation affected regional growth in 27 EU nations between 2001 and 2006 and discovered that globalisation-related factors, like trade and foreign direct investment, boosted economic growth in many areas. Other research has also demonstrated a strong and positive correlation between globalisation and the economic growth of nations around the world. These studies include Fischer et al. (2003), Chang et al. (2010), Pelegrinova et al. (2013), Deluna Jr. et al. (2014), and Reeshan et al. (2017). According to Hasan (2019), Ahmad (2019), and Xu et al. (2021), globalisation also promotes economic development and growth.

According to Dollar (2001), trade liberalisation and foreign direct investment propel modernisation in developing nations, which in turn spurs faster growth. This suggests that globalisation and growth are intertwined. According to research by Edwards (1998), Sachs et al. (1995), Harrison et al. (1996), Dollar & Kraay (2004), and Crafts (2004), many economists revealed that openness to international commerce can hasten economic growth. Chang et al. (2009) found that improved public infrastructure, more developed financial markets, reduced inflation, and stronger human capital investment can all enhance the growth-promoting effects of trade openness.

According to David et al. (2001), globalisation has reversed a long-standing tendency by promoting growth in poorer nations, lowering poverty rates, and somewhat reducing global inequality since 1980. In a broad sample of 60 countries, Zhou et al. (2011) discovered that globalisation lowers income disparity within nations. However, Bukhari and Munir (2016) found that while financial globalisation has the reverse effect, trade and technology globalisation reduce income disparity in

Asian nations. Furthermore, globalisation has been shown to considerably increase income disparity by Fischer et al. (2003), Bergh et al. (2010), and Heimberger (2020).

In the study of the effects of globalisation on economic development in eight nations namely Brazil, China, India, South Korea, Malaysia, Singapore, Iran, and Turkey—Moghaddam et al. (2012) discovered that higher levels of foreign direct investment (FDI) relative to GDP had a positive effect on both international and regional trade. Both Li et al. (2019) and Borensztein et al. (1998) emphasised the beneficial effects of foreign direct investment (FDI) on economic growth. Li et al. (2019) examined 51 developing nations between 1984 and 2010 and found a significant and positive impact of FDI on the growth of total factor productivity (TFP). Borensztein et al. (1998) found that FDI promotes growth only when a host country has sufficient human capital.

By arguing that capital is not a crucial component and that large capital flows from rich to poor countries are unlikely, Krugman et al. (1993) refute the notion that international financial integration propels economic development and raise the possibility that financial openness may not accelerate economic growth in developing nations. According to Calderón et al. (2010), the growth benefits of greater trade openness are contingent upon advancements in key structural sectors, such as infrastructure, innovation, and education. This suggests that the potential benefits of trade openness may be constrained in the absence of these breakthroughs.

Research Gap

A limited understanding of the diverse and complex consequences of globalisation across these distinct economies is the reason for the considerable research gap in investigating how it affects economic development in G20 countries (excluding the European Union and the African Union). Even though globalisation is becoming increasingly significant, there is a lack of thorough longitudinal studies that span the years 1990–2022, which is crucial for documenting how globalisation is changing in the face of shifting circumstances. The majority of research on globalisation and economic growth currently available is fragmented, focusing on specific nations or regions rather than the G20 as a whole. The G20 countries account for a substantial portion of the world's GDP and trade, making it vital to fill this research gap. In addition, understanding how globalisation affects economic development is crucial because it can have various effects and provide valuable insights that inform policy decisions supporting equitable and sustainable economic development. By investigating the emerging disciplines that are impacting the global economy and offering a comprehensive analysis of the relationship between globalisation and economic development, this study aims to fill these research gaps.

