

Revista Investigaciones Turísticas, nº 28 (2024), pp 64-82.


ISSN: 2174-5609


DOI. <https://doi.org/10.14198/INTURI.25793>

Cita bibliográfica: Hernández-Medina, P. y Valencia Velasco, B. (2024). Can tourism contribute to gender equality? Evidence from South American countries. *Investigaciones Turísticas* (28), pp. 64-82. <https://doi.org/10.14198/INTURI.25793>

Can tourism contribute to gender equality? Evidence from South American countries

¿Puede el turismo contribuir con la igualdad de género? Evidencia en países suramericanos

Patricia Hernández-Medina , Universidad Nacional Chimborazo, Ecuador
patricia.hernandez@unach.edu.ec

Boris Valencia Velasco , Universidad Nacional Chimborazo, Ecuador
boris.valencia@unach.edu.ec

ABSTRACT

The research examines the causal relationship between tourism and gender equality for 10 South American countries in the period 2006-2019. Panel data modelling has been used to account for unobservable heterogeneity derived from time series and cross-sectional data. Estimates of the gender equality index have been made for both fixed and random effects for four models, considering as explanatory variables international tourism receipts (% of exports) which were kept constant in each of the estimates, in addition to real GDP per capita (model 2), education expenditures (model 3) and female labor participation in agriculture, industry and services (model 4). Based on the estimates we selected, through the Hausman test, those with fixed effects in three of the four models, which were corrected for the presence of autocorrelation and heteroskedasticity problems. The results show that tourism has a positive and significant effect on gender equality. With respect to the control variables, education expenditure and GDP per capita are found to be statistically significant, showing a direct relationship with gender equality, similarly to international tourism receipts. An inverse relationship is identified between gender equality and women's labor participation in agriculture and services.

Keywords: Tourism; gender equality; gender roles; panel data.

RESUMEN

La investigación contrastó la relación de causalidad del turismo en la igualdad de género para 10 países suramericanos, durante el periodo 2006-2019. Se utilizó la modelización a través de datos de panel, lo que permitió explicar la heterogeneidad no observable, derivada de datos de serie de tiempo y corte transversal. Se realizaron las estimaciones del índice de igualdad de género tanto para efectos fijos y aleatorios para cuatro modelos, considerando como variables explicativas a los ingresos derivados del turismo internacional (% de las

Fecha de recepción: 24/08/2023 *Fecha de aceptación:* 16/01/2024

Este trabajo se comparte bajo la licencia de Atribución-NoComercial-CompartirIgual 4.0 Internacional de Creative Commons

(CC BY-NC-SA 4.0): <https://creativecommons.org/licenses/by-nc-sa/4.0/> 

©2024 Patricia Hernández-Medina y Boris Valencia Velasco

exportaciones) que se mantuvo en cada una de las estimaciones, agregando el PIB per cápita real (modelo 2), los gastos en educación (modelo 3) y la participación laboral femenina en la agricultura, la industria y los servicios (modelo 4). A través de la prueba de Hausman se seleccionó únicamente la estimación de efectos aleatorios en el modelo 3; en el resto de los modelos se optó por efectos fijos, en los cuales se analizó la presencia autocorrelación y heteroscedasticidad, corrigiéndolos en los casos necesarios. Los resultados demostraron que el turismo, tiene un efecto positivo y significativo en la igualdad de género. Con respecto a las variables de control resultaron ser estadísticamente significativa el gasto en educación y el PIB per cápita, mostrando de manera similar a los ingresos por turismo internacional, una relación directa con la igualdad de género. Se identificó una relación inversa entre la igualdad de género y la participación laboral de la mujer en la agricultura y en los servicios

Palabras Clave: Turismo; igualdad de género; roles de género; datos de panel.

I. INTRODUCTION

1.1 Contextualisation

The conceptualisation of sustainable development from the 1960s until the Brundtland report (1987) has allowed us to move from a scheme of economic growth with great social and environmental inequalities (Sachs, 2015), to a model thought in intergenerational terms. This has meant proposing a growth model that not only considers traditional production factors, but also includes nature as an exhaustible resource, with a fixed stock that must be preserved (Pérez, 2012), which provides ecosystem services for provisioning and regulation, not only for production, but also for human survival. This challenge of reducing social inequalities, which in the case of Latin America even implies considering that 20% of the population has 80% of the resources (Rodríguez, 2019), requires the joint work of all the dimensions of sustainable development.

Considering that today sustainable development is not only considered in terms of intergenerationally, but also in the joint achievement of greater social well-being and the preservation of nature, growth becomes a means and not an end. This is possible through the consolidation of the social, environmental, economic and institutional dimensions that make up sustainable development (Sepúlveda, 2008).

These dimensions are materialised through the 17 Sustainable Development Goals (SDGs). A hierarchy is then proposed in which priority is given to environmental preservation, followed by social development and finally economic growth. Summarises these ideas by stating that "the SDGs promote socially inclusive and environmentally sustainable economic growth" (Sachs, 2015, p. 20).

In Latin American countries, social objectives and gender equality have been considered relevant in the generation of public policies of national and local governments, based on SDG 5 associated with gender equality, which in turn contemplates goals related to the reduction of discrimination, the valuation of household work, the expansion of opportunities, control of sexual and reproductive life, and empowerment, among others.

Cases such as Ecuador, where not only is nature recognised in the Constitution as the country's heritage and new social production business models are encouraged, but where for more than a decade its development plans have established specific objectives for the

reduction of the gender gap. Countries such as Mexico and Colombia have incorporated specific gender equality objectives, while Argentina and Uruguay have specific national plans to consolidate gender equality and diversity. These plans not only establish the regulations governing equality, but also propose actions for the consolidation of equality through the transformation of traditional gender roles.

This transformation implies consolidating levels of empowerment, access to services, justice and employment opportunities. In this sense, women are more likely to be employed in activities linked to the service sector, especially in tourism, due to the specific characteristics required by this type of responsibilities.

Tourism in this context is considered an important factor in achieving gender equality (Boluk et al., 2017), although Latin American countries face challenges related to the lack of training and development for women in the tourism industry (Boussut and Salin, 2018). In response to these challenges, some South American countries have implemented policies and programmes promoting gender equality through research, training and awareness raising.

