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RESEARCH ARTICLE

How Tourism Affects Women's Employment in Asian Countries: An Application of Generalized Method of Moments and Quantile Regression

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Abstract

Based on data collected from 32 Asian countries between the years 1996 and 2020, this study investigated the effect that tourism has on women's participation in the workforce. This research makes use of a panel data model, one-step difference and system Generalized Method of Moments, and quantile regression. Trade, child mortality, foreign direct investment, and government spending are all taken into account in addition to gross domestic product. The findings demonstrate that an increase in tourism led to a greater level of female participation in the employment sector. Additionally, exports and foreign direct investment both contributed to a rise in the number of women in the labor force. However, both remittances and government spending reduce women's participation in the labor force. Out of the three subsectors, the increase in tourism led to more women working in the industry and service sectors. However, a rise in tourism tends to lead to a decline in the number of agricultural jobs held by women. Women's employment opportunities in the industrial and service sectors grow as a result of tourism but shrink in the agricultural sectors. To analyze labor dynamics, this study is crucial for policymakers. It's useful for promoting tourism in Asia and formulating policy related to it. Employment-related policies in the agricultural, industrial, and service sectors of Asian economies would also benefit greatly from this.

Keywords: Women Employment; Tourism; Economic Growth; Generalized Method of Moments; Quantile Regression

Introduction

Tourism, as a significant economic and cultural activity, has played a considerable impact on all aspects of the economy and society (Raihan & Tuspekova, 2022a; Raihan et al., 2022; Raihan & Tuspekova, 2022b). Cohen & Cohen (2019) mentioned that gender has consistently been a critical frontier concern in the sociological research of tourism. Without any question, women can benefit from tourism, which is supported by the extensive literature published on tourism previously (Ferguson, 2011; Figueroa-Domecq et al., 2015; Font et al., 2016; Alrwajfah et al., 2020; Zhang & Zhang, 2020). As more women enter the workforce, their contributions to the economy will grow. Social and economic factors affect the engagement of women in many ways. The level of education, family structure, the number of children, foreign investment, government expenditure, and the country's financial advancement are the most significant factors influencing women's participation in the workforce (Truong et al., 2020).

Employment opportunity in the tourism industry is heavily gendered and has long had a well-documented history of discrimination against women (Pritchard & Morgan, 2016). According to The United Nations' World Tourism Organization (UNWTO), women constitute around 54% of tourism workers (UNWTO, 2019). As a result of its working nature and employment stability, especially for young ethnic groups, and migrant employees, women are more interested in the tourist business. It was said by Buam (2013) that women play an important part in the hospitality industry, from front-of-house executives to cleaners to chefs. Tourism is a multi-faceted sector that includes everything from lodging and

travel to art and entertainment (Raihan & Tuspekova, 2022c; Raihan & Tuspekova, 2022d). As a result of tourism, linked service industries (e.g., banking, transportation) grow, as well as job prospects for local residents (Raihan & Tuspekova, 2022e). There are several types of jobs in the tourism sector, from full-time to part-time and everything in between. According to Hutchings et al. (2020), some tourism jobs require minimal formal education or on-the-job training, which makes it easy to get jobs.

Asia was the fastest-growing constituency with a 7.4% upsurge in travel and tourism related gross domestic product (GDP) in 2019. The sustained growth of middle-income households, visa facilitation, greater connectivity, infrastructure investment, and government prioritization of the industry all contributed to this (Raihan & Tuspekova, 2022f; Raihan & Tuspekova, 2022g). In 2015, the tourism and travel industry directly supported 47.9 million jobs in Asia and Pacific region (UNWTO, 2017). Asia's quicker rate of economic expansion compared to the West gave birth to an "Asian wave," a change in the hotel and tourist industries' center of gravity (Chon, 2021). Powerhouse states like China, Japan, and India have all become key actors in the global economy as a result of the rapid pace of economic expansion across Asia. The World Travel and Tourism Council (WTTC) reported that the tourist business has a huge impact in Southeast Asia, where it generates $380 billion in sales and accounts for 12.1 percent of the overall economic GDP (WTTC, 2020).

Previous studies mainly focused on women's employment, entrepreneurship, income, education, and work environment related to tourism development (Figueroa-Domecq et al., 2020; Nassani et al., 2019; Gousiou & Lagos, 2021). Most of these studies are case-based and focus on the micro level and only a few studies address the regional level. To fill up the existing gap, this study takes into account the Asian region. This study is unique for four reasons. Firstly, this study used data from 32 Asian countries which are collected from reliable data sources. To measure the impact of tourism on women's employment, this study uses 24 years of data from 1996 to 2020. For the first time, this study measures the long-term effect of tourism and women's employment. Secondly, besides the tourism sector, this study addresses the service sector, agricultural sector, and industry sector to measure women's employment. Thirdly, this study considered variables like remittances, export, GDP per capita, female child mortality, and government expenditure. Lastly, a panel data model, one-step difference and system generalized method of moments (GMMs), and quantile regression are all employed in this study.