Objective:

1 To see the status of globalisation and economic development in G20 countries.

2 To investigate the impact of globalisation on economic development in G20 countries.

Research Methodology

A quantitative approach was used in the research methodology to examine the current state of globalisation and economic development and the effects of globalisation on economic development. The data sample of G20 members, which included 19 sovereign nations, namely Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the United Kingdom, and the United States was examined for the period 1990–2022. Because there was enough data available to support the analysis, the study's sample period began in 1990 and lasted in 2022. Balanced panel data, which simulated a situation in which every cross-sectional unit had an equal amount of time series observations, was the estimation technique employed in the study. The study relied on secondary data, and the World Bank provided a comprehensive and varied array of data for all categories. The World Bank's annual indices of economic, political, social, and globalisation, as well as FDI, HDI, and unemployment, comprised the data. To achieve the study's goal, a correlation matrix, random-effects regression models, fixed-effects regression models, and descriptive statistics were employed. The main characteristics of globalisation, trends, and indicators of economic development during the study period were compiled using descriptive statistics, which served as a basis for comprehending the data and directing further statistical analyses. The primary analytical technique employed was panel data regression, utilising both fixed effects and random effects models to ensure the reliability and consistency of the results. A correlation matrix was then created to investigate the bivariate correlations between the variables involved. The objective was to assess the current state of globalisation and economic development, and examine how globalisation has impacted the economic growth of G20 nations over a period of more than thirty years. The following is a representation of an equation model:

$$GDP_{i,t} = \alpha i + \beta 1ECO_{i,t} + \beta 2POL_{i,t} + \beta 3SOC_{i,t} + \varepsilon_{i,t}$$

Where: i is nation index, t is year index,

GDPi,t : Economic growth of nation i in year t

ECOi,t : Economic globalisation of nation i in year t

SOCi,t : Social globalisation of nation i in year t

POLi,t : Political globalisation of nation i in year t

This model shows how the economic, social, and political aspects of globalisation impact economic development.

The following symbols and variables will be employed in the analysis are:

Table 1: Variables, symbols and definition of variables

Variables	Symbols	Definition
GDP per capita, current U.S. dollars	GDP_PC	GDP per capita is gross domestic product divided by midyear population. Data are in current U.S. dollars.
Unemployment rate	Unemployment	Unemployment refers to the share of the labour force that is without work but available for and seeking employment.
Foreign Direct Investment, billion USD	FDI_USD	Foreign Direct Investment (FDI) refers to cross-border investment where a resident of one economy has control or significant influence (typically 10% or more ownership) over a business in another economy, encompassing equity capital, reinvested earnings, and other capital. Data are in current U.S. dollars.
Political Stability Index(-2.5 weak; 2.5 strong)	PSI	The index of Political Stability measures perceptions of the likelihood that the government will be destabilised or overthrown by unconstitutional or violent means, including politically-motivated violence and terrorism. The index is an average of several other indexes from the Economist Intelligence Unit, the World Economic Forum, and the Political Risk Services, among others.
Gini Income Inequality Index	GII	The Gini index measures the extent to which the distribution of income (or, in some cases, consumption expenditure) among individuals or households within an economy deviates from a perfectly equal distribution. Thus a Gini index of 0 represents perfect equality, while an index of 100 implies perfect inequality.
Globalisation Index (0-100)	GI	The overall index of globalisation covers the economic, social, and political dimensions of globalisation. Higher values denote greater globalisation.
Economic Globalisation Index(0-100)	EGI	Economic globalisation encompasses two key dimensions: actual economic flows, which include data on trade, FDI, and portfolio investment, and restrictions to trade and capital, such as mean tariffs rates, import barriers, taxes on international trade, and an index of capital controls.
Political Globalisation Index (0-100)	PGI	The extent of political globalisation is indicated by the presence of embassies and high commissions in a country, participation in international organisations, involvement in UN peace missions, and the number of treaties signed with other states.
Social Globalisation Index (0-100)	SGI	Social globalisation encompasses three key dimensions: personal contacts, which include international telecom traffic, transfer and tourism; information flows, such as internet usage and television ownership; and cultural proximity, reflected in the trade of books and presence of global brands like McDonald's and IKEA.
Human Development Index (0-1)	HDI	The Human Development Index measures three basic dimensions of human development: long and healthy life, knowledge, and a decent standard of living. Four indicators are used to calculate the index: life expectancy at birth, mean years of schooling, expected years of schooling, and gross national income per capita, ranging from 0 (lowest) to 1 (highest).

Findings and Discussion

This chapter presents the findings and results based on secondary data collected from the World Bank for the period 1990 to 2020. The analysis is organised around the research objective and focuses on key indicators.

