



Research Article

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Multidimensional Analysis of Adolescent Fertility in Latin America: Trends and Determinants

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Abstract

Adolescent pregnancy in Latin America constitutes a complex issue with significant consequences. High pregnancy rates among individuals under 20 years old impact education, personal development, and future opportunities. It is imperative to pay closer attention to sexual education, access to contraceptive methods, and reproductive health services to prevent unintended pregnancies and ensure the well-being of both adolescents and their children. The study aimed to elucidate the determinants influencing the adolescent fertility rate, thus providing an academic contribution for the formulation of public policies in Latin America. The period covered was 1990-2019, and the analyzed data were sourced from the World Population Prospects 2019 report. The main findings indicate that the adolescent pregnancy rate is alarming, attributed to the absence of effective public policies for control and prevention in response to this phenomenon.

Keywords: Pregnancy, Adolescent, Latin America, Sexual Education, Public Politic

1. Introduction

Over the years, the growth of the world population has undergone changing dynamics, primarily driven by the economic development of different territories (Salamanca & Rodríguez, 2011). Since the Industrial Revolution, the global population density has increased eightfold, and this growth continues steadily as the years progress (Venegas Ortega & Valles Berenice, 2019).

In this context, the significant increase in teenage pregnancies remains a cause for concern both in developed and developing countries (Adhena & Fikre, 2023; Okanlawon et al., 2010; Venegas Ortega & Valles Berenice, 2019). Social, cultural, political, and economic factors emerge as key determinants impacting levels of teenage fertility rates (Lavanderos et al., 2019; Li et al., 2023). In this

regard, different factors present different nuances and in some cases are difficult to identify; in this sense, there may be relationships between aspects such as parental divorce, various forms of abuse including sexual, physical, emotional, and substance abuse, alongside psychological factors such as depression, undiagnosed anxiety, among others (Nikmatur et al., 2020).

Similarly, authors such as Aluga and Okolie (2021) mention that other aspects to consider for the growth of this phenomenon include: mother's age, educational level, place of residence, contraceptive use, household disintegration, social inequality, poverty, absence of communication about reproductive health in educational institutions and households (Kassa et al., 2019). In this context, teenage pregnancy presents a series of distinct and significant consequences at a global, social, and personal level.

Globally, countries such as China and Asia exhibit intermediate or low teenage fertility rates, as their levels are considerably below replacement fertility thresholds (NU. CEPAL, 2020). Developed countries, with fertility rates ranging from 1.4 to 2.1 children per woman, reflect the influence of factors such as access to education, economic levels, values, public policies, and regulations established in each nation. Illustrating this trend, the Republic of Korea, Switzerland, and Singapore rank as the countries with the lowest teenage fertility rates in the world (Banco Mundial, 2020). During the period 1990-2019, the average growth of the teenage fertility rate in these countries was only 1%, compared to the rest of the ranking (CEPAL & UNICEF, 2007), (Bárcena, 2019).

However, in Latin America and the Caribbean, the situation is different. Despite efforts to address the phenomenon, these regions face significant challenges, as transition degrees vary for each country (González Nava et al., 2020). Fertility rates are particularly high compared to other American countries, ranking as the second-highest globally (Gayet et al., 2020). Concerns about teenage pregnancies persist, and it is crucial to address the underlying factors contributing to these high fertility rates in Latin America and the Caribbean (Escalona, 2016). This initial analysis underscores the need for specific approaches and targeted public policies to address this demographic challenge in these regions.

This research contributes to the existing body of knowledge in the scientific community. By comprehensively analyzing the teenage fertility rate in Latin America, it provides a detailed insight into trends over time and identifies key socio-economic factors influencing this phenomenon. The applied panel data modeling offers a methodological tool to address the complexity of variations between countries. The obtained results provide insights that can guide specific public policies and intervention strategies to reduce the teenage fertility rate in the region.

This work is divided into four sections. The first section develops a theoretical framework, the second section defines the methodology used, the fourth section presents the most relevant results of the study, and the fifth section presents the conclusions. The main objective of this research is to analyze and understand the dynamics of the teenage fertility rate in Latin America during the period 1990-2019. The aim is to identify patterns, determinants, and possible socio-economic correlations explaining variations in the teenage fertility rate in the region.

2. Background

2.1 Adolescent fertility

Adolescent fertility can be examined from two perspectives. On one hand, the dichotomous perspective of motherhood, indicating whether an adolescent has had a child or not; and on the other hand, from the intensity perspective, i.e., the number of children born at different ages (Aguiló, 2020). The social and economic consequences for adolescents resulting from pregnancy are also educational, as they are less likely to complete their academic education (McCracken & Loveless, 2014; Sepeng et al., 2023).