Based on this reality, this study aims to determine the impact of tourism activity on the achievement of gender equality in South American countries, also considering other variables that may be relevant in its explanation, such as income levels, spending on education and female labour participation in certain sectors, under the hypothesis of a direct relationship between gender equality and international tourism revenues, based on a macro approach.

1.2 Literature review

Although the literature identifies positive effects of tourism on gender equality, there is no consensus that the development of the tourism sector reduces the gender gap because, on the one hand, it increases the possibility of labour insertion by generating sources of employment traditionally occupied by women, but it has also been shown that working conditions are not optimal in terms of benefits and that it exacerbates traditional gender roles, without addressing structural inequalities (Moreno and Cole, 2019).

Differentiating these effects requires different approaches: at the macro level, it seems that the increase in job opportunities has a positive effect on gender equality, but at the micro level, analysing the conditions of employability and the activities carried out, it does not seem to achieve the required transformation in terms of gender roles and decent work, which would result in modifying the social structure of values and beliefs characteristic of patriarchal systems (Ferguson and Moreno, 2015; Ferguson, 2015).

Studies that argue that tourism fails to transform the social structure leading to greater gender equality are based, as proposed by Sanggyeong et al. (2022), on a minority participation of women in managerial positions in the sector, with more women taking on occasional responsibilities or working in precarious conditions, which can be explained through theories such as the glass ceiling.

The "glass ceiling" theory is a concept used to describe the invisible barriers that prevent women from advancing and reaching leadership and managerial roles in organisations and companies. This theory suggests that, although women can make significant progress in their careers, they often encounter an invisible boundary or barrier that prevents them from advancing beyond a certain hierarchical level.

The main explanations associated with the glass ceiling theory relate to discrimination and prejudice, organisational culture, structural barriers, gender stereotypes, and poor work-life balance. It is argued that there are ingrained prejudices and stereotypes in society and in organisations that associate leadership roles with characteristics and skills traditionally attributed to men. These prejudices can influence decisions about recruitment, promotion and allocation of responsibilities, creating gender inequalities in access to leadership roles.

Costa et al. (2017) call this glass ceiling phenomenon, associated with a minority participation of women in leadership positions in the sector and mainly in low-skilled jobs, the feminisation of tourism. Thus, despite employing a significant proportion of women, the weight of women in management is very low, given that decisions are not linked to rational profit-maximising behaviour, but are based on gender roles, associated with childcare, travel possibilities or even working night shifts or overtime (Kanji and Menon-Sen, 2001; Morini, 2014).

So, there is both vertical discrimination by position and horizontal discrimination in terms of different wages by gender for the same activity, which is not the result of experience or education, as evidenced by Cave and Kilic (2010) in their research for Turkey.

This duality in the effects is also exposed by Duffy et al. (2015), who in their study state that, although tourism has generated more job opportunities and has managed to empower women economically and socially, it has shown difficulties in reconciling family and work, by limiting the fulfilment of reproductive roles.

Therefore, it is not enough to include gender equality in the approach, but intersectionality and work from a real gender perspective that considers social transformations is required, initiating its recognition in the tourism sector, at least by the World Tourism Organisation (UNWTO), which has not taken place (Moreno and Cole, 2019).

In this way, from the feminist approach, at least three theories can be identified that try to explain this relationship between tourism and gender equality. Sanggyeong et al. (2022) present the theory of liberal feminism, positional feminism and post-structural feminism. In the first case, emphasis is placed on rights between men and women, so that opportunities and working conditions in the sector are equal, driving a positive effect through entrepreneurship and economic empowerment. In the context of tourism, liberal feminism could advocate for gender equality in the distribution of economic benefits and employment opportunities in the tourism industry.

In the case of positional feminism, intersectionality is introduced by considering the social and economic variables that enable the consolidation of gender equality. This approach highlighted the negative aspects of women in tourism, related to job insecurity, violence and sexual exploitation. Post-structural feminism, on the other hand, emphasises the power and social structures that limit or enhance gender equality, through culture and organisational practices.

As for the macro approach that seems to indicate a direct causal relationship, research such as that of Sanggyeong et al. (2022), which shows that most of these studies are related to countries in Europe (40%), Asia (21%) and North America (12%), barely 5% have been developed in Latin American countries and less than 50% are oriented towards secondary data, mainly focused on descriptive, conceptual analyses, reviews or reports.

Specifically in this macro approach, studies stand out such as those by Zhang and Zhang (2020) who analysed the impact of tourism on gender equality in 36 Asian countries during the period 2006-2018, verifying the direct and significant relationship between tourism and gender equality.

This direct and significant relationship was also identified by Nguyen (2022) who in his study for 111 countries considers in addition to the number of tourist arrivals used by Zhang and Zhang (2020), the incorporation of the variable of expenditures made by visitors, assessing its influence on gender inequality measured through employment, education, health and rights. She finds a bidirectional relationship between tourism and gender inequality, such that not only does tourism improve women's employment levels, education and social and economic rights, but greater equality also fosters the sector's development possibilities through travel decisions that can be taken from female empowerment.

Jackman (2022), unlike Zhang and Zhang (2020) and Nguyen (2022), fails to identify a single causal behaviour across the countries studied. It highlights the heterogeneity in the results, which depend largely on the indicators considered in terms of the labour market and the countries analysed, which could be related to the social structure, norms and values, gender discrimination and the absence of a regulatory framework that fosters equal opportunities (Mooney, 2018; Moreno and Cole, 2019). In the case of developed countries, the direct relationship is corroborated, but fails to identify any impact in the Middle East and North African countries, and even for Sub-Saharan African countries the relationship is inverse.

Despite this ambiguity in the results, based on the characteristics of each country's social structure and gender roles, which generate wage differences and lower employment benefits, as well as limiting women's possibilities for promotion to managerial positions, Genç (2018) attempts to highlight the advantages of tourism for women. The presence of the sector facilitates employment and stable income, educational, empowerment and relationship opportunities, as well as improvements in the quality of life in both social and economic aspects. These advantages or benefits are often strengthened as the analysis incorporates the relationship with education, economic development and employment.