The rest of the article is structured as follows. The Introduction is followed by the section Literature Review, where relevant research studies have been discussed. The third section is the Methodology section, followed by the Results and Discussion section. Subsequently, the last section presents the Conclusion, policy recommendations, implications of the research, limitations of the study, and future research directions.

Literature Review

Women's employment is growing with the expansion of economic advancement (Kumari, 2018; Hussain & Rasheed, 2022). Several theoretical and experimental studies have shown that the support of women in the workforce has strong and positive links to financial development (Eng, 2006), and a clear correlation between women's interest in the workforce and their financial development is revealed. For the first time, Besamusca et al. (2015) have gathered a country-level dataset on women's engagement in the workforce in each of the 117 countries. Women are more seemingly to take part in the workforce if they have the option of paid maternity leave accessible, according to the researchers. Age, education, GDP, services, faiths, motherhood, health, and other factors are all considered independent variables in this analysis. Moreover, women's employment is closely linked with gender equality. Gender equality has been schemed at the UN Sustainable Development Summit in 2015 regarded as one of the crucial shared humanity goals. To demonstrate the linkages between gender parity and the other sustainable development goals (SDGs), this study can utilize the example of SDG 8 (Long term economic growth and congenial work). They proposed several measures to assist tourism businesses in improving their gender equality performance, increasing their impact to promote the accomplishment of the SDGs. They recommended that tourism's capacity to assist the SDGs would indeed be restricted without a genuine and serious commitment to gender equality, and sustainable tourism would stay an elusive "pot of gold." (Alarcó & Cole, 2019).

A considerable increase in tourism and gender studies over the last three decades has been observed (Swain, 1993; Norris et al., 1994; Burrell et al., 1997; Pritchard et al., 2007; Ferguson, 2009; Alarcón & Cole, 2019). Tourism and the engagement of women in the workforce will be the focus of this investigation. At least USD9.2 trillion in global GDP and 334 million jobs have been produced by tourism as a result of this economic sector (WTTC, 2020). From 2006 to 2018, researchers used an expanded technique of moments estimation procedure to investigate the impact of tourism on gender equality in 36 Asian countries. Tourism has a significant positive impact on gender equality, according to the studies. East and Southeast Asian countries had the most substantial statistical impact, followed by West and Central Asian countries and South Asian countries (Zhang & Zhang, 2020). In this respect, Mishra et al. (2020) depicted that

from 1997 to 2015, the impact of gender inequalities on the economic expansion of 30 Asian economies. It showed that the gender equity scale of nutrition, literacy, income, and democratic representation positively impacted Asia's economic growth. Moreover, Hutchings et al. (2020) argued that ongoing gender segregation across economies and socio-cultural creates impediments to women's engagement and advancement in tourism. Their study offers human resource management strategies, policy initiatives, and implications for eliminating gender segregation, enhancing management representation, and offering fair job opportunities. Women become more educated and have better-paying employment alternatives, and their participation as entrepreneurs in SMEs may drop.

Furthermore, Rinaldi and Salerno (2019) focused that, in emerging economies, women's overall employment varies widely, extending from 30% in South Asia to more than 60% in Sub-Saharan Africa, even though national circumstances may hamper women's growth. Asia is the most populous region of the world, and the variation of countries is higher than in any other region. Asia comprises developed and very high GDP per capita countries like Hong Kong, Japan, Brunei, South Korea, Singapore, Israel, United Arab Emirates (UAE), Saudi Arabia, Kuwait, Qatar, and Oman. In Asia, male labor force participation ranges from 52 percent in Timor-Leste to 89 percent in Nepal, while female labor force participation ranges from 16 percent in Afghanistan to 83 percent in Nepal. Despite strong economic development, decreased fertility rates, and greater female education, women's involvement in the work market has remained low (Tanaka & Muzones, 2016). This report also stated that 28 percent of working-aged women lived in four Asian countries such as Pakistan, Indonesia, China, and South Korea. In 2016, the female labor force participation rate in Pakistan is very low representing 28 percent, Indonesia represents 51 percent, China represents almost 64 percent, which is fallen from 73 percent in 1990, and South Korea represents 50 percent of women's employment despite their high economic growth. On the other hand, women's employment has a considerably different impact on tourist development in UAE, Egypt, and Oman. The United Arab Emirates scores best among the three Arab countries studied in terms of the influence of women's employment on tourism development, followed by Egypt and Oman (Abou-Shouk et.al, 2021). The findings have significant ramifications for women's employment in Arab and Muslim countries. Taking all of these factors into consideration, this research will look into the contribution of tourism to women's employment in Asia. Table 1 shows the recent studies on tourism and women's employment.