In this regard, through the analysis of the number of children born in different regions worldwide, it can be observed that, at the Latin American level, the fertility rate has been decreasing.

This is attributed to changes in macroeconomic conditions, such as higher levels of growth and development (Aguiló, 2020). However, the teenage fertility rate decreases less and remains the second-highest in the world, surpassed only by sub-Saharan Africa (González Nava et al., 2020; Kassa et al., 2018). This requires analysis due to the multiple and complex effects of this phenomenon, translating into disadvantages in employment, economics, and education (España Paredes et al., 2019; Shackleton et al., 2016). Additionally, Goal 3 of the SDGs aims to reduce maternal mortality globally by 2030 (Adhena & Fikre, 2023; Nove et al., 2014).

In fertility studies, a central theme has been the identification of fertility determinants. We speak of contextual or indirect determinants and proximate or intermediate determinants that can influence fertility levels in countries (González Nava et al., 2020; Herrera Almanza & Sahn, 2018).. In the case of contextual or indirect determinants, these are variables that influence through proximate or intermediate determinants. According to the literature review, these are related to the level of education, unemployment, inequality, and poverty (Martínez et al., 2020).

In Ecuador, studies such as (Asenjo & Quispe, 2021; Cuba Sancho & Ochoa Camac, 2022) have investigated the determinants of teenage fertility. At the Latin American level, studies like those of (Cuba Sancho & Ochoa Camac, 2022) are also presented. Their contributions have helped understand the issue of teenage pregnancy. However, these investigations have considered proximate or intermediate determinants or, in turn, there is a temporal and territorial limitation in their analysis. Therefore, this research justifies its contribution to the literature by studying the period 1990-2019 in Latin American countries. This will allow for a better understanding of the evolution of teenage fertility rates and their determinants with more current data, as this situation may have changed.

This study aligns with the theory of demographic transition, specifically addressed in 1945 by Frank Notestein. Its main contribution lies in defining population regimes or dynamics (Lopes Patarra, 1973). In this sense, the study of demographic transition includes the shift from a usual regime, characterized by high levels of birth and death, to a renewed regime with reduced levels of birth and death. In this way, it contemplates the transition stages that countries go through in their population and helps foresee expected future levels (Zavala Páez, 2016).

This theory has two fundamental aspects analyzed by Frank Notestein. The first is the transition in society from rural to urban due to economic, social, and demographic development (Marco-Gracia, 2018). The second refers to the three phases that the demographic regime must go through when the modernization and urbanization process begins. The first phase is linked to a decrease in mortality and an increase in the birth rate, the second phase refers to the process of reducing mortality rates, which also causes a decrease in birth rates, and the third phase analyzes the stability produced between mortality and birth rates (Marisol & Graciela, 2023). For this reason, countries tend towards population stability characterized by low fertility rates, but it is necessary to face the phases leading to this.

According to the theory of demographic transition and the process experienced by Europe, Latin America should have reduced fertility levels through the use of contraceptives, delaying the age of marriage, and improving the health system (Valarezo León et al., 2022). However, this did not happen in most countries in the region, except in Chile and Argentina, which are countries with the best health investment and fertility reduction, allowing them not to complete the first stage of demographic transition. That is, generate low levels of mortality and, especially, fertility. The case of Ecuador is particular. A reduction in mortality rates is observed (Cervera-Rinza & López-Sánchez, 2020). But there is a high fertility rate, especially in the young stratum.

3. Methodology

The present research is based on a methodological approach that combines statistical analysis and data modeling to examine the teenage fertility rate in Latin America over the past two decades (1990-2019). The methodology is divided into several key stages to provide a comprehensive and accurate assessment. The data used in this study are of a secondary nature and are based on figures from the

"World Population Prospects 2019" report, published by the Department of Economic and Social Affairs of the United Nations Secretariat, for the fertility variable. Additionally, World Bank sources will be used to construct variables for the econometric model, such as the Gini index, poverty, and unemployment, while education data will be sourced from CEDLAS.

Table 1. Study variables

Variable	Presentation Format
Teenage Fertility Rate	: Births per 1000 women aged 15-19
Education	: Years of schooling
Gini Index	: Units between 1 and 100
Poverty	: % of the population in poverty
Unemployment	: Percentage representing the proportion of unemployed in the labor force

3.1 Data Collection:

Data were collected from reliable and relevant sources, including government agencies, health institutions, and international entities. The information covers demographic, economic, and social indicators, with a special focus on the teenage fertility rate (15-19 years).

