

Determinants of Inclusive Economic Growth in Latin America

HAROLD ANGULO-BUSTINZA¹, WILMER FLOREZ-GARCIA²,
VALENTÍN CALDERON-CONTRERAS³, DAGOBERTO PEÑA-COBENAS⁴,
MADELEY BARRIENTOS-MOSCOSO⁵, VALERIA ZEBALLOS-PONCE⁶

¹Professional Academic School of Administration and International Business,
Continental University,
PERU

²Professional School of Administrative Sciences,
National University of San Antonio Abad of Cusco,
PERU

³Faculty of Economic and Administrative Sciences,
ESAN University,
PERU

⁴Faculty of Economics,
National University of Piura,
PERU

⁵Professional Academic School of Economics,
Continental University,
PERU

⁶School of Administration and International Business,
La Salle University,
PERU

Abstract: - The work aims to identify the determinants that influence inclusive economic growth in Latin America. The study's methodology is quantitative with a nonexperimental design, for whose effect analysis was developed through a panel data model to identify the determinant variables of inclusive economic growth. Annual data of the main macroeconomic and social variables were used for a sample of 14 Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, and Uruguay); the study horizon comprises 25 years, between 1995 and 2019. The following variables were found to have a direct influence on inclusive economic growth: public spending and international trade; the study also showed that inflation, unemployment, and the presence of crises have a negative impact on inclusive economic growth. Moreover, an additional public expenditure of 1% implies an increase of 0.100% in inclusive economic growth, and for each positive variation of 1% in international trade, inclusive economic growth responds with an increase of 0.144%.

Key-Words: - Inclusive economic growth; public spending, international trade, inflation, unemployment, Gini index

Received: November 5, 2022. Revised: April 17, 2023. Accepted: May 9, 2023. Published: May 19, 2023.

1 Introduction

Inclusive economic growth is a definition introduced in 2000 by Kakwani & Pernia, [1], to refer to growth that favors the most vulnerable by enabling them to participate actively in economic

activity and benefit significantly from it; thus, no one is deprived of minimum core resources. The United Nations Development Programme (UNDP) mentions that economic growth is essential to increase the income of people living in poverty,

especially in developing countries, and more resources need to be made available so they can be distributed equitably and fairly to expand opportunities for future generations, [2]. In contrast, Jalles & Mello, [3], consider that although economic growth brings prosperity, the benefits are not always evenly distributed in society; in this line, the authors exemplify the experience of Latin America, which, although it has maintained steady growth between 1990 and 2000, this did not imply an improvement in income distribution in the region. According to UNDP, [4], Latin America is in a double development trap, noting that the region maintains low economic growth and persistently high rates of inequality; for instance, this region has the highest rates of inequality worldwide. According to Chancel & Piketty, [5], between the years 1980 and 2020, a growing behavior of inequality existed in the world; this finding derives from the estimation of inequality using the income ratios of the percentiles and deciles of the population. The most important data on inequality worldwide is the one gathered and compiled by Piketty and his collaborators, [6], published in the World Inequality Database (WID), describing the participation of 1% and 10% of the population with higher incomes as well as the participation of 50% of the population with lower incomes, for more than 70 countries.

Table 1 shows the evolution, between 2000 and 2021, of the national per capita GDP and the income distribution for the top 1%, 10%, and 50% lower of the population of the continents of Africa, Asia, Europe, North America, and Latin America. In 2021, 25.2% of the income generated in Latin America accounted for 1% of the population with the highest income (Top 1%), compared with 21.5% in 2000; that is to say, an increase of 3.7 percentage units is appreciated. On the other hand, it can be seen that the 10% of the population with higher incomes (Top 10%) of Latin America absorbed 58.5% of the income generated in 2021, which was a nearly identical percentage to the year 2000. Likewise, in 2021, 8.8% of the income generated in Latin America corresponds to 50% of the population with the lowest income (50% lower); an increase of 0.5 percentage units can be seen concerning the year 2000. It is essential to note that, during the analysis period, per capita GDP in Latin America rose significantly, from US\$4,427 in 2000 to US\$7,820 in 2021; however, in this period, 1% of the population with the highest income in Latin America increased their participation to 25.2% in the income distribution, a level relatively higher than the rest of continents, [7].

Table 1. Distribution of income per capita, Top 1%, Top 10%, and bottom 50% by continent.

Región	2000	2005	2010	2015	2020	2021
Income per capita						
Africa	900	1,330	2,029	2,059	1,849	2,032
Asia	2,654	3,249	5,124	6,214	7,305	8,228
Europe	13,492	22,345	27,383	26,025	28,281	32,064
North America	28,313	34,659	38,647	43,699	47,442	52,517
Latin America	4,427	5,072	8,919	8,717	6,828	7,820
Top 1%						
Africa	20.4%	20.4%	20.1%	20.2%	21.1%	20.9%
Asia	22.4%	22.5%	20.7%	19.5%	18.8%	18.5%
Europe	10.9%	11.7%	11.5%	11.8%	11.7%	11.7%
North America	17.3%	18.0%	17.8%	18.9%	19.0%	19.0%
Latin America	21.5%	22.7%	24.5%	25.3%	25.1%	25.2%
Top 10%						
Africa	56.4%	56.3%	55.9%	54.9%	55.0%	55.0%
Asia	54.6%	54.6%	52.4%	51.2%	50.5%	50.6%
Europe	35.6%	36.2%	35.8%	36.3%	35.8%	35.8%
North America	42.8%	43.6%	43.8%	45.6%	45.7%	45.8%
Latin America	58.5%	58.8%	59.5%	58.9%	58.4%	58.5%
50% Lower						
Africa	7.7%	7.8%	8.0%	8.5%	8.6%	8.6%
Asia	10.7%	9.8%	10.0%	10.1%	10.2%	10.3%
Europe	17.4%	17.6%	18.2%	18.3%	18.9%	19.0%
North America	15.1%	14.5%	14.0%	13.4%	13.7%	13.6%
Latin America	8.3%	8.5%	8.4%	8.6%	8.8%	8.8%

Note. Based on data from the World Inequality Database (2022).

Table 2 shows that, between 2000 and 2020, Ecuador and El Salvador recorded the most significant reductions in Latin America in the concentration of income by 1% of the highest-income population, from 19.7% to 13.7% and from 17.1% to 14.5%, respectively; on the other hand, Mexico and Chile showed an increase in income distribution in the same period, from 18.3% to 28.4% and from 25.1% to 27.1% respectively. Furthermore, the situation improved principally for 50% of the lower-income population of Ecuador and El Salvador, going from a share of 11.8% to 15% and from 8.8% to 11.7% between 2000 and 2020. The analysis shows that the lower 50% of the population of Ecuador concentrates 15% of the income distribution share; that is, the largest in the region; unlike Mexico, where the lower 50% of its population accumulates 8.4% of that country's income, the lowest share in Latin America.

Table 2. Distribution of income per capita, Top 1%, Top 10%, and bottom 50% by Latin American country.

	2000	2005	2010	2015	2020
Income per capita					
Bolivia	998	1,034	1,955	3,036	3,133
Brazil	3,750	4,790	11,286	8,814	6,797
Chile	5,075	7,599	12,808	13,574	13,232
Colombia	2,520	3,414	6,337	6,176	5,335
Ecuador	1,445	3,002	4,634	6,124	5,600
El Salvador	2,002	2,429	2,983	3,706	3,799
Mexico	7,158	8,278	9,271	9,617	8,329
Peru	1,956	2,729	5,082	6,229	6,127
Top 1%					
Bolivia	19.4%	20.7%	20.7%	21.8%	20.8%
Brazil	24.5%	25.3%	28.0%	25.2%	25.7%
Chile	25.1%	27.6%	26.0%	27.1%	27.1%
Colombia	19.4%	19.2%	19.0%	18.6%	19.9%
Ecuador	19.7%	17.9%	21.5%	17.3%	13.7%
El Salvador	17.1%	20.1%	13.9%	18.5%	14.5%
Mexico	18.3%	21.1%	25.6%	31.5%	28.4%
Peru	19.9%	28.0%	24.4%	24.8%	21.2%
Top 10%					
Bolivia	53.8%	54.6%	54.0%	53.2%	51.8%
Brazil	59.9%	59.9%	61.2%	60.5%	59.8%
Chile	60.4%	62.8%	64.5%	63.9%	62.7%
Colombia	56.6%	55.7%	56.1%	53.4%	54.7%
Ecuador	54.0%	50.5%	50.9%	45.6%	41.6%
El Salvador	50.6%	51.9%	46.8%	48.9%	43.2%
Mexico	55.7%	58.7%	60.9%	62.1%	61.1%
Peru	54.2%	62.1%	57.6%	57.3%	54.0%
50% Lower					
Bolivia	10.5%	10.7%	11.0%	11.8%	12.1%
Brazil	10.1%	10.2%	10.2%	10.5%	9.8%
Chile	8.9%	8.6%	8.0%	8.6%	9.2%
Colombia	8.5%	9.6%	8.9%	10.4%	9.9%
Ecuador	11.8%	12.7%	12.2%	14.7%	15.0%
El Salvador	8.8%	8.4%	10.5%	10.2%	11.7%
Mexico	8.4%	8.4%	7.7%	7.8%	8.4%
Peru	8.6%	6.9%	9.1%	9.4%	10.4%

Note. Based on data from the World Inequality Database (2022).