Table 1. Summary of recent studies on Tourism and women's employment

Authors	Context	Sample size and target population	Country or continent	Methodology and data instrument	Factors tasted
Zhang and Zhang (2020)	Gender parity and tourism	36 countries	Asia continent	GMM estimation method	International tourism, number of arrivals, gender, education, expenditure, agriculture-based employment, industry-based employment, services-based employment.
Hutchin et al. (2020)	Partition of women in the tourism sector	363 respondents	21 Asia-Pacific Economic Cooperation (APEC) member countries	The mix of both quantitative and qualitative data. Survey and questionnaire	Cultural barrier theme, common/uncommon tourism jobs for women, Cultural barriers, employee programs, workplace policies, career development strategies for women, government schemes for women tourism employees

Tambunan (2009)	Women entrepreneurship in developing countries	Association of Southeast Asian Nations (ASEAN)	ASEAN	Literature and a descriptive analysis of secondary data,	SME, MIE, ME, LE, SE, education, economy, empowerment.
Mishra et al. (2020)	Gender equity and women empowerment	30 Asian countries	Asia continent	Cross-section and time-series data	Health, education, employment, and democratic representation on the economic growth o
Putra et al. (2021)	Women empowerment	28,934 married women	Indonesia	Cross-sectional study	Viewpoint for a secured sex dialogue, women empowerment factors. socio-demographic characteristics of women's age, husband and households, spousal communication on HIV prevention, and HIV knowledge
Abou-Shouk et al. (2021)	Women's empowerment and tourism growth	784 respondents	Egypt, the United Arab Emirates, and Oman	Survey and interview	Perceptions of women's work in tourism, women's entrepreneurship, and women's empowerment.
Yang et al. (2019)	Unaccompanied travel for Asian women	35 Asian solo female travelers	10 Asian countries (China, Hong Kong, Taiwan, Indonesia, Japan, South Korea, Malaysia, Singapore, Thailand, and Vietnam)	In-depth interviews	Self-discovery, social expectations, Western-centrism in independent travel, in search of identity.
Alarcón, and Cole (2019)	Gender equality for sustainable tourism	World perspective	World perspective	Experiences of participatory, first-hand practical, and theoretical research	SDG, tourism

Methodology

Theoretical framework

The tourism industry is widely regarded as one of the most important economic sectors worldwide. In recent years, women have become increasingly important contributors to the world of business, particularly in the travel and hospitality industry. Their contributions to the economy will increase in proportion to the number of women who enter the labor force. There are a variety of ways in which women's participation is influenced by social and economic variables. According to a number of theoretical and experimental studies that were discussed in the Introduction and Literature Review sections of this article, women's employment is influenced by factors such as tourism, remittances, export, GDP per capita, female child mortality, and government expenditure. The study, however, focuses on the empirical evidence against the influencing variables of women's empowerment in Asia. Overall, the selection of factors is more intensive in comparison to other research that has been previously published on the theme, which is distinctive and

prominent in this study, and we believe that this study would catch a wider research audience to disclose the other elements that hold promise within the same field of inquiry. Figure 1 presents the relationship between female employment and other attributes.

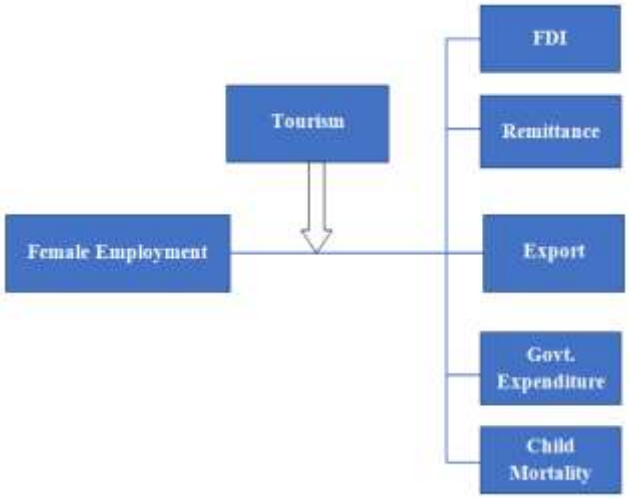

Figure 1. Relationship between female employment and other attributes

Data and descriptive evidence

All of this is based on two sources of information: one is the World Development Indicator (WDI) and the other is data from each country's Government Bureau of Statistics. The United Nations International Children's Emergency Fund (UNICEF) education database was used to acquire information on school enrollment. Table 2 contains the definitions of the variables, as well as information on their data sources. For the sake of our empirical research, the data have been changed to a logarithmic format since the log conversion ensures that the data are compatible with normality.

Table 2. Variable details

Variables	Indicator Name	Sources
FL	Labor force participation rate, female	WDI
Ag	Employment in agriculture, female	
Indus	Employment in industry, female	
Ser	Employment in services, female	
TR	International tourism, receipts (current US$)	
Ex	Exports of goods and services (current US$)	
FDI	Foreign direct investment, net outflows (BoP, current US$)	
Rem	Personal remittances received (current US$)	
GE	General government final consumption expenditure (current US$)	
MR	Mortality rate, infant, female (per 1,000 live births)	

Empirical framework

With the help of alternative data structures, we look at the reduced-form link between travel and female labor market participation. The initial phase was to gather data from all Asian countries in order to create a panel of national data, which included estimations of baseline specifications as follows:

$$FL_{i,t}= \alpha + \beta TR_{i,t}+ \gamma X_{i,t}+\mu_i+\delta_t+\varepsilon_{i,t} \quad (1)$$