Table 2: Descriptive Statistics of the variables (1990-2022)

Variables	Mean	Standard Dev.	CV	Maximum	Minimum	Count
GDP_PC	20095.91	17057.42442	0.849	78035.17	302.88	627
GI	69.17	12.52	0.18	89.97	32.14	627
EGI	56.57	14.21	0.25	81.91	14.26	627
PGI	85.86	10.90	0.13	98.59	43.73	627
SGI	65.07	17.83	0.27	90.55	14.92	627
HDI	0.78	0.12	0.15	0.95	0.38	627
GII	38.55	8.19	0.21	64.80	28.00	627
PSI	0.01	0.77	88.01	1.41	-2.10	627
Unemployment	7.65	4.38	0.57	28.84	2.05	627
FDI_USD	41.85	71.88	1.72	511.43	-39.80	627

Source: Author's calculation

Table 2 presents the descriptive statistics for the key variables used in the study, offering important insights into their distribution and variability. The average GDP_PC is 20095.91 with a high standard deviation of 17057.42 and a CV of 0.849, indicating significant disparities in income levels across countries. The GI has a mean of 69.17 and a standard deviation of 12.52, suggesting moderate globalisation levels with some variation across observations. The EGI and SGI also show noticeable variability, with means of 56.57 and 65.07 and standard deviations of 14.21 and 17.83, respectively. PGI shows the highest average of 85.86 and the lowest standard deviation of 10.90, suggesting relatively stable trends in international political engagement. The HDI has a mean of 0.78 and a standard deviation of 0.12, reflecting generally high and stable levels of human development. The **GII** has a mean of 38.55 and a standard deviation of 8.19, indicating varying levels of income inequality across countries. The **PSI** shows considerable variation, with a standard deviation of 0.77, ranging from -2.10 to 1.41, reflecting significant differences in political stability across countries. The unemployment rate has a mean of 7.65 and a standard deviation of 4.38, indicating labour market variability. Lastly, FDI_USD displays the highest variability with a standard deviation of 71.88, ranging from -39.80 to 511.43, reflecting highly inconsistent investment flows.

Table 3: Random Effect Regression Model

R – sq: within = 0.3969 Between = 0.8774 Overall = 0.8361 Corr (u_i, x) = 0 (assumed)					Number of obs = 284 Number of groups = w18 obs per group: min = 3 Avg = 15.8 Max = 24 Wald chi2 (8) = 369.91 prob>chi2 = 0.0000	
GDP_PC	**Coef.**	**Std. Err.**	**z**	**P>|Z|**	**[95% Conf. Interval]**	
EGI	287.5967	77.19076	3.73	0.000	136.3056	438.8878
PGI	-623.9962	148.5021	-4.20	0.000	-915.055	-332.9374
SGI	560.7304	130.2242	4.31	0.000	305.4957	815.9652
HDI	57741.31	21646.65	2.67	0.008	15314.66	100168
GII	-69.83759	126.5939	-0.55	0.581	-317.957	178.2819
PSI	-962.6358	1024.631	-0.94	0.347	-2970.876	1045.604
Unemployment	-336.8904	194.8493	-1.73	0.084	-718.788	45.0073
FDI_USD	21.11357	6.164135	3.43	0.001	9.032091	33.19506
_cons	-19841.08	16350.02	-1.21	0.225	-51886.54	12204.37
Sigma_u	4066.5989					
Sigma_e	5068.0893					
rho	.3916662 (fraction of variance due to u_i)					

Source: Author's calculation

Note: The corresponding z value of a particular indicator is 1.64 or more, or higher, and we will treat it as significant.

Table 3 presents the regression analysis results, which investigate the effects of EGI, PGI, SGI, HDI, GII, PSI, Unemployment, FDI_USD on GDP_PC. The within R-squared is 0.3969, indicating that approximately 39.7% of the variation in GDP within countries over time is explained by the model. The between and overall R-squared values are higher, at 0.8774 and 0.8361, respectively, suggesting a strong explanatory power when comparing across countries. The model is statistically significant overall, as indicated by the Wald chi-square value of 369.91 ($p < 0.001$).