For the case of the poverty gap at \$1.90 per day, according to the World Bank, the Latin American countries with the most significant reduction in the poverty gap between 2000 and 2020 were Bolivia, which went from 17.5% to 1.5%, followed by Ecuador which did the same by going from 11.7% to 2.1% at the end of 2020, [8].

The Economic Commission for Latin America (ECLAC) mentions that inequality is reflected in different dimensions, from income distribution to access to essential services and social protection, [9]. However, of all dimensions, income distribution is considered the most relevant since the income level would allow access to the different goods and services necessary to ensure opportunities for the development of people, [10].

Following the pandemic unleashed by the SARS-CoV-2 virus, the world economy was affected in different magnitudes in each country, causing inequalities to become more evident,

especially in Latin America, a region that makes various efforts to close the gaps in its societies; likewise, although in 2020 job losses around the world exceeded 140 million, there was a growth mainly in stock markets, which allowed global wealth to increase by 7.4%; however, this increase was heterogeneous, that is, while the United States and Canada grew by 12.4%, Latin America and the Caribbean region decreased by 11.4%, which aggravated the already existing inequality between countries, as well as within each of them, [11].

This paper studies the factors that influence inclusive economic growth in Latin America in the period 1995 - 2019, for whose effect analysis was developed through a panel data model to identify the determinant variables of inclusive economic growth, as suggested by the studies of Anand et al., [12], and Aoyagi & Ganelli, [13], who measure inclusive growth by considering changes in income distribution and growth. In addition, economic and structural policy variables are included since the background review shows that structural reforms promote greater trade and lower unemployment, which are determinants of inclusive development, [13].

The purpose of this study is the analysis of the economic policy of Latin America to develop future policies to promote growth in the region and allow shared well-being in favor of society.

1.1 Inclusive Growth in Latin America

The concept of inclusive growth is broad and can be interpreted differently, [14]. For example, Mitra & Das, [15], define inclusive growth as sustainable economic progress through employment generation, social protection, and public infrastructure development from the financial, environmental, and participatory scopes. For its part, Arandara & Gunasekera, [16], mention that inclusive growth means expanding the economy and providing equitable conditions for investment, which would generate better employment opportunities. Also, according to Sun, Liu & Tang, [17], inclusive growth is seen as a concept that seeks to ameliorate people's lives, alleviating the problems of growing income inequality and extreme poverty worldwide. In addition to the above, Ianchovichina & Lundstrom, [18], argued that the analysis of inclusive growth in a country is distinguished by its rate and pattern of growth since, while a rapid rate of growth is needed to reduce poverty, it must encompass all sectors of society to be sustainable in the long term. Similarly, Varona & Gonzales, [19], argue that the level of gross domestic product per capita and the slow and unsustainable economic

growth over time of the Peruvian economy has not been able to reverse the distribution of income; similarly, to be an improvement in economic growth and the trend towards equal per capita income, the investment must be made in human capital, thus achieving sustainable human development over time.

Below is a general view of trends in poverty, inequality, and environmental factors in Latin America, which demonstrate that, despite the economic growth seen over the years, and the reduction of poverty, inequality has not improved.

1.1.1 Socio-economic and Environmental Situation in Latin America

1.1.1.1 Poverty and Multidimensional Poverty

According to the World Bank, [20], countries that apply pro-business regulations have lower poverty rates, as this promotes employment. In low-income countries and rural areas, agriculture tends to be the main economic sector, being that in 2017 it represented 68% of employment in these economies; in addition, it is mentioned that poverty is a dynamic phenomenon, being that people who manage to live on USD 6 a day, which is slightly above the poverty line, are 40% likely to become poor again. Informality or unprotected low-productivity jobs make it harder for people to escape poverty or not fall into it. Along these lines, Deaton, [21], affirms that poverty has not improved by comparison with the growth of countries, stating that there is an inconsistency in the data available on poverty and reality, as many wealthy families do not generally participate in the surveys that are conducted, so the data is underestimated. Moreover, according to Drobotya et al., [22], economic growth and distributive and proactive fiscal policies are necessary to overcome poverty in Latin America. Thus, Figure 1 shows the evolution of poverty according to the poverty incidence rate to 1.90 dollars per day (% of the population) between 1990 and 2019 for the regions of Europe and Central Asia, East Asia and the Pacific, South Asia, Middle East and North Africa, Sub-Saharan Africa, and Latin America and the Caribbean. It can be seen that East Asia and the Pacific is the region that has best managed to reduce their poverty levels. At the same time, Latin America did the same, reducing the poverty incidence rate from 15.2% in 1990 to 3.7% in 2019.

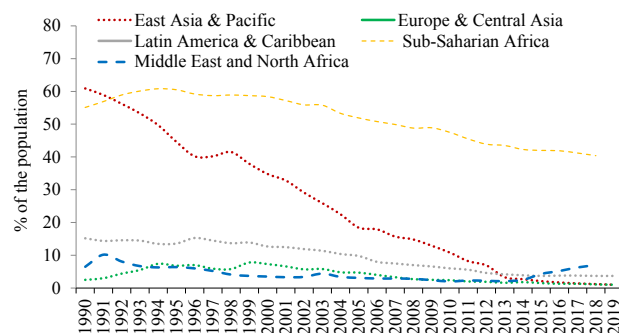


Fig. 1: Incidence of poverty at \$1.90 per day per continent (% of the population).

Note. Based on data from the World Bank (2022)

Likewise, between 2000 and 2020, the evolution of the poverty level of the Latin American population, which lives below the international poverty line, presents a downward trend. In this regard, it can be seen that, in the year 2000, Bolivia and Ecuador had the highest levels of poverty, reaching values above 28%; however, in the year 2020, both countries managed to reduce their poverty levels to 4.4% and 6.5%, respectively. It should be noted that Chile, Paraguay, and Uruguay are the countries that, by 2020, maintain poverty levels below 1%, [8].

The University of Oxford and UNDP developed the global Multidimensional Poverty Index (MPI) in 2010 since the way poverty is measured based solely on monetary conditions is inefficient in capturing reality, [23]. Thus, over time, the traditional concept of poverty was abandoned in favor of a multidimensional analysis, a much broader view of its meaning based on the goods and services that human beings acquire in the market and the various social deprivations. Thus, this new concept, incorporating more explanatory variables, helps better understand poverty [24]. The MPI is much more complex in that it analyses people's poverty from a multidimensional point of view through 10 indicators: in health, which considers infant mortality and nutrition; education, which considers school attendance and years of schooling; and standard of living, which considers drinking water, fuel for cooking, sanitation, housing, electricity, and property, [23]. Medina et al., [25], mention that the disaggregation by dimensions of poverty makes it possible to establish different policy strategies to reduce the lack of economic well-being and social rights in individuals and their households. Likewise, their study of Colombian households shows that the number of household members, type of employment, and educational attainment are the main factors that influence

household poverty. Moreno & Pinilla-Roncancio, [26], mention that according to this index, in Latin America, about 38 million people lived in multidimensional poverty before the pan-demic, a figure that represented 7.2% of the population of the region; this means that approximately 7 out of every 100 Latin Americans experience at least 4 of the 10 hardships measured at once Furthermore, according to Santos, [27], the multidimensionality in poverty in the Latin American region highlights the incidence of the COVID-19 pandemic, as people living in acute multidimensional poverty represent a high-risk group for this disease; it is also challenging for such families to comply with the health measures imposed by governments; finally, these prevention measures will have a long-term impact on various dimensions of poverty; this shows that the solution to deal with the health, education and living standards dimensions of the IPM does not depend solely on monetary transfers.