Different studies at both micro and macro levels highlight the complexity of the relationship between tourism sector development and gender equality, as it incorporates elements of the labour market, such as informality and access to low-skilled or lower-paid jobs by women (Santero-Sánchez et al., 2015; Segovia-Pérez et al., 2019; Hutchings et al, 2020); the training required for domestic tourism development as opposed to international tourism, which demands more skills and training such as language skills; the social structure and gender roles that affect women's employment opportunities, economic capacity, empowerment and even travel decision-making (Wang and Li, 2020).

Thus, empirical evidence seems to show that, despite the heterogeneity of outcomes and the complexity of relationships, the tourism sector can drive gender equality as part of sustainable development, as strengthened regulatory frameworks and less conservative social structures stimulate access to equal employment opportunities for women and men, as well as more education, quality of life and women's empowerment. Even in developing regions and rural areas where conditions are not optimal and job opportunities scarce, it could be

considered as an employment alternative despite the lack of legally mandated employment benefits or limited access to management positions.

II. METHODOLOGY

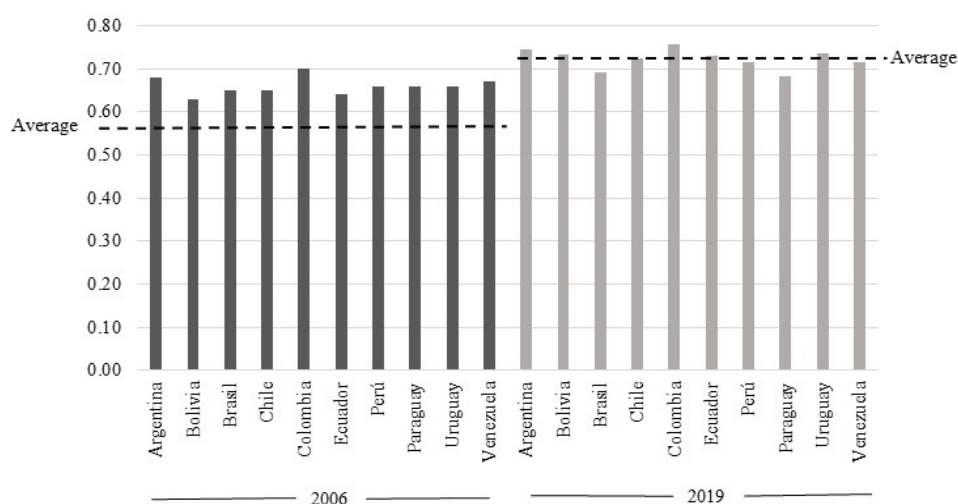
2.1 Variables employed

To identify the influence of tourism activity on gender equality, 10 countries were considered: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Peru, Paraguay, Uruguay and Venezuela, analysed from 2006 to 2019, thus excluding the period of the pandemic that restricted mobilisation for tourism reasons.

The estimation considered the gender gap index estimated by the World Economic Forum (WEF) in the study period, while the explanatory variables were gross domestic product (GDP) per capita in constant dollars; international tourism receipts as a percentage of exports as a measure of tourism activity; education expenditure as a percentage of gross national income (GNI), which captures the effects of the education variable; and female employment in agriculture, industry and services, following the proposal of Zhang and Zhang (2020).

Regarding the gender gap index, which is estimated on a scale from 0 to 1, with this value indicating greater equality, the countries studied experienced growth during the period analysed, although this does not necessarily represent an improvement in the position, given that other countries have obtained better performance. Bolivia's growth of 16.5% stands out, going from 0.63 points in 2006 to 0.73 in 2019, or Ecuador's growth of 13.90%, increasing from 0.64 to 0.73; while Paraguay and Brazil registered the lowest growth rates, with 3.4% and 6.3% respectively, as shown in Figure 1.

Figure 1. Gender Gap Index for South America (2006 and 2019)



Note: Data taken from World Economic Forum reports

The average gender equality index of the countries analysed was 0.66 in 2006, improving to 0.72 by 2019, which reflects the region's efforts to promote policies that reduce the gaps in education, health, labour market and political participation, as well as the enactment of a normative and regulatory framework that promotes equality.

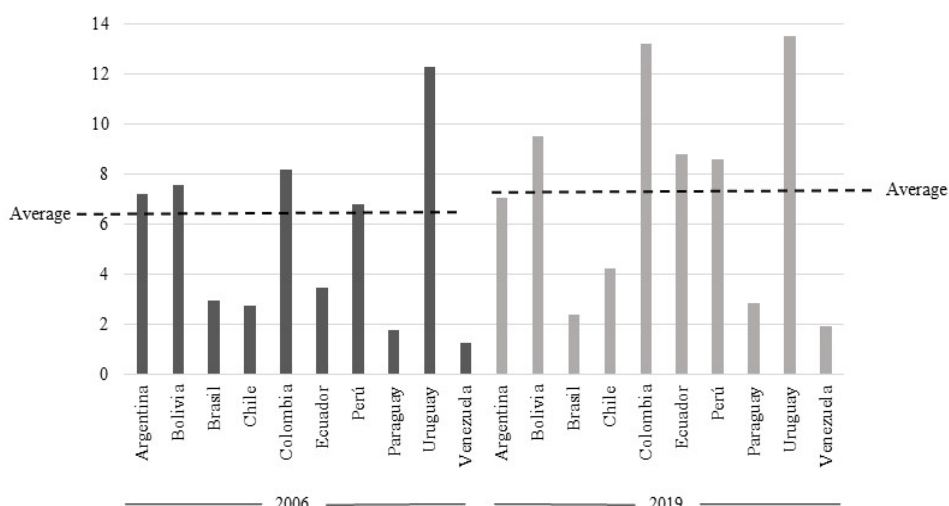
With respect to the performance of the tourism sector, there was a notable growth in the number of international tourists visiting South America. This increase was due to several factors, including economic development in the region, improvements in transport and accommodation infrastructure, and increased promotion of South American destinations in the global market. While traditionally popular countries such as Brazil, Argentina and Peru continued to attract most visitors, other countries began to emerge as important tourist destinations. Colombia, Chile and Ecuador, for example, experienced an increase in tourist arrivals due to improved security, investment in tourism promotion and diversification of tourism offerings.