3.2 Exploratory Data Analysis (EDA):

An exploratory analysis was conducted to understand the distribution of the teenage fertility rate in the region. Graphs and visualizations helped identify general trends and variations between countries.

3.3 Time Series Analysis:

Time series analysis techniques were applied to assess trends over time. This allowed for the identification of patterns, peaks, and declines in the teenage fertility rate in each country.

3.4 Correlation and Determinant Variable Analysis:

Relationships between the teenage fertility rate and key socioeconomic variables such as poverty, education, unemployment, and the Gini index were examined. Correlation analysis was used to identify possible associations.

3.5 Panel Data Modeling:

A panel data model was implemented using the Ordinary Least Squares (OLS) method with fixed and random effects. This allowed for the evaluation of the influence of specific variables and their effects on teenage fertility in each country. The model is presented below:

$$TFp = \beta_1 + \beta_2 \cdot Edu_{\#} + \beta_3 Gi_{\#} + \beta_4 Pz_{\#} + \beta_5 Des_{\#} + u$$

Where:

TFp = Youth fertility rate

$Edu_{\#}$ = Education

$Gi_{\#}$ = Gini index

$Pz_{\#}$ = Poverty

$Des_{\#}$ = Unemployment

4. Results

Figure 1 depicts the evolution of the fertility rate in various Latin American countries over time. In the case of Argentina, notable variations are observed during the studied period. It experienced a peak in 1993 and 2013, followed by a decline. The year 2003 marked the highest point, with 98 births per 1000 young people aged 15 to 19. In contrast, 2013 reached the maximum with 119 births per 1000 young people, while in 2019, there were 78 births per 1000 women aged 15 to 19.

In Brazil, a growth trend is identified until the year 2000, followed by a significant decrease. Although a small increase is observed between 2013 and 2014, the trend turns negative again, reaching its lowest point in 2019 with 402 births per 1000 young people aged 15 to 18.

Bolivia shows notable fluctuations in its fertility rate. In 1993, there were 36 births per 1000 young people, experiencing an increase in 1999 followed by a decreasing trend. However, between 2000 and 2010, an increase is observed before resuming the decreasing trend.

In the case of Costa Rica, fluctuations are highlighted throughout the period, reaching their highest point in the year 2000. Subsequently, the general trend is downward, recording 13.6 births in 2006. Although an increase is identified in the following years, the trend turns negative again, marking its lowest point in 2019 with 8.3 births per 1000 young people aged 15 to 18. These patterns reveal specific dynamics in the fertility rate of each country, providing a detailed insight into its evolution over the years.

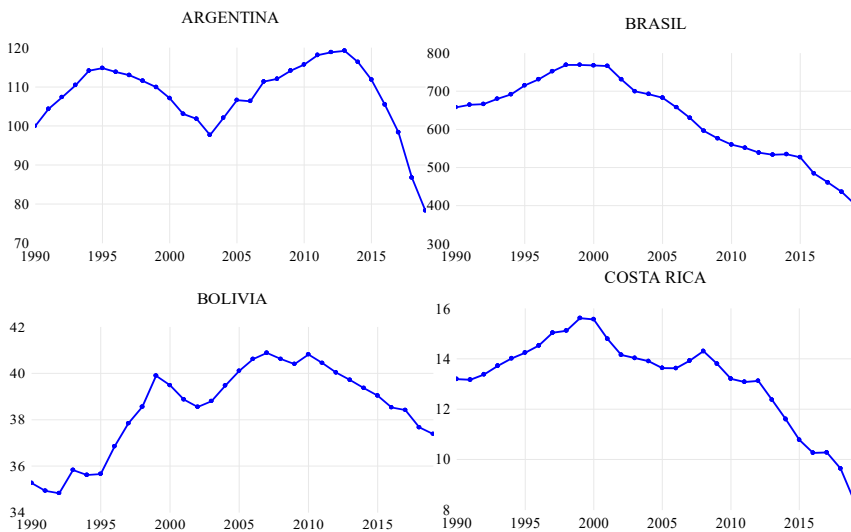


Figure 1. Fertility Argentina, Brasil, Bolívia, Costa Rica

Figure 2 focuses on fertility in Colombia, Chile, Ecuador, and El Salvador, revealing distinct patterns in each country. In Colombia, there is a relative stability in the fertility rate. Although there is an increase in the years 1999 and 2000, the overall trend has been downward, reaching its lowest point in 2019 with 127 births per 100 young women aged 15 to 18.

Chile, on the other hand, shows a consistently decreasing trend from 2009 to 2019, with a minimum of 15 births per 1000 young women aged 15 to 18. This phenomenon is attributed to increased accessibility to contraceptive methods, education in sexual health, and female empowerment.