1.1.1.2 Inclusion, Exclusion, and Inequality

Krasota & Melnyk, [28], claim that inequality has always existed in societies; and that, along with development, inequality has been responsible for dividing society into different strata. The authors demonstrated that socio-economic inequality is an inherent phenomenon of modern societies, as it exists in all countries regardless of development. In addition, they showed that economic growth does not reduce inequality, but social inclusion can be an effective means. Kuss et al., [29], affirm that inclusion focuses on eradicating poverty, reducing inequalities, and maintaining growth through equal opportunities for the whole society. Social inclusion guarantees equal access to social services and economic resources and the participation of all members of society in the political, social, economic, and civic aspects of life, [28].

On the other hand, Wang et al., [30], mention that social exclusion happens when people are marginalized from participating in social activities. Along these lines, Cruz-Saco, [31], mentions that social exclusion can occur in different aspects of life, such as having precarious jobs, discrimination against women or immigrants, marginalization of Andean communities, etc. In addition, Sen, [32], argues that social exclusion is a deprivation of abilities since being excluded limits our opportunities; for example, not getting the opportunity to get a job will not allow us to receive a salary and, therefore, this will lead to other deprivations leading to greater poverty and what it entails. Finally, the author adds that the success of Western countries is because they were able to

avoid certain types of social exclusion, mainly related to basic education and social opportunities. For its part, Rodgers, [33], mentions that inequality is related to wealth and income but also to differences in status and access to opportunities. Therefore, unequal societies are more vulnerable to poverty.

According to the ECLAC, [9], Latin America is the most unequal region worldwide; this is mainly due to income inequality, which is an obstacle to development, social welfare, productivity, and economic growth. Concerning it, Stiglitz, [34], mentions that unrestrained economic inequality weakens economic growth; he continues arguing that inequality, both in income and wealth, increases more in crises such as a recession. On the other hand, however, Stiglitz, [35], argues that increasing equality would increase consumer demand. For its part, Banerjee & Duflo, [36], demonstrated that between expected growth and changes in inequality exists an "inverted U" relationship, which means that alterations in inequality, in either direction, are related to lower growth in the following period; its result is in line with the hypothesis of Kuznets, [37], who argued that the increase in per capita income also causes an increase in income inequality, however, inequality declines after reaching a certain level of income. This hypothesis was called the "Kuznets Curve," an "inverted U" curve that graphs the nonlinear relationship that exists between per capita income and income inequality.

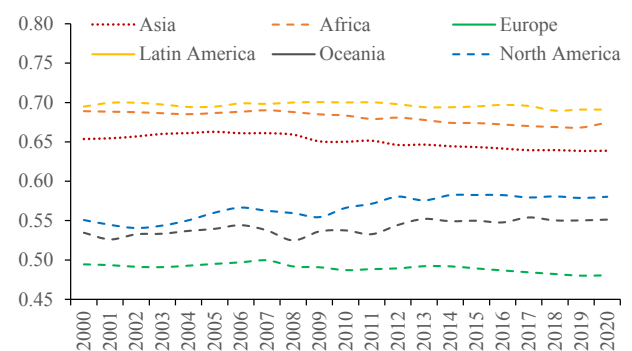


Fig. 2: GINI Index in the World
 Note. Based on data from World Inequality Database (2022).

Inequality is commonly measured by the GINI index, which represents the absence of inequality with a value of 0 and the maximum inequality with a value of 1, [10]. Figure 2 shows the evolution of this index between 2000 and 2020, both for Latin America and by regions of the world. For Cerezo & Landa, [38], Latin America is the region with the greatest inequality worldwide; this is evident in the

global analysis of Drobotya et al., [22], who concluded that the highest levels of the GINI index are observed in Latin American countries. Also, there are other indicators, such as the Theil index, proposed by Henry Theil in 1967, which measures inequality, having as an advantage that it can be broken down into subgroups; this is because it takes the basis of the concept of entropy; also, this index "complies with the additive decomposition property," characteristic that differentiates it from other indices by allowing "to know what percentage of inequality is explained by the inequality that is generated between the groups formed and which one comes from the differences of income within them," [39], (p. 18). Finally, Carrazana, Sánchez & Ávila, [40], conclude that the entropy of Theil presents desirable characteristics as an indicator of inequality, among them that it is independent of population size and scale and can be broken down into each of its elements. In this line, according to INEI, [41], Latin American countries have very high rates of exclusion generated by inequality in income distribution and poverty; because of this, these countries are characterized by their disintegrated and fragmented societies.

1.1.1.3 Environmental Factors

Several studies support the link between environmental factors and inclusive growth. Along these lines, for the OECD, [42], acting on climate change can generate inclusive growth in the short term, as well as ensure the long-term growth and well-being of citizens; a low-carbon economy enables strong growth and prevents climate change from having a negative impact on the future economy. Kamah, Riti & Bin, [43], demonstrated that inclusive growth and environmental quality have an inverted U-shape relationship, which means that environmental quality deteriorates at an early stage of inclusive growth. However, environmental quality improves as inclusive growth increases after reaching the threshold point. On the other hand, Ge & Li, [44], demonstrated that environmental regulations promote inclusive growth. In addition, Kouton, [45], analyses the impact of renewable energy on inclusive growth, explaining that the consumption of these energies relies on the Inclusive growth of Africa in a significant and positive way. Along these lines, Gouvea et al., [46], mention that one of the most important renewable energy markets in the world is located in Latin America thanks to its abundance of geothermal energy, sun exposure, water resources, wind, and biomass; however, the region lacks technology and

innovation, preventing adequate growth and development.

1.1.2 Inclusive Growth

While per capita GDP has increased significantly in Latin America and the Caribbean, inequality in income distribution has not improved. In this respect, for Aoyagi & Ganelli, [13], a situation such as this is problematic, as inequality weakens growth, and because poverty reduction would be greater with more equitable growth; the authors propose that indifference curves are a way to measure the inclusive growth of a country, that is, a higher curve will imply higher average incomes, in this way, if the curve moves upwards at all points there will be inclusive growth. However, the degree of inclusive growth fluctuates depending on higher economic growth and the variation in income distribution, representing the equity curve's slope. Therefore, to measure inclusive economic growth, Aoyagi & Ganelli, [13], and Anand et al., [12], use the income growth measure adjusted for changes in income inequality; based on this, Kang et al., [47], propose the calculation of inclusive economic growth as the difference between real per capita GDP growth and changes in net GINI.

1.2 Determinants of Inclusive Growth

According to Samuelson & Nordhaus, [48], the main factor in ensuring the long-term success of the nations is economic growth, so state policies always aim at it; they also argue that economic growth needs 'four wheels': human resources, natural resources, capital and innovation, and technological change, adding that the functions of government are to improve economic efficiency, reduce inequality and stabilize the economy. Along these lines, Mendoza, Leyva & Flor, [49], argue that "the action of the State, through fiscal policy and relative price policy, also affects income distribution" (p. 29). In addition, Aoyagi & Ganelli, [13], state that while few researchers focus on inclusive growth, there are studies that have found that monetary, fiscal, and structural policy influence the expansion of growth benefits. The authors also concluded that redistributive fiscal policy, monetary policy, efficient labor market, and industrial competitiveness policies would promote inclusive growth.