FL_{it} is the women participation rate in different countries (i) in a given year (t). The measure of tourism is $Tourism_{c,t}$. β is the parameter estimate of interest is shown below. Other factors that can influence women labor force participation are $X_{i,t}$. We will estimate several different versions of the equation to account for uncertainty in the treatment of the non-tradable sector and to test the robustness of our findings of equation (1). To be here, tourism measures here how many tourists arrive every year. The trade openness measure is total export and import as a proportion of GDP. β is the major estimation parameter. Whatever, the econometric specification of the model is:

$$L(FL)_{it}= \beta 0+ \beta_1 L(TR)_{it} + \beta_2 L(FDI)_{it} + \beta_3 L(Rem)_{it} + \beta_4 L(Ex)_{it} +\beta_5 L(GE)_{it} +\beta_6 L(MR) +\varepsilon_{c,t} \quad (2)$$

Quantile regression (QR regression)

We explore the link between TR and other independent variables at various quantiles, such as 25%, 50%, and 75%, to estimate the women's participation rate (FL). Using these quantiles, we can obtain a reasonable estimate of TR. The quantile factor model is given by:

$$QR_{i,t}= \alpha_i^q + \beta_{i,L(TR)}^q QR_{L(TR)it} + \beta_{i,L(FDI)}^q QR_{L(FDI)it} + \beta_{i,L(Rem)}^q QR_{L(Rem)it} + \beta_{i,L(Ex)}^q QR_{L(Ex)it} + \beta_{i,L(GE)}^q QR_{L(GE)it} + \beta_{i,L(MR)}^q QR_{L(MR)it} \quad (3)$$

Generalized Method of Moments (GMM)

When examining the relationship between tourism and female employment, we primarily rely on the two-step GMM estimator as our primary econometric instrument. A two-step method GMM is necessitated by the following considerations: (1) in this case, the total number of IDs or

countries is greater than the number of years, t; (2) the correlation between dependent variables and lag is greater than 0.8; (3) the mean regression estimator suffers from simultaneity issues; and (4) the two-step system GMM is used to resolve biases that develop while differentiating variables, which are inherent in the mean regression estimator. The following system GMM model was utilized in this paper:

$$L(FL)_{i,t} = \alpha_0 + \alpha_1 L(FL)_{i,t-\tau} + \alpha_2 L(TR)_{i,t} + \sum_{k=1}^{4} \Phi_3 LX_{k,i,t-\tau} + \varepsilon_{i,t} \quad (4)$$

With FL representing the female labor force in a given country at a given year t, TR representing tourism receipts in a given year, X representing the vector of control variables, and τ symbolizing the parameter of autoregression and representing the disturbance term with a given year. Many researchers have employed the GMM estimator to examine the effects of information and communications technology (ICT) (Asongu & Odhiambo, 2020), financial development (Batuo et al., 2018), environmental sustainability (Voumik et al., 2022), and tourism (Nyasha et al., 2021) on economic development.

Female labor force participation in three sectors

In Equation 5, we included three sectors, female labor force participation in agriculture, industry, and service sectors. We want to see how much tourism affects women's engagement in agriculture, industry, and service sectors. Here, "j" is working in three separate sectors.

$$FL_{j,i,t} = \alpha + \beta TR_{j,i,t} + \gamma X_{j,i,t} + \mu_i + \pi_j + \delta_t + \varepsilon_{i,t} \quad (5)$$

Results and Discussion

Table 3 offers descriptive data for each variable, as well as a detailed description. Every single one of these metrics is displayed in this table: average, number of observations, standard deviation, and the lowest and greatest values. The mean value of L(TA) is higher than the mean value of the other variables.

It can be concluded that the sample population in question does not exhibit cross-sectional dependence because the p-value is large for most of the tests performed by Pesaran cross-sectional dependence (CD), Breusch–Pagan's lagrange multiplier (LM), and Pesaran CD. However, the Friedman test assumption is violated as it is the only statistically significant one in Table 4. As these three tests failed to reach statistical significance, it seems that there is no correlation between the error terms reported by different countries. Therefore, methods like first-generation panel unit root tests are implemented. In Table 5 of the paper, all three popular unit root tests are summarized.

At a 5% level of significance, the results show that the null hypothesis is rejected for the first differences. In the case of the first differenced data, all variables are assumed to be stationary because p-values are predicted to be below 5%. All of our variables are stationary at the first difference in the aforementioned unit root test. Also, data is free from CD problems. So, the paper does not need second generation unit root and cointegration tests. Thus, system GMM and quantile regression can be used to solve the problem.