In Ecuador, between 1990 and 2011, there is an increase in the fertility rate, reaching its peak

with 66.9 births per 1000 young women aged 15 to 18. However, since 2012, there has been a steady decline, reaching its lowest point in 2019 with 51.9 births per 1000 young women. These figures could be associated with challenges such as lack of access to education, low educational levels, poverty, and limited access to sexual and reproductive health services.

El Salvador presents an interesting panorama. Between 1994 and 1996, there is a peak with 40 births per 1000 young women, followed by a decline until 2007, remaining constant until 2015. In 2019, the lowest point is recorded with 17.8 births per 1000 women aged 15 to 18. The decrease in teenage fertility is attributed to changes in education and improved access to reproductive health services for this population.

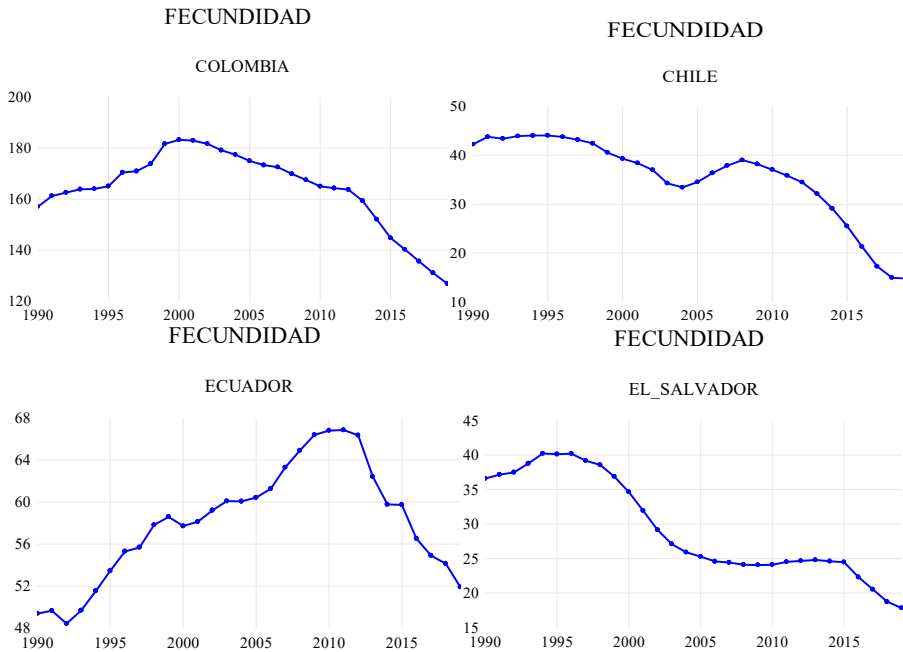


Figure 2. Fertility Colombia, Chile, Ecuador, El Salvador

Figure 3 examines the fertility rate of adolescents aged 15 to 18 in Honduras, Mexico, Panama, and Paraguay, highlighting distinct trends in each country. In Honduras, the fertility rate shows a significant decrease from 1990 to 2019, dropping from 65 to 43 births per 1000 young women. This decline is primarily attributed to increased education and improved access to reproductive health among young people. Educational and health programs have contributed to empowering young individuals with knowledge about their sexual health, enabling them to make informed decisions.

Mexico, on the other hand, exhibits notable fluctuations in its fertility rate. Although it records its lowest point in 2019 with 316 births per 1000 young women aged 15 to 18, it remains high compared to other countries. The fluctuations could be attributed to various factors, and despite the reduction in 2019, the need for continuous measures to address this phenomenon is emphasized.

In Panama, between 1990 and 2019, a significant reduction in the teenage fertility rate is observed, decreasing from 59.9 to 34.3 births per 1000 adolescents. This decline is attributed to increased access to education and sexual and reproductive health services. Government initiatives, such as sexual education campaigns and prevention programs, have contributed to this decrease.

Paraguay experiences fluctuations in its fertility rate, with a more notable peak in 1990 and 1996 with 20.2 births. Although there is an increase in 2013 with 23.8 births, it decreases to 16.5 in 2019. The

decline is attributed to increased education, improved access to healthcare, and the availability of contraceptives for young women, highlighting the effectiveness of initiatives promoting access to education and health.