In the study period, South America established itself as a leading destination for nature and adventure tourism, attracting visitors with its unique landscapes, biodiversity, national parks and opportunities for activities such as hiking, trekking, climbing and wildlife viewing. Destinations such as Patagonia, the Amazon, the Galapagos Islands and Machu Picchu remained some of the most popular.

Between 2006 and 2019, international tourism receipts, the explanatory variable used in this study, showed a generally positive behaviour with some fluctuations due to economic, political and social factors, such as the 2008-2009 global financial crisis that had a temporary impact on tourism receipts, as the global economic downturn reduced people's willingness and ability to travel internationally. However, recovery for the region began relatively quickly compared to other parts of the world, thanks to the economic strength and stability that several South American countries were beginning to experience.

Fluctuations in exchange rates also affected tourism receipts. In some cases, the devaluation of the local currency made travel to South America cheaper for international tourists, thereby increasing tourism inflows and revenues. In other cases, economic instability and inflation may have deterred international tourists, as well as political challenges and natural disasters; however, the region showed resilience and capacity to recover from these situations, as seen in the comparison of international tourism receipts as a percentage of exports between 2006 and 2019 (Figure 2).

Figure 2. International tourism receipts (% exports) South America, 2006 and 2019



Note: Data taken from the World Bank (2023)

Between 2006 and 2019, international tourism receipts in South America in general showed a positive trend, reflecting the growth of the tourism sector in the region, from an average value of 5.42% in 2006 to 7.21% in 2019, with Uruguay, Colombia and Bolivia standing out, where receipts accounted for a significant weight of the value of their exports.

2.2 Modelling causality

The dependent variable was gender equality as measured by the gender gap index, on a scale of zero to one, where one represents maximum equality, while the explanatory variable of interest is the revenue derived from international tourism in relation to each country's exports. Receipts are defined as all payments made by non-resident and non-national inbound visitors.

Expenditure on education (% GNI) is all current operating expenditures on education, including wages and salaries, and excluding all capital investments in equipment and buildings. Finally, there is the employment rate of women in the industry, services and agriculture sectors, with the industry sector comprising mining and quarrying, manufacturing, construction and utilities, the commerce sector encompassing all activities related to administration, teaching, tourism, etc., while the agriculture sector considers all farming, fishing and hunting activities.

While the gender gap index and the ratio of international tourism receipts to exports for each country are the relevant variables, to control for the impact of other regional factors, the other variables related to the economy, education and employment are introduced as control variables in the model.

These three elements play an important role in the model. Damjanovic and Selvaretnam (2019), argued that because of the increase in physical capital and human capital brought about by economic development, women's productive capacity improved relatively, promoting gender equality. On the other hand, through education, being a fundamental right and a factor to mitigate poverty, women can improve their labour skills and knowledge, raising their labour competitiveness (Channa, 2015). In addition, employment allows women to gain a greater voice within their families and society (Ferragina, 2020).

Thus, the following equation was estimated:

$$Gap_{it} = \beta_0 + \beta_1 T_{it} + \beta_2 GDPp_{it} + \beta_3 edu_{it} + \beta_4 agric_{it} + \beta_5 ind_{it} + \beta_6 ser_{it} + \varepsilon_{it} \quad (1)$$

Where the dependent variable Gap_{it} is given by the gender gap index of the World Economic Forum; while the explanatory variable of interest T_{it} is determined by the revenue derived from international tourism in relation to each country's exports (World Bank, 2023). The rest of the explanatory variables were obtained from World Bank statistics and are given by GDP per capita ($GDPp_{it}$), education expenditure as of GNI (edu_{it}), and the female employment rate in the agricultural ($agric_{it}$), industrial (ind_{it}) and services (ser_{it}) sectors.

The estimation, given the characteristics of the data, which combines the time series with the cross-section, requires the use of panel data methodology (Montero, 2011), as suggested by authors such as Wooldridge (2002) and Greene (2000). This starts from the idea of the importance of capturing heterogeneity through estimation.

Panel data present heterogeneity both between individuals (countries) and over time, which is why estimation through pooled data, in which the sources of variability derived from the individual component (between), or the time component (within) are obviated, is not usually recommended.

The unobserved heterogeneity forms part of the error term of the estimation, in such a way that this will be the sum of the error of the estimation itself, white noise, and the error resulting from the heterogeneity that is not possible to collect through the explanatory variables, which is the unobserved heterogeneity that is permanent over time.

For the estimation it is possible to consider that this heterogeneity is correlated with the explanatory variables ($Correlation(X_{it}, \alpha_i) \neq 0$) and therefore comes from the differences between individuals, or otherwise there is no such correlation because it is assumed that it comes from chance. In the first case it would be estimated through fixed effects panel data, while in the second case through random effects panel data.

Assuming then that the correlation is non-zero, the resulting estimate is biased. To avoid the bias the fixed effects estimation calculates the difference of each variable and errors from their means. In the case of random effects estimation, which assumes that the correlation between the explanatory variables and the unobserved error is zero, the way of estimating is similar in the sense that differences are calculated, but in this case the mean is weighted by a factor.

The selection between fixed and random effects is done through the Hausman test (Montero, 2005), which has as null hypothesis the preference of random effects over fixed effects. In case of rejecting, it and choosing fixed effects it will be necessary to validate the absence of autocorrelation and heteroscedasticity (Wooldridge, 2002; Montero, 2011).

To test for the absence of autocorrelation one can use the serial correlation for panel data proposed by Drukker (2003) and Wooldridge (2002), whose hypothesis is the absence of autocorrelation; while for heteroskedasticity one uses the modified Wald statistic for panel data, proposed by Greene (2000), with null hypothesis of homoskedasticity of the variance. In case of autocorrelation or heteroscedasticity problems, generalized least squares estimation for panel (GLS) can be used, which is based on the heteroscedastic and autocorrelated covariance matrix of the errors.

III. RESULTS

Since the data represent individuals (countries) as well as time series, heterogeneity determines the most suitable type of panel data estimation, either fixed effects or random effects. To assess this heterogeneity, the deviation is analysed either across individuals or over time (table 1).