Table 3. Summary statistics

Variables	Number of observations	Mean	Standard deviation	Minimum	Maximum
L(FL)	589	3.398	0.441	2.456	4.025
L(TR)	526	21.51	1.807	15.89	24.90
L(FDI)	492	20.95	2.857	6.908	26.28
L(Rem)	540	20.85	2.354	14.42	25.15
L(Ex)	575	24.60	1.931	18.65	28.63
L(GE)	573	23.64	1.996	18.45	28.53
L(MR)	589	2.604	0.934	0.531	4.412
L(Ag)	589	1.942	2.493	-4.605	4.432
L(Indus)	589	2.485	0.653	0.0296	3.628
L(Ser)	589	3.917	0.640	2.251	4.592

Table 4. Results of CD test

Ho: There exists a cross-sectional dependence		
Test	Statistics	P-value
Pesaran CD Statistics	1.608	0.260
Pesaran LM Statistics	3.538	0.110
Friedman Statistics	102.288***	0.000
Breusch–Pagan's LM Statistics	6.451	0.174

Key: *** shows 1% significant

Table 5. Unit Root Test Result

	At Level			At 1st Difference		
Variables	Harris-Tzavalis	Im-Pesaran-Shin	Levin, Lin & Chut	Harris-Tzavalis	Im-Pesaran-Shin	Levin, Lin & Chut
LFL	0.845	0.874	-0.471	-22.35***	-8.765***	-5.613***
LTR	-1.265	2.746	3.70	-21.44***	10.13***	-6.304***
LFDI	1.247	1.246	1.024	-19.10***	9.956***	-6.152***
LRem	0.856	0.684	0.478	8.956***	8.956***	8.956***
LEx	1.246	-0.784	-0.073	-27.19***	-10.33***	-7.88***
LGE	-1.685	-2.846	-0.559	-21.93***	-10.177***	-7.82***
LMR	-1.975	1.848	0.875	-31.52***	-9.769***	-7.72***

Note: 1%, 5%, 10% significance level denoted by ***, ** and * respectively. Presume as trend and intercept

We continue to estimate numerous sets of models because the unit root findings imply that all variables are stationary at first differenced and N>T. According to Tables 6 to 13, the models contain static and dynamic panel data models that provide generalized least squares (GLS), QR, and two-step system GMM estimators, respectively. Table 6 indicates the log-log model of GLS and Quantile regression analysis. Column 1 shows the GLS regression of female employment, tourism, FDI, and other attributes. Columns 2, 3, and 4 show the different quantiles of regression, the three-phase like Q25, Q50, and Q75. In the QR models for Q25, Q50, and Q75, the coefficients of L(TR) to explain L(FL) are 0.236, 0.0874, and 0.0165, respectively, and these estimations are positive and significant. The variable L(FDI) also has a positive coefficient of 0.135, 0.137, and 0.0831, indicating that a one percent increase in FDI creates a way to woman employment of 0.135%, 0.137%, and 0.0831%, respectively. Women's employment is unaffected by the variables L(TR), L(Rem), and L(Ex) in the Generalized least Square Model (Model 1). L(GE) has a negative and significant impact on L(TR) in both the Q25, Q50, and Q75 models, with coefficient weights of -0.134, -0.155, and -0.162 respectively. Simultaneously, L(MR) coefficients show that if the child mortality rate decreases the women's employment rate, as evidenced by empirical estimates of Q25, Q50, and Q75, and all coefficients are significant.

Table 7 shows the log-log model including dynamic panel data estimation. The coefficient of columns 1, 2, and 3 show different models of two-step System-GMM. As a precaution, we removed the five nations with the highest and lowest adjusted tourism receipts (from columns 2 and 3 respectively) from consideration. Five of Asia's most popular tourist nations were deleted from Model 2 as a result. We omitted five of Asia's least-visited nations from Model 3. There is a statistically significant and beneficial impact on both regressions of tourism from the original data. The statistical credibility of our identification technique is supported by the fact that the Hansen test p-value for all models is above the threshold level of 0.05 (Hansen, 1982). It appears that tourism has a positive and causal effect on the employment of women, as shown in Table 7. In other words, the coefficient here is the percentage change in women's participation rates for a percentage difference in tourism. Columns 1,2, and 3 show that, the dynamic panel regression of our data. The coefficients of L(TR) are 0.720, 0.589, and 0.781 in the two-step System GMM model respectively to explain L(FL) and this estimation is positive and significant.

Table 6. GLS and QR model (Log of female labor force participation rate)

Variables	GLS	Q25	Q50	Q75
LTR	0.117***	0.236***	0.0874**	0.0165**
	(0.0224)	(0.0366)	(0.0351)	(0.0240)
LFDI	0.104***	0.135***	0.137***	0.0831***
	(0.0116)	(0.0190)	(0.0182)	(0.0124)
LRem	-0.0910***	-0.153***	-0.0974***	-0.0344***
	(0.0121)	(0.0197)	(0.0189)	(0.0129)
LEx	0.145***	0.0903	0.000889	0.0704
	(0.0459)	(0.0750)	(0.0719)	(0.0492)
LGE	-0.207***	-0.134**	-0.155***	-0.162***
	(0.0362)	(0.0591)	(0.0567)	(0.0388)
LMR	-0.183***	-0.281***	-0.195***	-0.0615*
	(0.0298)	(0.0487)	(0.0467)	(0.0320)
Constant	3.668***	3.973***	4.602***	4.615***
	(0.424)	(0.694)	(0.665)	(0.455)
Observations	381	381	381	381
Number of id	24			