EGI and SGI show statistically significant and positive impact on GDP per capita with coefficients of 287.60 ($p = 0.000$) and 560.73 ($p = 0.000$) a one-unit increase in both economic and social globalisation, representing a 1.43% and 2.79% increase, respectively, indicates that greater integration into the global economy and broader social connectedness contribute meaningfully to economic development. This result is consistent with findings from **Dreher (2006), Ying et al. (2014)**, **Kılıçarslan et al. (2018),** and **Rao et al. (2011)**, who concluded that **economic globalisation positively influences economic growth** while the conclusions of **Dreher (2006)** and **Jensen et al. (2011)** found that **social globalisation has a positive and beneficial impact on economic growth.**

In contrast, the PGI has a significant negative association with a coefficient of -623.99 ($p = 0.000$), representing a 3.10% decrease in GDP per capita, suggesting that heightened political globalisation may be linked to economic constraints. This finding aligns with **Dreher (2006),** who found that political globalisation had no consistent effect on economic growth, as did Reeshan et al. (2017) and Ying et al. (2014). The **HDI** also shows a strong, positive, and significant effect on GDP, with a coefficient of 57,741.31 ($p = 0.008$), representing an increase of 287.32%, which emphasises the importance of human development in driving economic growth. This supports the conclusion by **Hoa et al. (2016)** that human development has a positive influence on economic growth. FDI is also a strong positive contributor with a coefficient of 21.11 ($p = 0.001$), confirming the importance of investment inflows for economic growth. Among the remaining variables, unemployment shows a negative but marginally significant impact ($p = 0.084$), while GII ($p = 0.581$) and PSI ($p = 0.347$) do not have statistically significant impacts on GDP_PC in this model.

Table 4: Fixed Effect Regression Model

R – sq: within = 0.3577 Between = 0.8093 Overall = 0.8099 Corr (u_i, x) = 0 (assumed)					Number of obs = 284 Number of groups = 18 obs per group: min = 3 Avg = 15.8 Max = 24 Wald chi2 (6) = 252.07 prob>chi2 = 0.0000	
GDP_PC	**Coef.**	**Std. Err.**	**z**	**P>|Z|**	**[95% Conf. Interval]**	
GI	438.3846	189.8173	2.31	0.021	66.3495	810.4197
HDI	88507.85	19067.9	4.64	0.000	51135.46	125880.2
GII	68.86234	135.1874	0.51	0.610	-196.1001	333.8248
PSI	-1705.509	1108.253	-1.54	0.124	-3877.645	466.6266
unemployment	-565.3673	200.9655	-2.81	0.005	-959.2524	-171.4821
FDI_USD	19.31948	6.528553	2.96	0.003	6.523754	32.11521
-Cons	-80052.87	11351.55	-7.05	0.000	-102301.5	-57804.25
Sigma_u Sigma_e rho	5236.9555 5218.0803 .50180537 (fraction of variance due to u_i)					

Source: Author's Calculation

Note: The corresponding z value of a particular indicator is 1.64 or more, and we will treat it as significant.

Table 4 presents the regression analysis results examining the relationship between GI, HDI, GII, PSI, unemployment, and FDI on GDP_PC. The overall R-squared value of 0.8099 indicates that about 81% of the variation in GDP_PC is explained by the model, while the Wald chi-square statistic of 252.07 with a p-value of 0.0000 confirms that the model is statistically significant and well-fitted.

The GI has a significant positive effect on GDP_PC with a coefficient value of 438.38(p = 0.021), indicating that higher levels of global integration are associated with increased per capita income. The **HDI** shows a very strong and highly significant positive relationship with a coefficient of 88507.85 (p = 0.000), emphasising the central role of human development in driving economic performance. Assuming a mean GDP per capita of 20095.91, this represents a 440.6% increase. **FDI** is also positively and significantly associated with GDP per capita, with a coefficient of 19.32 (p = 0.003), representing a 0.096% increase, suggesting that investment inflows contribute meaningfully to economic growth. These findings are supported by Carkovic et al. (2005) and Antwi et al. (2013) concluded that FDI has a positive impact on economic growth. In contrast, **unemployment** has a significant negative impact (p = 0.005), suggesting that higher unemployment rates are associated with lower GDP per capita. However, **GII** and **PSI** are not statistically significant (p = 0.610 and 0.124, respectively), suggesting these variables do not have a strong direct influence on GDP per capita.