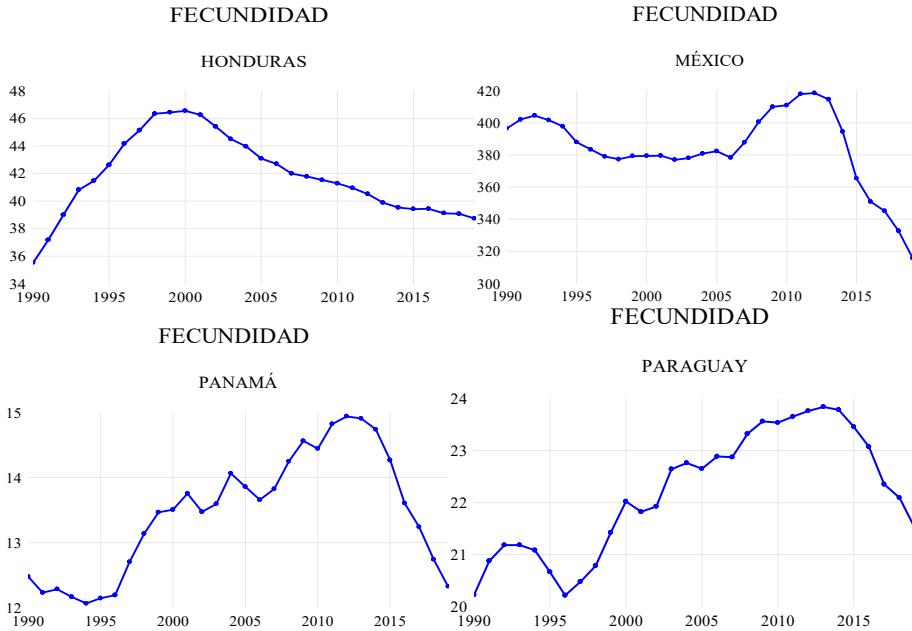


Figure 3. Fertility Honduras, México, Panamá, Paraguay

Figure 4 highlights the fertility rate in Peru, the Dominican Republic, and Uruguay, revealing notable trends over time. Peru exhibits several fluctuations in its fertility rate. The year 1997 marks the highest point with 103.8 births, progressively decreasing to reach its lowest point in 2018 with 80.8 births per 1000 young women aged 15 to 18. These variations could be attributed to various sociodemographic dynamics and emphasize the importance of a more detailed analysis to understand these changes.

In the Dominican Republic, fluctuations are evident, but the lowest fertility rate is recorded in 2019, with 37.8 births per 1000 young women aged 15 to 18. Available data reveals a significant decrease in the fertility rate since 1990, when it was 135.7 births per 1000 women, to 2019, where it reduces to 49.3. This decline suggests the positive impact of educational and reproductive health measures.

Uruguay, on the other hand, shows a peak in 1994 with 9.2 births per 1000 young women, but then experiences a constant decline, reaching its lowest point in 2019 with 4.6 births. These results reflect the success of policies and programs implemented to educate and empower young women, as well as improve access to reproductive health services. Figure 4 underscores the diversity of situations in the analyzed countries and the importance of specific strategies tailored to each nation's dynamics to address the teenage fertility rate.

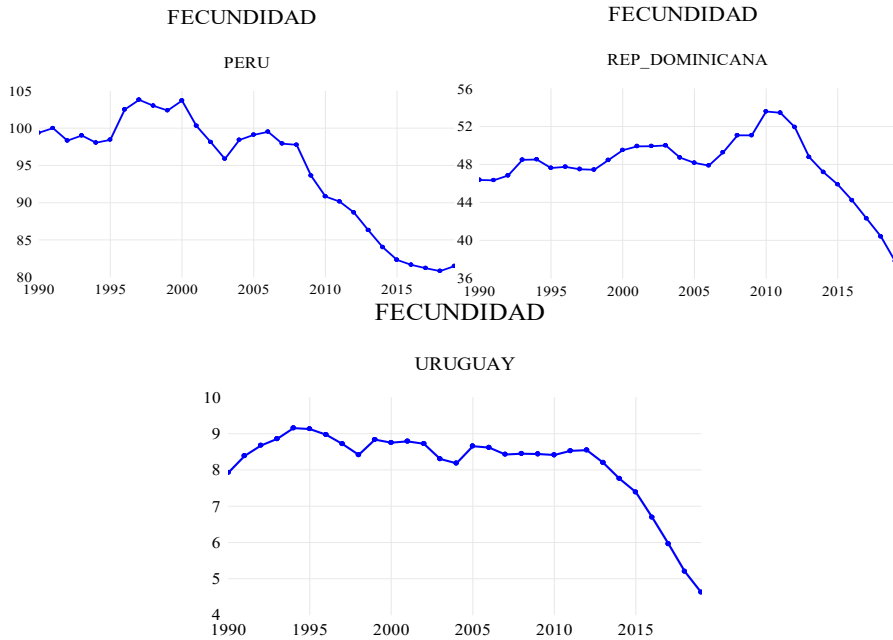


Figure 4. Fertility Perú, Rep. Dominicana, Uruguay.