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 7. System GMM (female employment)

Variables	Model 1	Model 2	Model 3
L.LFL	0.910***	0.721***	0.966***
	(0.0547)	(0.0306)	(0.0306)
LTR	0.720***	0.579***	0.781***
	(0.00778)	(0.00917)	(0.00917)
LFDI	0.00457**	0.00502*	0.00492*
	(0.00199)	(0.00263)	(0.00263)
LRem	-0.00311	-0.00258	-0.00268
	(0.00301)	(0.00866)	(0.00866)
LEx	0.0164	0.0155	0.0165
	(0.0102)	(0.0125)	(0.0134)
LGE	-0.0148	-0.00732	-0.00742
	(0.0121)	(0.00852)	(0.00952)
LMR	-0.0290*	-0.0298*	-0.0248*
	(0.0215)	(0.0224)	(0.0227)
Constant	1.579***	0.784**	0.798**
	(0.411)	(0.350)	(0.358)
Excluded	None	Top-5	Bottom-5
AR(1)	0.00	0.00	0.00
AR(2)	0.08	0.12	0.18
Hansen p-value	0.59	0.51	0.68
Sargan p-value	0.248	0.35	0.249
Observations	435	367	367
Number of id	27	22	22

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

The variable L(MR) shows a negative coefficient like as -0.0290, -0.298, and -0.0248, which means one percent of the decrease in female child mortality rate, increase an approach to woman employment which are 0.0290%, 0.0298%, and 0.0248% respectively for all dynamic models. The variables L(FDI), L(Ex), and L(GE) have a positive impact on female employment. In the dynamic panel estimation, the dynamic GMM model estimates the desired output where log tourism has a remarkable contribution to raising woman empowerment in a particular panel study area.

In considered reliable, the difference and system GMM estimations must be based on the assumption that the error term does not exhibit serial correlation. The p-values in AR(2) are greater than 5%, and all models are insignificant. Because AR(2) rejects the null hypothesis,

it may be concluded that the first-differenced error has no serial correlation at order 2 in either difference or system GMM models. The Hansen and Sargan test for the joint validity of instruments in GMM models is crucial because of the assumption that instruments are exogenous. According to the null hypothesis, the instruments are exogenous; if the null hypothesis is rejected, the instrumental variables are linked to some residuals, and thus they are invalid. Due to the Hansen and Sargen p-values being greater than 5%, the null hypothesis of joint validity is not rejected in both the difference and system GMM estimations. A difference and system GMM approach can be used to estimate the percentage of women in the labor force utilizing the instrument variables as a whole.

Table 8 indicates the log-log model of GLS and quantile regression analysis. Column 1 shows the GLS regression of female employment in the agricultural sector, tourism, FDI, remittance, export, and other attributes. Women's employment is positively affected by the variables L(Rem), L(Ex), and L(MR) in the Generalized least square model (Model 1). Although L(TR), L(FDI), and L(GE), have a negative impact on women's employment in the GLS model. Columns 2, 3, and 4 show the different quantiles of regression, the three-phase like Q25, Q50, and Q75. In the QR models for Q25, Q50, and Q75, the coefficients of L(TR) to explain L(FL) are -0.166, -0.0398, and 0.0546 respectively, and these estimations are negative and significant. If tourist arrival increases by 1% in Asian countries, female employment in the agricultural sector will also decrease by 0.166% and 0.0398%. Similarly, L(FDI) and L(GE) have a negative impact on women's employment in the GLS model with coefficient weights -0.0208, -0.0781, -0.0716, and -0.387, -0.501, and -0.323 respectively. The variable L(Rem) has a positive coefficient for all quantiles of 0.633, 0.334, and 0.146, indicating that a one percent increase in government expenditure creates a way to women's employment of 0.633%, 0.334%, and 0.146%, respectively. Similarly, L(Ex), and L(MR) have positive coefficients in all quartiles.

Table 9 shows the log-log model including dynamic panel data estimation. The coefficient of columns 1, 2, and 3 show different models of two-step System-GMM. As a precaution, we removed the three Asian nations with the highest and lowest adjusted tourist arrivals (from columns 2 and 3 respectively) from consideration. This study removed the five Asian nations with the highest and lowest adjusted tourism receipts (from columns 2 and 3 respectively) from consideration. Five of Asia's most popular tourist nations were deleted from Model 2 as a result. We omitted five of Asia's least-visited nations from Model 3. There is a statistically significant and beneficial impact on both regressions of tourism from the original data. The statistical credibility of our identification technique is supported by the fact that the Hansen test p-value for all models is above the threshold level of 0.05. In other words, the coefficient here is the percentage change in women's participation rates in agriculture for a percentage difference in tourism. The coefficients of L(TR) are -0.0500, -0.0500, and -0.0469 in the two-step System GMM model respectively to explain L(FL) and this estimation is negative which means one percent of the increase in tourism, decrease an approach to woman employment which are 0.0500%, 0.0500%, and 0.0469% respectively for all dynamic models. The other variables of the model have a positive impact on female employment, despite the small magnitudes.