Notably, these results are consistent with the findings from the previous model, strengthening the credibility of the estimated relationships. The consistency across models increases confidence in the conclusion that globalisation, human development, and investment are key drivers of economic growth across countries.

Table 5: Pearson Correlation Coefficient Matrix

Variables	GDP_PC	EGI	PGI	SGI	HDI	GII	PSI	Unemployment	FDI_USD
GDP_PC	1.0000								
EGI	0.7112*	1.0000							
PGI	0.4352*	0.4809*	1.0000						
SGI	0.8247*	0.7746*	0.5973	1.0000					
HDI	0.8418*	0.7297*	0.4779*	0.9406*	1.0000				
GII	-0.4438*	-0.6259*	-0.5693*	-0.4363*	-0.4173*	1.0000			
PSI	0.7418*	0.5684*	0.2870*	0.7399*	0.7385*	-0.3302*	1.0000		
Unemployment	-0.2457*	-0.0649	0.0416	-0.0766	-0.2251*	0.3606*	-0.1547*	1.0000	
FDI_USD	0.4036*	0.2248*	0.2871*	0.2791*	0.2769*	-0.0039	0.1419*	-0.2087*	1.0000

Source: Author's Calculation

Note: * indicate 5% significance levels.

Table 5 presents the correlation matrix among the key variables included in the study. **GDP per capita** is positively and significantly correlated with most variables including **EGI** (r = 0.7112), **SGI** (r = 0.8247), **HDI** (r = 0.8418), **PSI** (r = 0.7418), and **FDI** (r = 0.4036), indicating that higher global integration, better human development, and political stability are generally associated with higher income levels. The strongest correlations are observed between GDP per capita and HDI, and between GDP per capita and SGI, suggesting that improvements in human development and social globalisation are particularly influential in boosting per capita income. This finding aligns with the conclusions of Daniela-Mihaela et al. (2015), Swaha Shome et al. (2010), and Elistia et al. (2018) reported a significant relationship between GDP and HDI. On the other hand, **GII** is negatively and significantly correlated with GDP per capita (r = -0.4438), implying that greater income inequality is associated with lower GDP per capita. **Unemployment** also shows a weak but negative correlation (r = -0.2457), suggesting that higher unemployment may slightly suppress income levels. According to Karikari-Apau et al. (2019) concluded negative correlation between unemployment and economic growth in the short and long term.

The intercorrelations among independent variables are also noteworthy. **HDI and SGI** are highly correlated (r = 0.9406), reflecting their close relationship, as social globalisation often parallels human development. Similarly, EGI and SGI (r = 0.7746) and PSI with both HDI

(r = 0.7385) and SGI (r = 0.7399) exhibit strong positive correlations, highlighting the interconnected nature of development, globalisation, and governance.

Overall, the correlation analysis supports the regression findings, indicating that globalisation (economic and social), human development, political stability, and investment are positively associated with GDP per capita, while inequality and unemployment are negatively related. However, some variables, such as unemployment and GII, also show moderate correlations with other independent variables, suggesting potential multicollinearity that should be considered in further analysis.

Conclusion

Globalisation has significantly accelerated economic development by enhancing international trade, increasing foreign investment, and facilitating the exchange of technology and innovation. Evidence suggests that global integration enhances productivity, stimulates innovation, and generates new market opportunities. However, the benefits of globalisation are not evenly distributed, as advanced economies often gain more than emerging ones. The extent to which each country benefits depends on factors such as structural conditions, policy frameworks, and domestic capacity. While some nations experience rapid economic growth and increased employment, others face challenges such as rising inequality and disruption in certain sectors. These disparities underscore the importance of inclusive and adaptive policies to ensure that the gains from globalisation are shared broadly across all segments.