Table 3 presents the correlations between fertility, unemployment, education, Gini index, and poverty variables. The results indicate a significant correlation between fertility and poverty ($r = 0.366$, $p < 0.000$). Additionally, there is a significant correlation between education and the Gini index ($r = -0.491$, $p < 0.000$) and between education and poverty ($r = -0.626$, $p < 0.000$). On the other hand, there is no significant correlation between fertility and unemployment ($r = 0.085$, $p > 0.05$) or between the Gini index and unemployment ($r = -0.059$, $p > 0.05$).

Table 2 displays the correlations between fertility, unemployment, education, Gini index, and poverty variables. The results highlight significant relationships that shed light on factors influencing teenage fertility. In (1) Fertility and Poverty, a significant positive correlation between fertility and poverty is observed ($r = 0.366$, $p < 0.000$). This suggests that as the poverty rate increases, the teenage fertility rate also tends to rise, indicating a relevant association. (2) Education and Gini Index: a significant negative correlation between education and the Gini index is noted ($r = -0.491$, $p < 0.000$), indicating that as the educational level increases, socioeconomic inequality tends to decrease. (3) Education and Poverty: a significant negative correlation between education and poverty is also identified ($r = -0.626$, $p < 0.000$). This finding indicates that a higher level of education is associated with lower levels of poverty, which could have direct implications for teenage fertility. (4) Fertility and Unemployment, and Gini Index and Unemployment: no significant correlations are found between fertility and unemployment ($r = 0.085$, $p > 0.05$) or between the Gini index and unemployment ($r = -0.059$, $p > 0.05$). This suggests that, in the analyzed context, unemployment does not show a statistically significant relationship with teenage fertility or economic inequality. These correlations provide a comprehensive understanding of the dynamics underlying teenage fertility in Latin America, highlighting the importance of factors such as education and poverty in this phenomenon.

Table 2. Correlation between the determining variables of adolescent fertility in Latin America 1990-2019

		Fertility	Unemployment	Education	Gini index	Poverty
Fertility	Pearson correlation	1	0,085	-,176**	,223**	,366**
	Next (bilateral)		0,070	0,000	0,000	0,000
Unemployment	Pearson correlation	0,085	1	0,083	-0,059	-,308**
	Next (bilateral)	0,070		0,080	0,215	0,000
Education	Pearson correlation	-,176**	0,083	1	-,491**	-,626**
	Next (bilateral)	0,000	0,080		0,000	0,000
Gini index	Pearson correlation	,223**	-0,059	-,491**	1	,698**
	Next (bilateral)	0,000	0,215	0,000		0,000
Poverty	Pearson correlation	,366**	-,308**	-,626**	,698**	1
	Next (bilateral)	0,000	0,000	0,000	0,000	

4.1 Statistical Model Analysis in the Study of Teenage Fertility in Latin America

Within the research framework on teenage fertility in Latin America, three variants of the model were conducted, with the analysis of "constant coefficients" being the first evaluated outcome. When running the Ordinary Least Squares (OLS) model without considering fixed or random effects in individual sections or time periods, it was observed that all independent variables were significant at a 99% confidence level. However, limitations arose, such as a low coefficient of determination and a Durbin-Watson statistic close to 0, indicating possible issues of negative autocorrelation. A striking contradiction was the inverse relationship between the "poverty" variable and teenage fertility.

In a second analysis, individual random and fixed effects in the studied countries were evaluated. These results were more consistent and aligned with reality. The significance of 99% was highlighted for the "education" and "poverty" variables, with coefficients and directions consistent with theory and reality. Autocorrelation and determination statistics were adequate, and no multicollinearity problems were identified.

Finally, it was determined that the OLS model with individual random effects, presented in Table 3, was the best fit for the research data. This model provided consistent and significant results, aligned with theory and reality. In conclusion, the importance of considering fixed and random effects in explanatory models to address the complexity of teenage fertility data in Latin America was emphasized.