Table 8. GLS and Quantile Regression (female employment in agriculture)

Variables	GLS	Q25	Q50	Q75
LTR	-0.337***	-0.166**	-0.0398***	0.0546***
	(0.0890)	(0.226)	(0.0757)	(0.0475)
LFDI	-0.0379	-0.0208	-0.0781**	-0.0716***
	(0.0461)	(0.117)	(0.0392)	(0.0246)
LRem	0.590***	0.633***	0.334***	0.146***
	(0.0480)	(0.122)	(0.0408)	(0.0256)
Lex	0.596***	0.321	0.495***	0.272***
	(0.182)	(0.464)	(0.155)	(0.0974)
LGE	-0.474***	-0.387	-0.501***	-0.323***
	(0.144)	(0.366)	(0.122)	(0.0768)
LMR	0.753***	0.767**	0.740***	0.650***
	(0.119)	(0.302)	(0.101)	(0.0633)
Constant	-7.522***	-8.424*	-4.194***	-0.343
	(1.688)	(4.293)	(1.435)	(0.901)
Observations	381	381	381	381
Number of id	24			

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 9. Dynamic GMM (female employment in agriculture)

Variables	Model 1	Model 2	Model 3
LLAg	0.434**	0.681***	0.622***
	(0.175)	(0.150)	(0.175)
LTR	-0.0500	-0.0500	-0.0469
	(0.0753)	(0.0756)	(0.0819)
LFDI	0.0194	0.0235	0.0206
	(0.0187)	(0.0202)	(0.0219)
LRem	-0.0198	0.0282	0.0380
	(0.0267)	(0.0397)	(0.0366)
LEx	0.0220	-0.0957	-0.0686
	(0.109)	(0.0839)	(0.0978)
LGE	-0.0846	0.143**	0.126*
	(0.0848)	(0.0723)	(0.0710)
LMR	0.0238	0.178**	0.165
	(0.206)	(0.0902)	(0.126)
Constant	3.722	-1.285	-1.766
	(3.087)	(1.657)	(2.137)
Excluded	None	Top-5	Bottom-5
AR(1)	0.00	0.00	0.00
AR(2)	0.08	0.12	0.18
Hansen p-value	0.32	0.25	0.168
Sargan p-value	0.24	0.35	0.249
Observations	335	350	334
Number of id	24	24	24

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 10 indicates the log-log model of GLS and quantile regression analysis. Column 1 shows the GLS regression of women's employment in the industrial sector, tourism, FDI, remittance, export and government expenditure, and mortality rate. Women's employment in Asia is positively affected by variables like L(TR), L(Rem), and L(Ex) in the Generalized least square model (Model 1). Besides that, L(FDI), L(GE), and L(MR) have a negative impact on women's employment in the GLS model. Columns 2, 3, and 4 show the different quantiles of regression, the three-phase like Q25, Q50, and Q75. In the QR models for Q25, Q50, and Q75, the coefficients of L(TR) to explain L(FL) are 0.0186, 0.0763, and 0.0408 respectively, and these estimations are positive. If tourism increases by 1% in Asian countries, female employment in the industrial sector will also increase by 0.0186%, 0.0763%, and 0.0408%. The variable L(Rem) also has a positive and significant coefficient for all quantiles of 0.172, 0.0587, and 0.0540, indicating that a one percent increase in foreign direct investment creates a way to women's employment of 0.172%, 0.0587%, and 0.0540%, respectively. The variable L(Ex) also has a coefficient for all quantiles of 0.0902, 0.205, and 0.236, indicating that a one percent increase in export creates a way to women's employment of 0.0902%,0.205%, and 0.236% respectively. However, L(FDI) has a negative and significant impact on L(FL) in all the Q25, Q50, and Q75 models, with coefficient weights of -0.0991, -0.0948, and -0.133, respectively. Therefore, the L(FDI) coefficients reveal a considerable decrease in women's employment in the industrial sector when foreign direct investment increases. L(GE) shows positive relation in the Q25 model with coefficient weights 0.0254 and shows the negative quantile for Q50 and Q75 models. L(MR) has a negative and significant impact on L(FL) in all the Q25, Q50, and Q75 models, with coefficient weights -0.135, -0.0638, and -0.143, respectively. Therefore, the L(MR) coefficients reveal a considerable decrease in women's employment in the industrial sector when the infant mortality rate increases.

Table 11 shows the log-log model including dynamic panel data estimation. The coefficient of columns 1, 2, and 3 show different models of two-step System-GMM. As a precaution, we removed the five Asian nations with the highest and lowest adjusted tourist arrivals (from columns 2 and 3 respectively) from consideration. As a result, three of Asia's most popular tourist nations were removed from Model 2, and three of Asia's least-visited states were eliminated from Model 3. The coefficients of L(TR) are -0.0310, -0.0331, and -0.0293 in the two-step System GMM model respectively to explain L(FL) in the industry sector and this estimation is negative. The variables L(FDI), L(Ex), and L(MR) also show negative coefficients. The variables L(Rem) and L(GE) show a positive impact on female employment which shows in all the coefficients.