Table 1. Heterogeneity analysis of the data

Variable	Mean	Standard deviation
Gender Gap Index	Total	0.6971
	Between	0.0161
	Within	0.0225

Number of tourist arrivals	Total	6.2061	4.0576
	Between		3.9777
	Within		1.5252
GDP per capita	Total	13336.31	5369.829
	Between		5067.833
	Within		2356.721
Expenditure on education	Total	4.5489	1.2368
	Between		1.1317
	Within		0.6072
Female labour force participation in agriculture (%)	Total	12.274	10.8923
	Between		11.2927
	Within		1.7448
Female labour force participation in industry (%)	Total	10.689	1.9298
	Between		1.7768
	Within		0.9287
Female labour force participation in services (%)	Total	76.893	10.7359
	Between		11.0821
	Within		1.9830

The average values were estimated considering the countries and the years of study of all the data obtained. Thus, the average gap index of the countries analysed was 0.69, whose value has increased in the study period by around 0.12 points. When analysing the maximum and minimum values between countries, the difference narrows to 0.05 points, which is reflected in the heterogeneity estimated through the deviation, which is higher over time and lower between countries.

For international tourism receipts (% of exports) the average stood at 6.20%, with greater variability between countries than over time. The difference between the maximum and minimum value of tourism receipts between countries is around 13% of exports, while over time it slightly exceeds 7%.

GDP per capita averaged USD 13336.31 (at current prices), which, unlike gender equality, has greater heterogeneity between countries than over time. Between countries, the difference between the maximum and minimum values exceeds USD 14,000, while over time it is reduced by half.

For the rest of the variables, a similar behaviour is observed in the sense that the variability between countries is greater than over time. It is important to highlight the participation rates of women in the labour market by sector. As reported in the literature, they are mostly present in the services sector, followed by agriculture, although very similar to the industrial sector, which is in the last position.

Given the results in terms of heterogeneity, the most suitable estimation should be fixed effects, but for this it is necessary to carry out the Hausman test and each of the estimations. Firstly, table 2 shows the fixed effects estimates grouped into four models, the first one including only the international tourism receipts variable (% exports), the second model incorporating GDP per capita, the third one including education expenditure, and finally, in the fourth model, in addition to all the explanatory variables indicated, the female employment rates in the different sectors (agriculture, industry and services) were added.

Table 2. Fixed effects estimate for gender equality

Variables independent	Model 1 Coefficient	Model 2 Coefficient	Model 3 Coefficient	Model 4 Coefficient
Log international tourism receipts (% exports)	0.0627*** (0.0108)	0.0316*** (0.0091)	0.0294*** (0.0090)	0.03811*** (0.0089)
Log GDP per capita		0.1072*** (0.0119)	0.0936*** (0.0128)	0.0727*** (0.0138)
Log education expenditure (% GNI)			0.0407** (0.0160)	0.0352** (0.0169)
Log employment agriculture (%)				-0.0021 (0.0109)
Log employment in industry (%)				0.0081 (0.0292)
Log occupation services				0.2831*** (0.0829)
Constant	-0.4618*** (0.0174)	-1.4238*** (0.1081)	-1.3523*** (0.1095)	-2.4000*** (0.3547)
N (Observations)	137	137	137	137
N (Groups)	10	10	10	10
Adjusted R2	0.1484	10.1082	0.1454	0.0576
Over time	0.2100	0.5193	0.0314	0.5955
Between groups	0.2329	0.0260	0.1454	0.0067
Test F	33.50***	67.50***	49.12***	29.20***
F-test (Pooled data)	8.52***	22.23***	19.83***	19.86***
Autocorrelation	15.645***	10.173***	10.327**	6.105**
Heteroscedasticity	212.06***	91.38***	186.42***	222.28***

Note: Significance less than 1% (***), more than 1% up to 5% (**) and more than 5% up to 10% (*)

The rationale for estimating the four models while keeping the variable of interest (international tourism receipts) in all estimations is to validate whether its behaviour in terms of significance and the direction of the relationship is preserved as explanatory variables are added. As can be seen, international tourism receipts are statistically significant and with the expected sign (positive) regardless of the estimated model.

When analysing the results of each estimation, it is evident that all models show joint significance of the variables and are preferred to the pooled data estimates (F-test for pooled data). Despite this, there are autocorrelation and heteroscedasticity problems in all the estimations, so, in case of choosing the fixed effects estimation in the Hausman test, they must be corrected through generalised least squares, due to its advantages in the presence of both problems.

In a similar way to the fixed effects estimation, the random effects estimation is presented, considering 4 models in which the explanatory variables were included until the totality of these variables was completed (table 3).

Table 3. Random effects estimate for gender equality

Variables independent	Model 1 Coefficient	Model 2 Coefficient	Model 3 Coefficient	Model 4 Coefficient
Log international tourism receipts (% exports)	0.0365*** (0.0075)	0.0255*** (0.0076)	0.0269*** (0.0074)	0.0266*** (0.0077)
Log GDP per capita		0.0792*** (0.1034)	0.0678*** (0.0114)	0.0555*** (0.0146)
Log education expenditure (% GNI)			0.0568*** (0.0146)	0.0567*** (0.0155)
Log employment agriculture (%)				0.0039 (0.0070)
Log employment in industry (%)				-0.0234 (0.0265)
Log occupation services				0.0273 (0.0767)
Constant	-0.4194*** (0.0137)	-1.1490*** (0.1034)	-1.1274*** (0.0998)	-1.0813*** (0.2965)
N (Observations)	137	137	137	137
N (Groups)	10	10	10	10
Adjusted R2	0.1484	0.1129	0.1801	0.1652
Over time	0.2100	0.5190	0.5329	0.5258
Between groups	0.2329	0.0313	0.0490	0.0212
Wald/Chi2	23.70***	84.94***	114.90***	97.61***
Test Breusch Pagan (pooled)	54.71***	77.73***	104.44***	
Hausman	11.21***	112.72***	14.66	45.41***

Note: Significance less than 1% (***), more than 1% up to 5% (**) and more than 5% up to 10% (*)

In the random effects estimations, similarly to the fixed effects estimations, in all model's international tourism receipts turn out to be statistically significant and positively related. The estimates also show joint significance of the explanatory variables, as well as a preference for random effects over pooled data, as observed in the Breusch and Pagan test.