1.2.1 Fiscal, Monetary, and Structural Policy

According to Bastagli et al., [50], fiscal policy has played a crucial role in reducing inequality in developed economies, especially those with high initial inequality before taxes and transfers; most of this redistributive impact was achieved through

budget spending, mainly by transfers, not subject to resource verification, although taxes are also important; however, the author adds that low levels of tax collection and transfers constrain the redistributive impact of the Fiscal policy in developing economies. For its part, Stiglitz, [34], states that a better-regulated financial system and more progressive taxes are needed to achieve greater equity and strengthen economic performance. Along these lines, Lee, Park & Lee, [51], point out that fiscal policy is an effective tool to mitigate the impacts of a possible economic crisis, which mainly tends to affect the poor and disadvantaged who do not have the resources to deal with these crises. In addition, according to Jalles & Melo, [3], the most important instruments of income redistribution in advanced economies are tax benefit systems; however, in developing countries, these systems are less developed, and therefore, they have a lower redistribution, mainly due to a lower ratio between tax revenues and GDP. Also, there is greater dependence on indirect taxes and less comprehensive social safety nets. Nevertheless, many economies have used tax policies to achieve inclusive growth and, through them, have achieved distributive and progressive effects, [52]. An important piece of evidence about the influence of Fiscal Policy in reducing inequality in Latin America was the studies by Fuentes & Clifton, [53], who analyzed the effects of nine fiscal policy instruments on income inequality: public expenditure on education, social security, health, and housing; and public revenue from personal income, property, goods and services, international trade, and social contributions taxes.

In addition, Stiglitz, [34], mentions that there are different ways in which inequality damages the economy, mainly considering that high inequality weakens aggregate demand; adding that this situation is aggravated by the deficient actions of the monetary authorities in dealing with weak demand; a hyper-expansive monetary policy due to the reduction of interest rates and the relaxation of regulations, feeds a bubble of asset prices too easily and the bursting of it leads to a recession. Hence, it concludes that only the increase in debt can sustain consumption. Moreover, according to Coibion et al., [54], a contractive monetary policy generates persistent effects on inequality, causing inequality in wages, consumption, and total spending among households. In this line, Furceri et al., [55], found that an expansive monetary policy decreases income inequality. On the contrary, a contractive monetary policy increases it, its impact being much greater than the expansive policy's. However, expansionary

monetary policy generates inflation and price instability, so many central banks aim to achieve price stability through inflation targets, [56].

On the other hand, according to Abdel-Kader, [57], monetary and fiscal policies only consider economic measures in the short term; however, the economic problem is much more complex considering a long-term time horizon. In that sense, for Aoyagi & Ganelli, [13], long-term structural policies are needed, also as traditional fiscal and monetary policies, in order to achieve inclusive growth. Along these lines, structural policies revolve around six aspects: price controls, public finance management, the financial sector, public sector enterprises, social safety nets, and the labor market, [57].

Different countries have sought to improve the targeting of programs to address inequality, such as introducing benefits that link benefit receipt with employment, [50]. Furthermore, Fabrizio et al., [58], mention that different structural reforms have a certain influence on the distribution of income through other channels, some of which are of greater relevance for low-income developing countries; similarly, in countries with a high intersectoral productivity gap, poor people working in low-productivity sectors face difficulties in moving to higher-productivity industries; on the other hand, reforms that rise the relative prices of tradable and non-tradable goods have a potential significant distributive effect, finally, if financial access is limited, reforms that reduce borrowing costs could increase inequality; they also add that the distributive impact of macro-structural policies on this type of economy is complex, as it depends on the specific characteristics of each economy, as the level of informality or access to financial services, among others.

According to Konte, Kouamé & Mensah, [59], when working conditions tend to be flexible in the face of structural reform encouraging trade liberalization in developing countries, firms become labor-intensive. For their part, Khan et al., [60], affirm that globalization, measured by trade openness, generates a virtuous circle between the decrease of structural differences and growth that enhances the well-being of all people and decreases inequality.

On the other hand, for Aoyagi & Ganelli, [13], efficient structural reform reduces the unemployment rate, which encourages inclusive growth. Along these lines, Jalles & Melo, [3], indicate that reforms to improve access to education, active labor market policies, growth-friendly tax, and transfer systems tend to improve household

income distribution. Finally, in their study, Heshmati et al., [52], consider that the main drivers of income inequality are international trade policies, globalization, education, labor market reform, and technological change, adding that there is no panacea for achieving inclusive growth.

2 Materials and Methods

The statistical information was obtained from the World Bank and CEPALSTAT. The frequency is annual and includes, by data availability, the period 1995-2019. Peru, Mexico, Colombia, and Chile established the Pacific Alliance in April 2011. This regional integration mechanism has increased the real income and trade opening of its members and other Latin countries, [61]. As a basis for this event, the analysis is performed in the subperiods 1995-2010 and 2011-2019. The dependent variable corresponds to inclusive economic growth (Y), measured as the difference between real economic growth (2010=100) and the percentage change in the net Gini coefficient, and independent variables including public expenditure (X1), represented by the percentage change in real public expenditure (2010=100), inflation (X2) calculated as the percentage change in the overall degree of the Consumer Price Index, unemployment (X3) measured as the percentage of the unemployed labor force, International trade (X4) as measured by the percentage change in the sum of imports and exports, and the presence of a crisis (X5) is captured, following Machinea, [62], and Ramos et al., [63], with a dummy variable adopting the value of one for the years 1995 (tequila crisis), 1998-2003 (Asian crisis, Brazilian crisis, Russian crisis, Argentine crisis, dot-com crisis, impact of SARS) and 2008-2010 (global financial crisis). The indicators used are based on the studies of Aoyagi, [13], and Kang et al., [47]. Table 3 summarizes the above.

Table 3. Description and abbreviation of the variables of the econometric model

Variable	Description of Variables	Notation	Abbreviation	Expected Sign
Y	Inclusive economic growth	Real economic growth (2010=100) - Percentage change in net Gini coefficient.	CEIN	-
X ₁	Public spend	Percentage change in real public spending (2010=100).	GAPU	+
X ₂	Inflation	Percentage change in the general level of the Consumer Price Index.	INFL	-
X ₃	Unemployment	Percentage of the labor force unemployed.	DESE	-
X ₄	International Trade	Percentage change in the sum of exports and imports.	COIN	+
X ₅	Presence of crisis	Dummy variable.	PCRI	-

2.1 Econometric Strategy

The sample includes 14 Latin countries: Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Honduras, Mexico, Panama, Paraguay, Peru, and Uruguay. To check whether the difference between the variables analyzed in normal years and years of crisis is significant, the nonparametric Kruskal-Wallis test is performed for two independent samples, whose null hypothesis is that the median of the variables in both scenarios coincides. This is after verifying the assumptions of normality with the Jarque-Bera test and its null hypothesis that the data come from a normal distribution; and homoscedasticity with the Bartlett test, in the presence of normalcy, and Levene, in the absence of normalcy, under the null hypothesis that the variance in normal years and years of crisis is equal (see Table 4). The mean, coefficient of variation, standard deviation, and Pearson linear correlation coefficient are then calculated and interpreted.

Table 4. Probability value of previous tests (percentage rounded to two decimal places)

Variable	Abbreviation	Jarque-Bera	Levene	Bartlett	U of Mann-Whitney
Y	CEIN	0.00***	0.00***		0.00***
X ₁	GAPU	0.00***	0.4		0.03**
X ₂	INFL	0.00***	0.01**		0.00***
X ₃	DESE	0.00***	0.01**		0.2
X ₄	COIN	0.69		0.00***	0.03**

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Results from information from the World Bank and CEPALSTAT.

Based on Aparicio & Márquez, [64], a first estimated model is pooled:

$$Y_{it} = \alpha + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it} \quad (1)$$

The ordinary least squares estimator (β^{OLS}) of equation (1) is:

$$\beta^{OLS} = (X^T X)^{-1} X^T Y \quad (2)$$

Where X is the matrix of explanatory variables (X₁, X₂, X₃, X₄, X₅), and Y the vector of the dependent variable, the superscript T indicates the transposition and I the inverse.

To control the individual character of each country, we estimate the random effects model that represents a different intercept for each country:

$$Y_{it} = \alpha + u_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it} \quad (3)$$

In (3), the intercept is a random variable with a mean value α and a random deviation u_i of that

mean. Estimation of equation (3) requires the use of generalized least squares (GLS):

$$[\sum_{i=1}^N X_i^*{}^T V^1 X_i^*] \delta_{GLS} = [\sum_{i=1}^N X_i^*{}^T V^1 Y_i] \quad (4)$$

Where:

$$X_i^* = (d_1, d_2, \dots, d_N, X_i)$$

$$V^1 = [I_T + (EE^T/T)(\psi - 1)] / \sigma_u^2$$

$$\psi = \sigma_w^2 / (\sigma_u^2 + T\sigma_a^2)$$

d represents the dummy variable by country, I_T is the identity matrix of size T (the horizon), E is the error matrix, and $\delta_{GLS} = (u, \beta^T)$.