Table 3. Estimation of the OLS model with panel data for adolescent fertility 1990-2019

	Constant coefficients	Individual Effect		Temporal effect	
		Fijo	Aleatorio	Fijo	Aleatorio
Unemployment	0,365904***	-0,018287	-0,017801	0,365904***	0,365904***
Education	-1,45835**	-0,200516***	-0,202577**	-1,45835**	-1,45835**
Gini	3,881712***	0,026259	0,030215***	3,881712***	3,881712***
Poverty	-0,414672***	0,06151***	0,060799***	-0,414672***	-0,414672***
C	-3,598131***	1,900401***	1,895319***	-3,598131***	-3,598131***
R2	0,156186	0,989704	0,00158	0,175533	0,156186
Durbin Watson	0,020093	1,712194	1,86120	0,023571	0,020093
Panel Effect					
Argentina	...	0,380709	0,380430	...	...
Brasil	...	1,059119	1,058475	...	...
Bolivia	...	-0,141919	-0,141667	...	...
Costa Rica	...	-0,577592	-0,577556	...	...
Colombia	...	0,488155	0,487812	...	...

	Constant coefficients	Individual Effect		Temporal effect	
		Fijo	Aleatorio	Fijo	Aleatorio
Chile	...	-0,126277	-0,126456	...	...
Ecuador	...	0,038208	0,038368	...	...
El Salvador	...	-0,281593	-0,281539	...	...
Honduras	...	-0,157649	-0,157665	...	...
Mexico	...	0,872877	0,872573	...	...
Panama	...	-0,573616	-0,573333	...	...
Peru	...	-0,368853	-0,368925	...	...
Paraguay	...	0,249521	0,249764	...	...
Dominican Republic	...	-0,0269	-0,026991	...	...
Uruguay	...	-0,83419	-0,833291	...	...

*Note: *** $p < 0.001$, ** $p < 0.01$, $p < 0.05$. The constant coefficients reflect the influence of each variable on the teenage fertility rate in Latin America during the analyzed period. Individual and fixed and random temporal effects refer to the specific variability of each country and over time in the model.

4.2 Analysis and Interpretation of the Teenage Fertility Model in Latin America

Once the effectiveness of the model has been evaluated, the interpretation of the variables that significantly predict teenage fertility in the 15 Latin American countries during the mentioned period is carried out. Table 4 reveals that the variables significant at 0.05% are education, with a coefficient of -0.202577; poverty, with 0.060799; and the constant, with a value of 1.895319. The latter can vary by country and contributes to identifying the nations in the region with higher fertility rates in the years studied.

Education: Education, presenting a negative coefficient, emerges as a factor that reduces teenage fertility in the 15 analyzed countries. It is crucial to note that the coefficients are expressed in logarithms, requiring a reconversion. In this case, the education coefficient would translate to -1.45. This indicates that for every additional year of education that adolescents aged 15 to 19 have, fertility decreases by 1.45. It is concluded, then, that education influences the reduction of fertility, as more educated individuals tend to choose to have fewer children.

Poverty: Poverty emerges as a significant factor associated with teenage fertility. There is a positive correlation between the poverty rate and the teenage fertility rate, indicating that more impoverished contexts tend to have higher rates of teenage fertility. Poverty, as a significant variable, is measured in the incidence rate of people living on less than \$1.90 per day. In this context, it is stated that for every increase in poverty among the studied adolescent population, fertility will increase at a rate of 0.41. This finding aligns with previous research, such as studies conducted by (insert relevant authors), which also identified a positive relationship between poverty in the Americas and teenage pregnancy.

Importance of Fixed and Random Effects: The inclusion of fixed and random individual effects improves the coherence and fit of the model to reality. These effects help consider the specific variabilities of each country and over time, providing more robust results.

Relevance for Public Policies: The importance of implementing educational and poverty reduction policies to address teenage fertility in Latin America is emphasized. Specific approaches tailored to the socio-economic dynamics of each country are essential.

Table 4. OLS model coefficients with random individual effects

Variable	Coefficient	Probability
Unemployment	-0,017801	0,504100
Education	-0,202577	0,006800
Gini	0,030215	0,809400
Poverty	0,060799	0,000000
C	1,895319	0,000000

*Note: *** $p < 0.001$, ** $p < 0.01$, $p < 0.05$. The coefficients reflect the influence of each variable on the teenage fertility rate in Latin America during the analyzed period. The significance of the variables is determined by their probability.

Figure 5 provides a detailed visualization of teenage fertility rates derived from the constant coefficients of each country, using the OLS panel data model with random effects. These results exhibit notable variations among the studied countries, reflecting the specific historical, social, economic, and cultural context of each nation.

For example, Argentina, Brazil, and Colombia show relatively high fertility rates. This phenomenon is attributed to various factors such as limited accessibility to sexual education and contraceptives, lower educational levels, and a significant percentage of unplanned pregnancies.

In contrast, countries with lower rates, such as Chile, Costa Rica, El Salvador, Honduras, Mexico, Panama, Peru, Uruguay, and the Dominican Republic, exhibit reduced rates of teenage pregnancies. This trend is linked to greater exposure to sexual education and the availability of contraceptives. These countries benefit from public health programs focused on improving the reproductive health of teenagers, along with awareness campaigns about the risks associated with teenage pregnancy.