Model selection, as discussed, was performed using the Hausman test, rejecting the null hypothesis in all models except the third, in which random effects are preferred. Thus, for models 1, 2 and 4 it was necessary to correct for autocorrelation and heteroscedasticity by generalised least squares (table 4).

Table 4. Fixed-effects model corrected by generalised least squares

Variables independent	Model 1 Coefficient	Model 2 Coefficient	Model 4 Coefficient
Log international tourism receipts (% exports)	0.0256*** (0.0061)	0.0230*** (0.0061)	0.0182*** (0.0057)
Log GDP per capita		0.0349*** (0.0114)	0.0273** (0.0117)
Log education expenditure (% GNI)			0.0437*** (0.0140)
Log employment agriculture (%)			-0.0133*** (0.0041)

Log employment in industry (%)			-0.0104 (0.0200)
Log occupation services			-0.1507** (0.0597)
Constant	-0.4505*** (0.1000)	-0.7311*** (0.1072)	-0.0143 (0.2300)
Test Wald	17.37***	28.25***	67.19***

Note: Significance less than 1% (***), more than 1% up to 5% (**) and more than 5% up to 10% (*)

In all models, international tourism receipts were found to be statistically significant, showing a direct impact on gender equality. There is also evidence of a positive and significant relationship between gender equality and GDP per capita and expenditure on education, as reported in the literature. However, the relationship with the rate of female employment in the agricultural and service sectors reduces gender equality, given that it is linked to jobs associated to precarious employment and the process of feminisation of activities, which have been relegated to women.

As for the third model selected, which was estimated by random effects, international tourism income was also significant and with a direct relationship, but also education expenditure and GDP per capita, which also showed a positive relationship with gender equality.

IV. DISCUSSION AND CONCLUSIONS

Gender equality depends on multiple factors at both the micro and macro levels, although it is often associated with employment opportunities, economic income, educational attainment and political empowerment. About employment and income, Kelkar (2005) argued that underemployment is the main cause of women's poverty, which in turn leads to unequal gender gaps.

When analysing the impact of the tourism sector in reducing these inequalities, two approaches are addressed, a micro one associated with understanding gender wage differentials, training gaps, women's opportunities for advancement and constraints or obstacles related to social structure, gender roles, norms and values. A macro one, which discusses aspects related to economic growth, labour participation rates, progress in terms of education, domestic and international tourism receipts, international tourist arrivals as a proportion of the population.

The relative ease of women's entry into the sector's labour market is due, firstly, to the fact that low levels of knowledge and skills are required in positions of low responsibility, which, according to Botonaban (2014), are those with the highest female participation. Secondly, according to the World Tourism Organization (2019) report, the low start-up costs of the tourism industry have encouraged more women to become employees in the sector, allowing some to become entrepreneurs.

Despite existing gaps in terms of wages, employment benefits and access to managerial positions, these employment and entrepreneurial opportunities have provided higher incomes for women. In this way, the tourism sector has, according to some studies, contributed to expanding employment opportunities and promoting gender equality, as

argued by Zhang and Zhang (2020), Pastore et al. (2020), Thrane (2008) and Boonabaana (2014).

Thus, the impact of tourism development contributes to gender equality through increased employment opportunities, which in turn influences empowerment through economic resources and training possibilities generated by on-the-job training processes.

The results indicate that at least in the South American countries studied, international tourism receipts as a percentage of exports show a positive and significant impact on the gender equality index, in the sense that it corroborates the hypothesis that at the aggregate level the generation of additional income in the sector tends to increase women's employment opportunities (Genç, 2018; Zhang and Zhang, 2020; Sanggyeong et al., 2022; Nguyen, 2022). Thus, a 1% increase in international tourism receipts causes a 0.018% increase in the gender equality index considering the estimation with all explanatory variables.

Despite these macro results reporting the benefits of the growth of the tourism sector in improving equality levels, there are still challenges and areas where progress is needed. Some of the areas where the tourism sector has not yet achieved full gender equality include representation in leadership roles, the wage gap and economic inequality, gender stereotypes and roles, gender-based harassment and violence, and the possibility of work-family reconciliation (Kanji and Menon-Sen, 2001; Cave and Kilic, 2010; Morini, 2014; Duffy et al, 2015; Costa et al., 2017; Moreno and Cole, 2019; Santero-Sánchez et al., 2015; Segovia-Pérez et al., 2019; Hutchings et al., 2020).

Thus, it is necessary to remember that although job opportunities may be greater in the tourism sector, there are authors (Sanggyeong et al., 2022; Costa et al., 2017; Kanji and Menon-Sen, 2001) who exhort on the labour benefits and conditions in many jobs for women, which are usually more precarious than for men, even more so in labour markets such as in Latin America characterised by structural problems, little supply of suitable employees and inability to absorb the workforce.

Understanding the structure of the labour market, gender wage gaps, the types of jobs with greater female participation or opportunities for access to management positions requires a micro approach that allows characterising the working conditions of women, the existence or not of discrimination and the cultural and social factors that may lead to the process of feminisation of tourism proposed by authors such as Kanji and Menon-Sen, (2001), Morini (2014) and Costa et al. (2017), which have not been addressed in this study.

About education, it is understood that an increase in spending on education in relation to available national income has implications for human capital, the results of which can be seen in the long term, but also in a more and better prepared workforce, able to enter the labour market more easily. In Latin America and South America, access to education for women has grown systematically, to the point of currently showing schooling rates of over 95%. This positive and significant impact of education spending on gender equality is corroborated by the results of this study, as suggested by authors such as Zhang and Zhang (2020). Higher spending on education tends to increase access to the system and thus enrolment and schooling levels, which increases the chances of participating in the labour market, although it does not guarantee equal pay and working conditions.

With respect to GDP per capita, it was statistically significant and positive in all valid estimates. Thus, countries with higher income levels imply greater equality, improving women's access to resources, health, education and more job opportunities (Eastin and Prakash, 2013; Damjanovic and Selvaretnam, 2020).