To select between (1) and (3), the Lagrange multiplier test is performed for random effects, whose null hypothesis establishes that the u_i variance is null, which implies that (1) is better.

A third estimated model is that of fixed effects, where the intercept of each country is fixed and captured with a dummy variable (v_i):

$$Y_{it} = v_i + \beta_1 X_{1it} + \beta_2 X_{2it} + \beta_3 X_{3it} + \beta_4 X_{4it} + \beta_5 X_{5it} + e_{it} \quad (5)$$

The ordinary least squares estimator (β_{OLS}^F) of equation (5) in deviations from the mean is:

$$\beta_{OLS}^F = [\sum_{i=1}^N \sum_{t=1}^T (X_{it} - X_i^A)(X_{it} - X_i^A)^T]^{-1} [\sum_{i=1}^N \sum_{t=1}^T (X_{it} - X_i^A)(Y_{it} - Y_i^A)^T] \quad (6)$$

Where:

$$X_i^A = \sum_{t=1}^T X_{it} / T$$

$$Y_i^A = \sum_{t=1}^T Y_{it} / T$$

A greater detail of the equations presented can be reviewed in Hsiao, [65].

The selection between (1) and (5) arises from the restrictive F test with the null hypothesis that all dummy variables (v_i) are null, which implies that (1) is better.

In these models, "i" represents the country, "t" is the year, and "e" is the error. It is projected that:

$$\beta_1 > 0, \beta_2 < 0, \beta_3 < 0, \beta_4 > 0, \beta_5 < 0$$

Finally, to decide between (3) and (5), the Hausman test is used, whose null hypothesis is that the estimators of random effects and fixed effects do not differ substantially and implies that the random effects model is more efficient.

The statistical validation of the selected model consists in determining whether the estimated parameters are statistically significant individually (Student t-test, whose null hypothesis is that the estimated parameter is null in statistical terms) and if the error meets the assumption of normality (Jarque-Bera test). In addition, econometric validation evaluates compliance with homoscedasticity assumptions (modified Wald test in the fixed effects model and White test in the pooled model), not first-order autocorrelation (Wooldridge test in the fixed effects model and Durbin-Watson test, in both cases the null hypothesis is that the errors are independent concerning the first delay) and contemporary correlation of the error (Breusch and Pagan test, whose hypothesis is that errors between countries are independent of each other), and the low multicollinearity of explanatory variables (test of the factor of inflation of the variance, whose null hypothesis is that the level of correlation between the explicative variables is low). The tests use a significance level of 5%, and the correction of econometric problems is performed with Generalized Least Squares (GLS) method in the Newey-West model of fixed effects and standard errors in the pooled model.

3 Results

For the descriptive analysis of the variables, the mean and the coefficient of variation (denoted by CV and calculated as the ratio between the standard deviation and the average) were used; the latter is expressed in percentage and measures the variability of the data: low ($CV \leq 10\%$), moderate ($10\% \leq CV \leq 33\%$), excessive but tolerable ($33\% \leq CV \leq 50\%$) and excessive ($CV > 50\%$). The 1995-2010 and 2011-2019 subperiods registered an average inclusive economic growth of 2.36% and 2.53%, respectively, with excessive variability (respective CVs of 159.93% and 108.21%). However, during these horizons, average public spending increased by 0.04% (from 3.42% to 3.46%), and its excessive variability decreased from 110.30% to 86.53%; average inflation fell from 8.87% to 5.38%, while its excessive variability increased (from 119.07% to 131.15%); average unemployment fell from 6.94% to 5.88%, and its variability became excessive but tolerable (55.87% versus 43.20%); while international trade decreased 6.02% (from 9.66% to 3.64%) but not its excessive variability (respective CV of 152.56% and 301.29%). On the other hand, between 1995 and 2019, the average inclusive economic growth was 2.43% ($CV = 141.85\%$), the

average public expenditure was 3.43% (CV=102.12%), inflation was 7.61% average (CV=125.93%), unemployment had an average rate of 6.56% (CV=53.20%) and international trade recorded an average of 7.49% (CV=184.07%); excessive variability in all variables (see Table 5).

Table 5. Descriptive statistics of the variables (percentage rounded to two decimal places)

Variable	1995-2010		2011-2019		1995-2019	
	Average	Coefficient of variation (CV)	Average	Coefficient of variation (CV)	Average	Coefficient of variation (CV)
Y CEIN	2.36	159.93	2.53	108.21	2.43	141.85
X ₁ GAPU	3.42	110.3	3.46	86.53	3.43	102.12
X ₂ INFL	8.87	119.07	5.38	131.15	7.61	125.93
X ₃ DESE	6.94	55.87	5.88	43.2	6.56	53.2
X ₄ COIN	9.66	152.56	3.64	301.29	7.49	184.07

Note. Results from information from the World Bank and CEPALSTAT.

Inclusive economic growth has a median of 3.10% in years without crisis compared to 1.43% in years with crisis (1995, 1998, 1999, 2000, 2001, 2002, 2003, 2008, 2009, and 2010); likewise, public expenditure was 3.36% in years without crisis and 2.56% in years with crisis, unemployment was 5.65% in years without crisis and 5.56% in years with crisis, international trade was 8.86% in years without crisis and 4.76% in years with crisis and inflation was 4.36% in years without crisis and 6.53% in years with crisis. Of these variations, the only statistically non-significant (p-value=0.20) is that recorded in unemployment (See Table 6).

Table 6. Median of the variables, 1995-2019 (percentage rounded to two decimal places)

Variable		Years without crisis	Years with crisis	Difference		
				Value	Z	p-value
Y	CEIN	3.10	1.43	1.68	5.15	0.00***
X ₁	GAPU	3.36	2.56	0.8	2.2	0.03**
X ₂	INFL	4.36	6.53	-2.18	-2.83	0.00***
X ₃	DESE	5.65	5.56	0.09	-1.28	0.2
X ₄	COIN	8.86	4.76	4.1	2.11	0.03**

Note: *** p<0.01, ** p<0.05, * p<0.1. Results from information from the World Bank and CEPALSTAT.

To measure the linear association between inclusive economic growth and the explanatory variables considered in the research, the Pearson coefficient was used. Between 1995 and 2010, public expenditure and international trade are positively associated with inclusive economic growth, with respective correlations of 0.30 and 0.75, while the correlation with inflation and unemployment is negative, with respective values of -0.17 and -0.21. Regarding the horizon 2011-2019, inclusive economic growth is positively associated with public expenditure (correlation of 0.47) and international trade (correlation of 0.49) but

negatively with inflation (correlation of -0.32) and unemployment (correlation of -0.40). In addition, data for the analysis period (1995-2019) indicate that public spending and international trade have a positive correlation with inclusive economic growth, with respective values of 0.34 and 0.67, while inflation and unemployment are negatively associated with inclusive economic growth at values of -0.20 and -0.25, respectively. All correlations are statistically significant at 1%, and only in the case of inflation for the 1995-2010 subperiod is 5% (see Table 7). It should be noted that a significant correlation does not imply causality but suggests including the respective variable(s) in the subsequent regression.

Table 7. Linear correlation between inclusive economic growth and explanatory variables

Explanatory variable	1995-2019		1995-2010		2011-2019	
	Coefficient	p-value	Coefficient	p-value	Coefficient	p-value
X ₁ GAPU	0.34	0.00***	0.3	0.00***	0.47	0.00***
X ₂ INFL	-0.2	0.00***	-0.17	0.01**	-0.32	0.00***
X ₃ DESE	-0.25	0.00***	-0.21	0.00***	-0.4	0.00***
X ₄ COIN	0.67	0.00***	0.75	0.00***	0.49	0.00***

Note. *** p<0.01, ** p<0.05, * p<0.1. Results from information from the World Bank and CEPALSTAT.