This study investigates the status of globalisation and economic deve, analysing countries and the impact of globalisation on economic growth from 1990 to 2022. Employing a balanced panel data approach, the analysis is based on secondary data primarily obtained from the World Bank. To assess the relationship between globalisation and economic development, the study employs descriptive statistics and correlation analysis to explore relationships between GDP per capita and key globalisation variables, including FDI, HDI, SGI, EGI, and PSI while fixed and random effects regression models were employed to analyse the influence of globalisation on economic development across the G20 countries. The findings provide strong empirical evidence that human development, economic and social globalisation, and FDI significantly contribute to higher GDP per capita in G20 countries. Among the dimensions of globalisation, EGI and SGI exhibit a strong and statistically significant positive impact on economic development, whereas PGI shows a negative effect. This suggests that not all aspects of globalisation contribute equally to economic prosperity. The Human Development Index (HDI) emerges as the most influential factor, highlighting the importance of education, healthcare, and living standards in driving economic growth. Similarly, FDI is positively linked to GDP per capita, highlighting its importance in capital formation, job creation, and technology transfer. Conversely, unemployment and Gini income inequality exhibit negative associations, pointing to persistent barriers to achieving inclusive and sustainable economic development.

Adopting inclusive and well-targeted policies is essential to fully leverage the benefits of globalisation for economic development in G20 countries. For countries with lower levels of human development, prioritising investments in education, healthcare, and living standards is essential, as HDI plays a crucial role in driving economic growth. Promoting FDI through stable economic policies and infrastructure development can further enhance capital formation, stimulate job creation, and support long-term economic growth. At the same time, targeted efforts to reduce unemployment and income inequality are crucial to ensure that globalisation leads to sustainable and inclusive economic progress for all member countries.

Policy Implications

Adopting inclusive and targeted strategies is essential to fully harness the benefits of globalisation for economic development in G20 countries. The significant role of HDI in driving GDP per capita, countries with lower HDI levels should prioritise investments in education, healthcare, and overall living standards. These foundational improvements not only enhance quality of life but also contribute to a more skilled and productive workforce. Additionally, the promotion of FDI through stable macroeconomic policies, infrastructure development, and investor-friendly regulations can stimulate capital formation, job creation, and the transfer of technology are key components of long-term economic growth.

The policies encouraging international trade, labour mobility, information exchange, and cross-cultural collaboration should be advanced to deepen integration and maximise globalisation's developmental benefits. At the same time, it is important to address the negative impact observed, particularly from PGI as well as high levels of unemployment and income inequality. Inclusive economic strategies focused on job creation, equitable access to opportunities, skills development, and progressive taxation are necessary to ensure that globalisation contributes to sustainable and equitable development.

International cooperation among G20 nations should be reinforced to facilitate knowledge sharing, technical assistance, and joint development projects aimed

at bridging disparities. Multilateral institutions and regional development banks can support underperforming economies through financial aid and targeted development initiatives that align with inclusive globalisation goals. Finally, effective monitoring and evaluation mechanisms must be embedded into national and international policy frameworks to assess the impact of globalisation-related strategies.

It is also important to recognise the limitations of this study. The reliance on secondary data and the use of a balanced panel model may limit the ability to capture real-time or country-specific variations. Moreover, the cross-sectional nature and lack of causal inference restrict the depth of the analysis. The negative correlation of political globalisation with GDP per capita invites further research to explore the underlying causes and dynamics. Future studies should consider mixed-method approaches and longitudinal data to better understand the multifaceted effects of globalisation on economic development across diverse national contexts.

Limitations of the study

This study on the impact of globalisation on economic development in G20 countries (excluding the European Union and the African Union) has key limitations. It depends on secondary data from sources like the World Bank, results may be impacted by errors or missing information. Although the study covers 1990–2022, recent shifts due to technology advances, geopolitical tensions, and the COVID-19 pandemic may not be fully reflected. Furthermore, the scarcity of studies specifically focusing on the G20 countries limits the comparability and generalizability of the findings. Moreover, the study's reliance on a specific set of globalisation indicators and economic development metrics may not capture the full complexity of these phenomena, restricting the conclusiveness of findings. These limitations underscore the need for cautious interpretation and the value of future complementary research.

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