These differences in access to resources and opportunities are closely related to the social structure, the system of beliefs, norms and values, which condition gender roles (Hernández-Medina, et al., 2023), which is reflected in the results of the estimates in terms of the impact of female participation in certain sectors that reduce gender equality. Higher female participation in the agricultural and service sectors for the countries studied show a negative impact on the gender equality index.

This could be because in South America jobs in both sectors are socially assigned to women, with precarious working conditions, lower salaries and few possibilities for career advancement, which negatively influences the reduction of gender gaps. Indeed, traditional reproductive and community management roles for women, and production and political participation roles for men, establish patriarchal patterns that are present in Latin American societies, limiting the possibilities for women's labour insertion, making them opt for unsuitable jobs, deepening feminisation processes in sectors such as tourism and agriculture, and limiting their political and civic participation.

All these elements make it difficult to achieve levels of greater equality, even more so in traditional societies, despite efforts in terms of facilitating training processes in which the best results have been achieved (Moreno and Cole, 2019). This social structure through the feminisation of work in the sectors may explain the results in terms of female labour participation in other sectors, which was not statistically significant.

In this way, tourism in South America, due to the possibilities of its industry in terms of the existence of tourism resources specific to each destination, can be an engine for gender equality and the empowerment of women, through the generation of employment (World Tourism Organization, 2019). However, it is necessary to consider that the tourism industry also requires infrastructure (facilities and accessibility) that has not necessarily been consolidated in some South American countries.

Furthermore, gender gaps exist in tourism value chains in Latin America and the Caribbean (Moreno, 2023), which generate gender-based discrimination that undermines fundamental principles and rights at work, human rights and social justice, and weakens economic growth and the optimal functioning of enterprises and labour markets.

Governments, employers' organisations and trade unions have a key role to play in acting for gender equality in the world of work by addressing multiple issues, such as violence and harassment at work, as well as by encouraging the gradual modification of traditional gender roles that are part of the culture and social structure.

The challenges are multiple, as stated by Ferguson and Moreno (2015), associated with mainstreaming a gender perspective at all levels and in all sectors, considering policies, programmes and initiatives from both the public and private sectors, which necessarily involves incorporating both men and women in the development of all of them. It is not possible to change a structure of traditional gender roles, norms and social values without starting from the need to involve men in all these processes.

This change in the social structure is necessary to reverse the challenges that women's participation in the tourism sector still faces, associated with the limited participation in leadership positions and the marked involvement in unskilled positions, with lower salaries than men and in a situation of precarious employment.

REFERENCES

- Banco Mundial (2023). *Estadísticas*. Banco Mundial: <https://datos.bancomundial.org>
- Boluk, K., Cavaliere, C., & Higgins, F. (2017). Critical thinking to realize sustainability in tourism systems: reflecting on the 2030 sustainable development goals. *Journal of Sustainable Tourism*, 25(9), 1201-1204. <https://doi.org/10.1080/09669582.2017.1333263>
- Boonabaana, B. (2014). Negotiating gender and tourism work: Women's lived experiences in Uganda. *Tourism and Hospitality Research*, 14(1-2). <https://doi.org/10.1177/1467358414529578>
- Boussut, V. & Salin, E. (2018). El turismo en las Américas: territorios, experiencias y ¿nuevos desafíos? *IdeAs Idées d'Amériques*, 12, 1-9. <https://doi.org/10.4000/ideas.5721>
- Brundtland, G. (1987). *Nuestro Futuro Común*. Nueva York. Estados Unidos: Organización de las Naciones Unidas (ONU).
- Cave, P. & Kilic, S. (2010) The Role of Women in Tourism Employment with Special Reference to Antalya, Turkey. *Journal of Hospitality Marketing & Management*, 19 (3), 280-292. <https://doi.org/10.1080/19368621003591400>
- Channa, A. (2015). Education and International Development: An Introduction. *Progress in Development Studies*, 15(4), 387-389. <https://doi.org/10.1177/1464993415593423>
- Costa, C., Bakas, F., Breda, Z., Durao, M., Carvalho, I. & Cacador, S. (2017). Gender, flexibility and the 'ideal tourism worker.' *Annals of Tourism Research*, 64 (2017), 64-75. <https://doi.org/10.1016/j.annals.2017.03.002>
- Damjanovic, T., & Selvaretnam, G. (2019). Economic Growth and Evolution of Gender Equality. *Manchester School*, 88(1), 1-36. <https://doi.org/10.1111/manc.12274>
- Drukker, D. M. (2003). Testing for serial correlation in linear panel-data models. *Stata Journal* (3)2, 168-177. <https://doi.org/10.1177/1536867X0300300206>
- Duffy, L., Kline, C., Mowatt, R., & Chancellor, C. (2015). Women in tourism: Shifting gender ideology in the DR. *Annals of Tourism Research*, 52, 72-86. <https://doi.org/10.1016/j.annals.2015.02.017>
- Eastin, J., & Prakash, A. (2013). Economic development and gender equality: Is there a gender Kuznets curve?. *World Politics*, 65(1), 156-186. <https://doi.org/10.1017/S0043887112000275>
- Ferguson, L. (2015). "This is our gender person": The messy business of being a gender expert in international development. *International Feminist Journal of Politics*, 17 (3), 380-397. <https://doi.org/10.1080/14616742.2014.918787>