For the subperiod 1995-2010, the tests of the Lagrange multiplier (p-value=0.03) and Hausman (p-value=0.00) indicate that the model includes fixed effects and the presence of normal problems (p-value=0.00), first-order autocorrelation (p-value=0.01), heteroscedasticity (p-value=0.00) and contemporary correlation (p-value=0.01), is estimated with the method of Generalized Least Squares (GLS). For the 2011-2019 sub-period, the Lagrange multiplier test (p-value=0.17) indicates that the appropriate model is a pooled, heteroscedasticity (p-value=0.02) standard Newey-West errors are used. In the horizon, 1995-2019, considering the results of the tests of the Lagrange multiplier (p-value=0.00) and Hausman (p-value=0.00) corresponds to the use of a model of fixed effects, which is estimated with Generalized Least Squares (GLS) because it lacks normality (p-value=0.00), has first-order autocorrelation (p-value=0.00), heteroscedasticity (p-value=0.00) and contemporary correlation (p-value=0.00) as econometric error problems (see Table 8).

Between 1995-2010, public spending and international trade favored inclusive economic growth; for every additional 1% in public spending, inclusive economic growth increased by 0.072%; meanwhile, inclusive economic growth responded positively by 0.161% to a further 1% variation in international trade. On the other hand, inflation and

unemployment are adverse factors for inclusive economic growth, so for every 1% increase in the overall level of the Consumer Price Index, inclusive economic growth is reduced by 0.068%, and against a 1% increase in the unemployed workforce, inclusive economic growth falls by 0.109%. During the crisis years (1995, 1998, 1999, 2000, 2001, 2002, 2003, 2008, 2009, and 2010), inclusive economic growth registered a reduction of 0.883%.

On the other hand, between 2011 and 2019, after the implementation of the Pacific Alliance, the impact of the explanatory variables remains. In this sense, an increase of 1% in public spending conducts to an increase of 0.292% in inclusive economic growth, and given a positive variation in international trade by 1%, inclusive economic growth responds with an increase of 0.108%, which implies that both variables foster inclusive economic growth. Concerning inflation, a 1% increase in the overall Consumer Price Index (CPI) causes a 0.065% drop in inclusive economic growth. In comparison, if the unemployed workforce increases by 1%, inclusive economic growth falls by 0.240%. The results of the study show that the impact of public spending increased by 0.220%, going from 0.072% between 1995 and 2010 to 0.292% between the years 2011 to 2019; in contrast, international trade had an opposite behavior when falling 0.053% between both horizons, from 0.161% in the period 1995-2010 to 0.108% in the period 2011-2019. As a result, the negative and significant impact of inflation increased from -0.068% in the period 1995-2010 to -0.065% in the period 2011-2019, which represents a decrease of 0.003%; that is, between the years 2011 and 2019, the impact of inflation was lower; while the impact of unemployment increased by 0.131% to go from -0.109% in the period 1995-2010 to -0.240% in the period 2011-2019.

Finally, for the period 1995-2019, the results show that public spending and international trade promote greater inclusive economic growth. In particular, an additional public expenditure of 1% implies an increase of 0.100% in inclusive economic growth, and for each positive variation of 1% in international trade, inclusive economic growth responds with an increase of 0.144%. In addition, the study suggests that inflation and unemployment slow inclusive economic growth; thus, the increase of the Consumer Price Index (CPI) by 1% causes a reduction of 0.075% in inclusive economic growth; furthermore, 1% growth in the unemployment rate reduces inclusive economic growth by 0.181%. Regarding the presence of crises, during the study period, inclusive economic growth registered a

negative and significant variation of 0.606%. With a p-value below the significance level, all estimated parameters are statistically significant (see Table 8).

It should be noted that multicollinearity was presented to a low degree. Although normality is violated in some horizons, the number of observations and the central limit theorem guarantee that the statistical significance of the parameters is valid. Moreover, the estimated values correspond only to the average impact recorded in the respective horizons; it does not imply that changes in the explanatory variables are automatically translated into the described impacts today or in the future.

Table 8. Determinants of inclusive economic growth (rounded to two decimal places)

Explanatory variable	Abreviation	1995-2010			2011-2019			1995-2019		
		Estimated parameter	Standard error	p-value	Estimated parameter	Standard error	p-value	Estimated parameter	Standard error	p-value
X ₁	GAPU	0.07	0.02	0.00***	0.29	0.07	0.00***	0.10	0.02	0.00***
X ₂	INFL	-0.07	0.01	0.00***	-0.06	0.02	0.00***	-0.08	0.01	0.00***
X ₃	DESE	-0.11	0.04	0.00***	-0.24	0.10	0.02**	-0.18	0.04	0.00***
X ₄	COIN	0.16	0.01	0.00***	0.11	0.02	0.00***	0.14	0.01	0.00***
X ₅	PCRI	-0.88	0.19	0.00***				-0.61	0.22	0.01***
Constant		2.46	0.31	0.00***	2.89	0.78	0.00***	2.69	0.31	0.00***
Selection test										
Lagrange multiplier					0.17			0.00***		
Hausman		0.00***						0.00***		
Validation test										
Jarque-Bera		0.00***			0.12			0.00***		
VIF average		1.10			1.10			1.06		
Wooldridge		0.01**						0.00***		
Durbin-Watson					0.61					
Modified of Wald		0.00***						0.00***		
White					0.02**					
Breusch y Pagan		0.01**						0.00***		
Others										
Number of observations		224			126			350		

Note. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$. Results from information from the World Bank and CEPALSTAT

4 Discussion

This study estimates the impact of the determinants of inclusive economic growth in Latin America during the horizon 1995-2019. First, it is found a positive relationship between inclusive economic growth and public spending, in line with the outcome of the study by Anand et al., [12], in which real government spending is a highly significant variable for advanced economies. Inflation reduces inclusive economic growth; this implies that monetary policy has an important role, as demonstrated by Moosavi & Gharleghi, [56], who conclude that inflation targets represent a significant improvement strategy for inclusive economic growth in southern developing countries. On the contrary, Abada et al., [66], find that inclusive economic growth decreases by 13.84% against additional unemployment of 1%, in line with our results; to this are added the studies of Cysne & Turchick, [67], and Aoyagi & Ganelli, [13]. The latter estimates that inclusive economic growth increases by 0.72% if the unemployment rate is reduced by 1%. Finally, the research results show that international trade is a determining factor that promotes greater inclusive economic growth; these

results coincide with the outcome of Khan et al., [60], who evidenced the positive and significant impact of trade opening on inclusive economic trade.

5 Conclusions

This study estimates, using a panel model data of linear and static type, the method of Generalized Least Squares (GLS) and Newey-West standard errors, the impact of a set of variables (public expenditure, inflation, unemployment, and international trade) theoretically linked to inclusive economic growth for 14 Latin American countries, in the period 1995 to 2019. The results demonstrate that public spending has a positive and significant impact ($p < 0.05$) of 0.100% on inclusive economic growth in the region. Likewise, international trade presents a statistically significant positive pact ($p < 0.05$) of 0.144% in inclusive economic growth. On the contrary, inflation and unemployment have a negative and significant impact ($p < 0.05$) of -0.075% and -0.181% on inclusive economic growth. Finally, regarding the presence of crises, inclusive economic growth registered a negative and significant variation ($p < 0.05$) of 0.606% during the study period. It is concluded that, in Latin America, the determinants that positively affect inclusive economic growth are public spending and international trade; meanwhile, the determinants that negatively impact inclusive economic growth are Inflation, unemployment, and the presence of crises. It is possible to perform this panel data analysis incorporating as an indicator of inclusive economic growth the calculation from a social mobility curve, as do Aoyagi and Ganelli (2015), requesting information from household surveys or similar sources in each country.