Finally, Bolivia and Ecuador show a slight decrease in teenage fertility rates over the studied period. This decline is attributed to the implementation of public health programs aimed at improving access to sexual education and contraceptives, as well as initiatives to reduce the number of pregnancies in the teenage population.



Figure 5. Adolescent fertility rate by country studied

5. Discussion

The analysis supported by Salamanca, Rodríguez, and others highlights persistent challenges in adolescent fertility in Latin America (1990-2019). Escalona, Lavanderos, and Li emphasize socio-economic and cultural complexity. Adhena, Fikre, and Okanlawon point out key determinants and persistent vulnerabilities. Nove emphasizes the urgency of demographic policies aligned with the SDGs, while España Paredes and Shackleton underline health impacts and socio-economic disadvantages. Specific evidence-based strategies are urgently needed to sustainably reduce the adolescent fertility rate, a multifaceted challenge in the Latin American region.

The analysis, supported by studies from Salamanca, Rodríguez, Venegas Ortega, and Valles Berenice, highlights variations in adolescent fertility in Latin America. Argentina and Brazil present distinctive patterns, while Chile experiences a constant decline due to improvements in education and access to contraceptives, supported by Gayet et al. and Adhena and Fikre. The statistical model emphasizes the relevance of education and poverty, supported by España Paredes et al. and Shackleton et al., highlighting their impact on reproductive decisions. These findings underscore the need for specific policies tailored to local dynamics to address the complexity of adolescent fertility.

6. Conclusions

The social issue associated with teenage fertility rates in Latin America emerges as a significant concern, evidenced by a regional rate of 63 births per 1,000 adolescents aged 15 to 19. This value contrasts significantly with the global average of 44 births per 1,000 adolescents, indicating crucial challenges in the region.

The high levels of teenage fertility in the region are multifaceted and intertwined with various factors. Education, limited access to health services, social pressure to marry, and lack of opportunities for women emerge as key elements influencing this issue. These factors, in turn, have significant ramifications for Latin American countries, ranging from an increase in external debt burden to higher rates of illiteracy, crime, decreased labor force participation, and greater vulnerability to poverty, especially among young women.

In the specific scenario of 2017, Brazil and Mexico stand out as the countries with the highest teenage fertility rates in Latin America, reaching percentages of 98.1 and 96.6 per thousand adolescent women aged 15 to 19. These figures significantly exceed the global average of 54.3 per thousand adolescents, indicating the magnitude of the challenge in these nations. On the other hand, Ecuador has a moderate and relatively stable fertility rate over the years. According to the National Institute of Statistics and Censuses (INEC), the female fertility rate in Ecuador remained at 45.4 births per 1,000 adolescent women in 2015 and 2016. This figure is below the national average of 73.9 births per 1,000 women aged 15 to 49, indicating a more moderate landscape compared to other countries in the region.

Addressing the challenge of teenage fertility in Latin America requires a comprehensive approach that combines educational measures, improved access to sexual and reproductive health services, as well as a review of social structures contributing to pressure and limited opportunities for young women. Regional differences highlight the need for approaches tailored to the specific reality of each country, recognizing the complexity of the factors involved and working towards solutions that drive positive long-term change.

As potential future work, a more in-depth analysis of cultural, religious, and contextual factors specific to each country could provide a more comprehensive understanding of variability in teenage fertility rates. Additionally, complementing quantitative findings with qualitative research, such as interviews and ethnographic studies, could shed light on the perceptions, attitudes, and individual experiences underlying teenage fertility rates.

7. Future Research Directions

Studies on teenage pregnancy are complex and there are associated challenges. Future studies could integrate a multifaceted approach. Furthermore, it is suggested to explore socioeconomic, cultural, and gender factors in prevalence with teenage pregnancy in Latin America. Exploring the role of comprehensive sexual education from a reproductive health perspective and the creation, proposal, and implementation of effective policies as strategies to reduce and prevent teenage pregnancy is suggested. Including technology as part of dissemination and assertive communication. Proposing research lines to enrich existing knowledge by providing more effective guidance for all population quintiles.

8. Limitations

Addressing the challenge of teenage fertility in Latin America requires a comprehensive approach that combines educational measures, improved access to sexual and reproductive health services, as well as a review of the social structures contributing to pressure and limited opportunities for young women. Regional differences underscore the need for approaches tailored to the specific reality of each country, recognizing the complexity of the factors involved and working towards solutions that drive positive long-term change.

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