- Ferguson, L. & Moreno, D. (2015). Gender and sustainable tourism: reflections on theory and practice. *Journal of Sustainable Tourism*, 23(3), 401-416. <https://doi.org/10.1080/09669582.2014.957208>
- Ferragina, E. (2020). Family policy and women's employment outcomes in 45 high-income countries: A systematic qualitative review of 238 comparative and national studies. *Social Policy & Administration*, 54(7), 1016-1066. <https://doi.org/10.1111/spol.12584>
- Genç, R. (2018). The impact of tourism in the reduction of gender inequality. *Trakya Üniversitesi İktisadi ve İdari Bilimler Fakültesi E-Dergi*, 7(1), 20-35.
- Greene, W. (2000). *Econometric Analysis*. Upper Saddle River, NJ: Prentice--Hall.
- Hernández-Medina, P., Pinilla-Rodríguez, D., Toapanta, J., & Delgado, C. (2023). Beliefs and social structure: Determinants of female labour participation in an Ecuadorian Andean community. *Economies*, 11(8), 212. <https://doi.org/10.3390/economies11080212>
- Hutchings, K., Moyle, C., Chai, A., Garofano, N. & Moore, S. (2020). Segregation of women in tourism employment in the APEC region. *Tourism Management Perspectives*, 34, 1-15. <https://doi.org/10.1016/j.tmp.2020.100655>
- Jackman, M. (2022). The effect of tourism on gender equality in the labour market: Help or hindrance? *Women's Studies International Forum*, 90, <https://doi.org/10.1016/j.wsif.2021.102554>
- Kanji, N., & Menon-Sen, K. (2001). What does the Feminisation of Labour Mean for Sustainable Livelihoods? International Institute for Environment and Development (IIED). https://www.iatp.org/sites/default/files/What_does_the_Feminisation_of_Labour_Mean_for_.htm
- Kelkar, G. (2005). Development Effectiveness through Gender Mainstreaming: Gender Equality and Poverty Reduction in South Asia. *Economic and Political Weekly*, 40(44), 4690-4699.
- Marchionni, M. (2019). *Brechas de género en América Latina. Un estado de situación*. Caracas: Banco de Desarrollo de América Latina (CAF).
- Mooney, S. (2018). Jobs for the girls? Women's employment and career progression in the hospitality industry. In R. Burke and J. Hughes (Eds.), *Handbook of human resource management in the tourism and hospitality industries* (pp. 184–215). Edward Elgar Publishing. <https://doi.org/10.4337/9781786431370.00016>
- Montero, R. (2005). *Test de Hausman*. Documentos de Trabajo en Economía Aplicada. España: Universidad de Granada.
- Montero, R (2011). *Efectos fijos o aleatorios: test de especificación*. Documentos de Trabajo en Economía Aplicada. Universidad de Granada. España
- Moreno, D. & Cole, S. (2019). No sustainability for tourism without gender equality. *Journal of Sustainable Tourism*, 27 (7), 903-919. <https://doi.org/10.1080/09669582.2019.1588283>
- Moreno, D. (2023). *Brechas de género en las Cadenas Globales de Valor de América Latina y el Caribe: nuevos y viejos desafíos en un contexto de incertidumbre*. Santiago: CEPAL.

- Morini, C. (2014). *Por amor o a la fuerza, Feminización del trabajo y biopolítica del cuerpo*. Madrid: Editorial Traficante de sueños.
- Nguyen, C. (2022). Tourism and gender (in)equality: Global evidence. *Tourism Management Perspectives*, 41, 1-14. <https://doi.org/10.1016/j.tmp.2021.100933>
- Pastore, F., Webster, A., & Hope, K. (2020). Assessing the Role of Women in Tourism Related Sectors in the Caribbean. *International Journal Tourism Research*, 23(3), 378-400. <https://doi.org/10.1002/jtr.2413>
- Pérez, M. (2012). Conceptualización sobre el Desarrollo Sostenible: operacionalización del concepto para Colombia. *Punto de Vista*, III (5), 139-158.
- Rodríguez, M. (2019). *Nuestro planeta, nuestro futuro* Bogotá, Colombia: Penguin-Random House.
- Sachs, J. (2015). *La Era del Desarrollo Sostenible*. Barcelona, España: Deusto.
- Sanggyeon, J., Khoo, C. & Ling, E. (2022). Gender issues in tourism organisations: insights from a two-phased pragmatic systematic literature review. *Journal of Sustainable Tourism*, 30 (7), 1658-1681. <https://doi.org/10.1080/09669582.2020.1831000>
- Santamaría, E. & López, S. (2019). The social benefit of tourism activity Case Ecuador. *Revista Venezolana de Gerencia*, 24(86), 417-434.
- Santero-Sánchez, R., Segovia-Pérez, M., Castro-Nuñez, B., Figueroa-Domecq, C. y Talón-Ballesteros, P. (2015). Gender differences in the hospitality industry: A Job quality index. *Tourism Management*, 51, 234-246. <https://doi.org/10.1016/j.tourman.2015.05.025>
- Segovia-Pérez, M., Figueroa-Domecq, C., Fuentes-Moraleda, L. & Muñoz-Mazón, A. (2019). Incorporating a gender approach in the hospitality industry: Female executives' perceptions. *International Journal of Hospitality Management*, 76, 184-193. <https://doi.org/10.1016/j.ijhm.2018.05.008>
- Sepúlveda, S. (2008). *Metodología para estimar el nivel de desarrollo sostenible de territorios*. San José, Costa Rica: Instituto latinoamericano de Cooperación para la Agricultura.
- Thrane, C. (2008). Earnings differentiation in the tourism industry: Gender, human capital and socio-demographic effects. *Tourism Management*, 29, 514-524. <https://doi.org/10.1016/j.tourman.2007.05.017>
- Zhang, J., & Zhang, Y. (2020). Tourism and gender equality: An Asian perspective. *Annals of Tourism Research*, 85, 1-12. <https://doi.org/10.1016/j.annals.2020.103067>
- Wang, Y. & Li, M. (2020). Family Identity Bundles and Holiday Decision Making. *Journal of Travel Research*, 60(3), 486-502. <https://doi.org/10.1177/00472875209300>
- Wooldridge, J. M. (2002). *Econometric Analysis of Cross Section and Panel Data*. Cambridge, MA: MIT Press.
- World Economic Forum (2022). *Global Gender Gap Report*. Switzerland: World Economic Forum – WEF.
- World Tourism Organization (2011). *Global Report on Women in Tourism*. Madrid: UNWTO.

World Tourism Organization (2019). *Global Report on Women in Tourism* – Second Edition, Madrid: UNWTO. <https://doi.org/10.18111/9789284420384>

World Tourism Organization (2020). *Compendium of Tourism Statistics dataset* [Electronic], UNWTO, Madrid.

AUTHORS' CONTRIBUTION:

Author 1: Original conception of the paper, drafting and critical revision of the content and final approval of the version to be published.

Author 2: Data analysis, acquisition and interpretation

ACKNOWLEDGEMENTS:

The research has been developed as part of the education, work and gender project financed by the National University of Chimborazo.