References:

- [1] N. Kakwani and E. M. Pernia, "What is Pro-poor Growth?," *Asian Dev Rev*, vol. 18, no. 1, 2000, [Online]. Available: <https://mpira.ub.uni-muenchen.de/104987/>
- [2] Programa de las Naciones Unidas para el Desarrollo (PNUD), *Informe sobre Desarrollo Humano 2020: La próxima frontera - el desarrollo humano y el antropoceno*. Nueva York: Naciones Unidas, 2020.
- [3] J. T. Jalles and L. de Mello, "Cross-country evidence on the determinants of inclusive growth episodes," *Rev Dev Econ*, vol. 23, no. 4, pp. 1818–1839, Nov. 2019, doi: 10.1111/rode.12605.
- [4] Programa de las Naciones Unidas para el Desarrollo (PNUD), *Informe Regional de Desarrollo Humano 2021. Atrapados: Alta desigualdad y bajo crecimiento en América Latina y El Caribe*. Nueva York: Naciones Unidas, 2021.
- [5] L. Chancel and T. Piketty, "Global Income Inequality, 1820–2020: the Persistence and Mutation of Extreme Inequality," *Journal of the European Economic Association*, vol. 19, no. 6, pp. 3025–3062, 2021, doi: <https://doi.org/10.1093/jeea/jvab047>.
- [6] A. Sarkhosh-Sara, K. Nasrollahi, K. Azarbayjani, and R. Bakhshi Dastjerdi, "Comparative analysis of the effects of institutional factors and Piketty's Hypothesis on inequality: evidence from a panel of countries," *J Econ Struct*, vol. 9, no. 1, Dec. 2020, doi: 10.1186/s40008-020-00218-0.
- [7] WID.World, "World Inequality DataBase," 2022. <https://wid.world/data/>
- [8] World Bank, "Poverty gap at \$1.90 a day (2011 PPP) (%)," 2022. <https://data.worldbank.org/indicator/SI.POV.GAPS>
- [9] Comisión Económica para América Latina y el Caribe (CEPAL), *Panorama social de América Latina: 2019*. Santiago de Chile: Naciones Unidas, 2019.
- [10] Comisión Económica para América Latina y el Caribe (CEPAL), *Panorama Social de América Latina: 2020*. Santiago de Chile: Naciones Unidas, 2021. [Online]. Available: www.cepal.org/apps
- [11] Comisión Económica para América Latina y el Caribe (CEPAL), *Estudio Económico de América Latina y el Caribe 2021*. Santiago de Chile: Naciones Unidas, 2021. [Online]. Available: www.cepal.org/apps
- [12] R. Anand, S. Mishra, and S. J. Peiris, "Inclusive Growth: Measurement and Determinants," 13, 2013.
- [13] C. Aoyagi and G. Ganelli, "Asia's quest for inclusive growth revisited," *J Asian Econ*, vol. 40, pp. 29–46, Oct. 2015, doi: 10.1016/j.asieco.2015.06.005.
- [14] A. J. van Niekerk, "Towards inclusive growth in Africa," *Dev South Afr*, vol. 37, no. 3, pp. 519–533, May 2020, doi: 10.1080/0376835X.2020.1736004.
- [15] A. Mitra and D. Das, "Inclusive Growth: Economics as if People Mattered," *Global Business Review*, vol. 19, no. 3, pp. 756–770, Jun. 2018, doi: 10.1177/0972150917713840.

- [16] R. Arandara and S. Gunasekera, "Financial Inclusion and Inclusive Growth What Does It Mean for Sri Lanka?," 9204, 2020. [Online]. Available: <http://www.worldbank.org/prwp>.
- [17] C. Sun, L. Liu, and Y. Tang, "Measuring the inclusive growth of China's coastal regions," Sustainability (Switzerland), vol. 10, no. 8, Aug. 2018, doi: 10.3390/su10082863.
- [18] E. Ianchovichina and S. Lundstrom, "Inclusive Growth Analytics Framework and Application," 4851, 2009. [Online]. Available: <http://econ.worldbank.org>.
- [19] L. Varona-Castillo and J. R. Gonzales-Castillo, "Economic growth and income distribution in Peru," Probl Desarro, vol. 52, no. 205, pp. 79–107, Apr. 2021, doi: 10.22201/iiec.20078951e.2021.205.69636.
- [20] Banco Mundial, Informe sobre el Desarrollo Mundial 2019: La naturaleza cambiante del trabajo, cuadernillo del "Panorama general." Washington DC: Banco Mundial, 2019.
- [21] A. Deaton, "Measuring poverty in a growing world (or measuring growth in a poor world)," Review of Economics and Statistics, vol. 87, no. 1, pp. 1–19, 2005.
- [22] Y. Drobotya, M. Baldzhy, A. Pecheniuk, I. Savelchuk, D. Hryhorenko, and T. Kulinich, "Overcoming Poverty and Social Inequality in Third World Countries (Latin America, Africa)," IJCSNS International Journal of Computer Science and Network Security, vol. 21, no. 3, p. 295, 2021, doi: 10.22937/IJCSNS.2021.21.3.38.
- [23] Programa de las Naciones Unidas para el Desarrollo (PNUD) and Oxford Poverty and Human Development Initiative (OPHI), "Índice de Pobreza Multidimensional Global 2021: Desvelar las disparidades de etnia, casta y género," 2021. [Online]. Available: <http://hdr.undp.org/enhttps://ophi.org.uk/multidimensional-poverty-index/>.
- [24] H. Laverde-Rojas and J.J. Gómez-Ríos, "Medición de la pobreza multidimensional en América Latina a través de modelos estructurales", Cooperativismo & Desarrollo, vol. 23, 2015, doi: 10.16925/co.v23i106.1130.
- [25] E. J. Medina-Hermández, L. F. Sierra-Ibañez and A.R. Domínguez-Monterrosa, "Perspectiva multidimensional de la pobreza en los hogares colombianos", Sociedad y Economía, 2021, doi: 10.25100/sye.v0i44.10734.
- [26] H. Moreno and M. Pinilla-Roncancio, "Multidimensional poverty and COVID-19 in Latin America and the Caribbean: recent trends and the route ahead.," OPHI Briefing, vol. 57, 2021.
- [27] M. E. Santos, "Pobreza Multidimensional en tiempos del COVID-19," Programa de las Naciones Unidas para el Desarrollo, 2020. <https://www.undp.org/es/latin-america/blog/pobreza-multidimensional-en-tiempos-del-covid-19> (accessed Feb. 13, 2022).
- [28] O. Krasota, and T. Melnyk, "Social Inclusion as an Instrument for Reducing Socio-Economic Inequality," Scientific Papers of the University of Pardubice, Series D, Faculty of Economics and Administration, 28(3), 2020, doi: 10.46585/sp28031192.
- [29] M. K. Kuss, F. Gassmann, and F. Mugumya, "How Inclusive are the Local Economic Impacts of Social Protection in Uganda?," European Journal of Development Research, pp. 1–23, 2021, doi: 10.1057/s41287-021-00488-9.
- [30] H. Wang, M. P. Kwan, and M. Hu, "Social exclusion and accessibility among low- and non-low-income groups: A case study of Nanjing, China," Cities, vol. 101, Jun. 2020, doi: 10.1016/j.cities.2020.102684.
- [31] M. A. Cruz Saco, "Inequality and exclusion in latin america: health care commodification, gendered norms, and violence". Social Inclusion, 10(1), 1-4, 2022, doi: 10.17645/si.v10i1.5240.
- [32] A. Sen, Social exclusion: concept, application, and scrutiny. Manila, Philippines: Office of Environment and Social Development, Asian Development Bank, 2000.
- [33] G. Rodgers, "Changing perspectives on poverty and inequality: The contributions of the International Labour Review". International Labour Review, Centenary Collection, No. 7, 2021.
- [34] J. E. Stiglitz, "Inequality and Economic Growth," The Political Quarterly, vol. 86, pp. 134–155, 2016.
- [35] J. E. Stiglitz, "An agenda for sustainable and inclusive growth for emerging markets," J Policy Model, vol. 38, no. 4, pp. 693–710, Jul. 2016, doi: 10.1016/j.jpolmod.2016.05.012.
- [36] A. v Banerjee and E. Duflo, "Inequality and Growth: What Can the Data Say? *," Journal of economic growth, vol. 8, no. 3, pp. 267–299., 2003.
- [37] S. Kuznets, "Economic growth and income inequality," The American Economic Review, vol. 45, pp. 1–28, 1955.

- [38] V. Cerezo and H. O. Landa, "Economic growth and inequality in Asia, Europe, and Latin America, 1990-2019," *Invest Econ*, vol. 80, no. 315, pp. 59–80, 2020, doi: 10.22201/FE.01851667P.2021.315.77565.
- [39] Fernando. Medina, *Consideraciones sobre el índice de Gini para medir la concentración de ingreso*. Santiago de Chile: Naciones Unidas, CEPAL, División de Estadística y Proyecciones Económicas, 2001.
- [40] R. Carrazana-escalona, M. E. Sánchez-hechavarría, and A. Ávila, "Theil Entropy as a Non-Linear Analysis for Spectral Inequality of Physiological Oscillations," *Entropy*, vol. 24, no. 3, Mar. 2022, doi: 10.3390/e24030370.
- [41] Instituto Nacional de Estadística e Informática (INEI), Perú: *Inclusión y Exclusión Social en la Juventud*, 2011. Instituto Nacional de Estadística e Informática, 2012. [Online]. Available: www.inei.gob.pe
- [42] Organization for Economic Co-operation and Development (OECD), *Investing in Climate, Investing in Growth*. OECD Publishing, 2017. doi: 10.1787/9789264273528-en.
- [43] M. Kamah, J. S. Riti, and P. Bin, "Inclusive growth and environmental sustainability: the role of institutional quality in sub-Saharan Africa," *Environmental Science and Pollution Research*, vol. 28, no. 26, pp. 34885–34901, Jul. 2021, doi: 10.1007/s11356-021-13125-z.
- [44] T. Ge and J. Li, "The effect of environmental regulation intensity deviation on China's inclusive growth," *Environmental Science and Pollution Research*, vol. 27, no. 27, pp. 34158–34171, Sep. 2020, doi: 10.1007/s11356-020-09574-7.
- [45] J. Kouton, "The impact of renewable energy consumption on inclusive growth: panel data analysis in 44 African countries," *Economic Change and Restructuring*, vol. 54, no. 1, pp. 145–170, Feb. 2021, doi: 10.1007/s10644-020-09270-z.
- [46] R. Gouvea, M. S. Gutierrez, M. Montoya, and B. Terra, "Latin America: Chartering a new economic and business pathway," *Thunderbird International Business Review*, vol. 63, no. 4, pp. 451–461, Jul. 2021, doi: 10.1002/tie.22201.
- [47] M. Kang, I. Park, and D. E. Rhee, "Korea's growth-driven trade policies: Inclusive or exclusive?" *World Economy*, vol. 40, no. 11, pp. 2475–2490, Nov. 2017, doi: 10.1111/twec.12556.
- [48] P. A. Samuelson and W. D. Nordhaus, *Economics*, 19th ed. New York: McGraw-Hill/Irwin, 2009.
- [49] W. Mendoza, J. Leyva, and J. Flor, "La distribución del ingreso en el Perú: 1980-2010," *Revista CIS*, vol. 9, no. 15, pp. 27–50, 2011, [Online]. Available: www.untechoparachile.cl/cis
- [50] F. Bastagli, D. Coady, and S. Gupta, "Income Inequality and Fiscal Policy," 2012.
- [51] D. Park, S. Lee, and M. Lee, *Inequality, Inclusive Growth, and Fiscal Policy in Asia*. Asian Development Bank & Routledge, 2015.
- [52] A. Heshmati, J. Kim, and J. Wood, "A survey of inclusive growth policy," *Economies*, vol. 7, no. 3, Jul. 2019, doi: 10.3390/economies7030065.
- [53] J. Clifton, D. Díaz-Fuentes, and J. Revuelta, "Falling inequality in Latin America: The role of fiscal policy," *J Lat Am Stud*, vol. 52, no. 2, pp. 317–341, May 2020, doi: 10.1017/S0022216X20000334.
- [54] O. Coibion, Y. Gorodnichenko, L. Kueng, and J. Silvia, "Innocent Bystanders? Monetary policy and inequality," *Journal of Monetary Economics*, vol. 88. Elsevier B.V., pp. 70–89, Jun. 01, 2017. doi: 10.1016/j.jmoneco.2017.05.005.
- [55] D. Furceri, P. Loungani, and A. Zdzienicka, "The effects of monetary policy shocks on inequality," *J Int Money Finance*, vol. 85, pp. 168–186, Jul. 2018, doi: 10.1016/j.jimonfin.2017.11.004.
- [56] R. Moosavi Mohseni and B. Gharleghi, "The choice of inflation targeting regimes for inclusive growth: Lessons from southern countries," *J Public Aff*, vol. 21, no. 1, Feb. 2021, doi: 10.1002/pa.2152.
- [57] K. Abdel-Kader, "¿Qué son las políticas estructurales?," *Finanzas y Desarrollo*, pp. 46–47, 2013.
- [58] S. Fabrizio et al., "Macro-Structural Policies and Income Inequality in Low-Income Developing Countries," 2017.
- [59] M. Konte, W. A. Kouamé, and E. B. Mensah, "Structural Reforms and Labor Productivity Growth in Developing Countries: Intra or Inter-Reallocation Channel?" *World Bank Econ Rev*, vol. 0, no. 0, pp. 1–24, 2022, doi: 10.1093/wber/lhac002/6552724.
- [60] A. Khan, G. Khan, S. Safdar, S. Munir, and Z. Andleeb, "Measurement and determinants of inclusive growth: A case study of Pakistan (1990-2012)," *Pak Dev Rev*, vol. 55, no. 4,

- pp. 455–466, Dec. 2016, doi: 10.30541/v55i4i-iipp.455-466.
- [61] R. Abusada-Salah, C. Acevedo, R. Aichele, G. Felbermayr, and A. Roldán-Pérez, “DIMENSIONES Y EFECTOS ECONÓMICOS DE LA ALIANZA DEL PACÍFICO,” 2015.
- [62] J. Luis. Machinea, *La crisis económica en América Latina: alcances e impactos*. Madrid: Fundación Carolina, 2010.
- [63] C. Ramos Carvajal, M. Alvargonzález Rodríguez, and B. Moreno Cuartas, “Factores determinantes de la reducción de la desigualdad en la distribución de la renta en países de América Latina,” *Revista de la CEPAL*, vol. 126, 2018.
- [64] J. Aparicio and J. Márquez, “Diagnóstico y Especificación de Modelos Panel en Stata 8.0,” Ciudad de México, 2005.
- [65] Hsiao, Ch., *Analysis of Panel Data* (4^a. Ed.). Econometric Society Monographs, 2022.
- [66] F. C. Abada, C. O. Manasseh, I. C. Nwakoby, P. C. Obidike, O. N. Okonkwo, and F. C. Alio, “An assessment of inclusive growth policy as a determinant of unemployment reduction in Nigeria: An application of autoregressive distributed (ARDL) bound test approach,” *Montenegrin Journal of Economics*, vol. 17, no. 4, pp. 85–97, 2021, doi: 10.14254/1800-5845/2021.17-4.8.
- [67] R. P. Cysne and D. Turchick, “Equilibrium unemployment-inequality correlation,” *J Macroecon*, vol. 34, no. 2, pp. 454–469, Jun. 2012, doi: 10.1016/j.jmacro.2011.12.009.

Contribution of Individual Authors to the Creation of a Scientific Article (Ghostwriting Policy)

-Harold Angulo, Wilmer Florez, and Valentin Calderon were responsible for the methodology.
-Valentin Calderon, Dagoberto Peña, and Madeley Barrientos were responsible for the formal analysis.
-Harold Angulo, Wilmer Florez, and Valentin Calderon were responsible for data curation.
-Harold Angulo, Wilmer Florez, Valentin Calderon, Dagoberto Peña, Madeley Barrientos, and Valeria Zeballos were responsible for writing, reviewing, and editing.
-Harold Angulo, Wilmer Florez, Valentin Calderon, Dagoberto Peña, Madeley Barrientos, and Valeria Zeballos were responsible for visualization.
-Harold Angulo, Wilmer Florez, and Valentin Calderon were responsible for supervision.

Sources of Funding for Research Presented in a Scientific Article or Scientific Article Itself

No funding was received for conducting this study.

Conflict of Interest

The authors have no conflict of interest to declare.

Creative Commons Attribution License 4.0 (Attribution 4.0 International, CC BY 4.0)

This article is published under the terms of the Creative Commons Attribution License 4.0
https://creativecommons.org/licenses/by/4.0/deed.en_US