Table 10. Quantile regression (female employment in the industrial sector)

Variables	GLS	Q25	Q50	Q75
LTR	0.0132	0.0186	0.0763**	0.0408
	(0.0307)	(0.0476)	(0.0353)	(0.0261)
LFDI	-0.119***	-0.0991***	-0.0948***	-0.133***
	(0.0159)	(0.0247)	(0.0183)	(0.0135)
LRem	0.158***	0.172***	0.0587***	0.0540***
	(0.0165)	(0.0257)	(0.0190)	(0.0140)
LEx	0.203***	0.0902	0.205***	0.236***
	(0.0628)	(0.0975)	(0.0723)	(0.0534)
LGE	-0.108**	0.0254	-0.115**	-0.0946**
	(0.0496)	(0.0769)	(0.0570)	(0.0421)
LMR	-0.141***	-0.135**	-0.0638	-0.143***
	(0.0408)	(0.0634)	(0.0470)	(0.0347)
Constant	-0.744	-2.282**	-0.496	0.325
	(0.581)	(0.902)	(0.669)	(0.494)
Observations	481	481	481	481
Number of id	28			

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 11. Static and Dynamic GMM (female employment in the industry)

Variables	Model 1	Model 2	Model 3
L.LIndus	0.929***	0.955***	0.938***
	(0.0265)	(0.0594)	(0.0574)
LTR	-0.0310	-0.0331	-0.0293
	(0.0318)	(0.0312)	(0.0243)
LFDI	-0.0126	-0.0123	-0.0112
	(0.00785)	(0.00836)	(0.00722)
LRem	0.0267***	0.0256**	0.0236**
	(0.0103)	(0.0104)	(0.00992)
LEx	-0.0446**	-0.0477**	-0.0660**
	(0.0211)	(0.0208)	(0.0276)
LGE	0.0570	0.0599	0.0822*
	(0.0392)	(0.0393)	(0.0442)
LMR	-0.0123	-0.0144	0.0132
	(0.0415)	(0.0361)	(0.0333)
Constant	0.325	0.400	0.161
	(0.463)	(0.405)	(0.386)
Excluded	None	Top-5	Bottom-5
AR(1)	0.00	0.00	0.00
AR(2)	0.08	0.12	0.18
Hansen p-value	0.59	0.51	0.68
Sargan p-value	0.18	0.35	0.42
Observations	367	350	334
Number of id	24	24	24

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 12 indicates the log-log model of GLS and quantile regression analysis. Column 1 shows the GLS regression of female employment in the service sector, tourism, FDI, remittance, export and government expenditure, and mortality rate. Women's employment is positively affected by the variables L(TR), and L(FDI) in the Generalized least square model (Model 1). L(Rem), L(Ex), L(GE), and L(MR) have a negative impact on women's employment in the GLS model. Columns 2, 3, and 4 show the different quantiles of regression, the three-phase like Q25, Q50, and Q75. In the QR models for Q25, Q50, and Q75, the coefficients of L(TR) to explain L(FL) are 0.0446, 0.128, and 0.118, respectively, and these estimations are positive and significant. If tourism increases by 1% in Asian countries, female employment in the service sector will also increase by 0.0446%,

0.128%, and 0.118%. The coefficients of L(FDI) to explain L(FL) are 0.0775, 0.0461, and 0.00984 respectively, and these estimations are positive and significant indicating that a one percent increase in foreign direct investment creates a way to women's employment of 0.0775%, 0.0461%, and 0.00984%. L(Rem) has a negative and significant impact on L(FL) in all the Q25, Q50, and Q75 models, with coefficient weights -0.134, -0.120, and -0.0872, respectively. Simultaneously, L(Ex), L(GE), and L(MR) have also shown a negative impact in all the Q25, Q50, and Q75 models. Therefore, the L(GE) coefficients reveal a considerable decrease in women's employment in the service sector when remittance, export, government expenditure, and mortality rate increase.

Table 12. Quantile Regression (female employment in the service sector)

Variables	GLS	Q25	Q50	Q75
LTR	0.115***	0.0446**	0.128***	0.118***
	(0.0176)	(0.0217)	(0.0226)	(0.0340)
LFDI	0.0445***	0.0775***	0.0461***	0.00984
	(0.00915)	(0.0112)	(0.0117)	(0.0176)
LRem	-0.109***	-0.134***	-0.120***	-0.0872***
	(0.00951)	(0.0117)	(0.0122)	(0.0183)
LEx	-0.0438	-0.0359	-0.0477	-0.0176
	(0.0362)	(0.0445)	(0.0464)	(0.0696)
LGE	-0.0886***	-0.0971***	-0.0938**	-0.0256
	(0.0285)	(0.0351)	(0.0366)	(0.0549)
LMR	-0.312***	-0.370***	-0.306***	-0.108**
	(0.0235)	(0.0289)	(0.0302)	(0.0452)
Constant	6.879***	8.199***	6.993***	4.629***
	(0.335)	(0.411)	(0.429)	(0.644)
Observations	481	481	481	481
Number of id	24			

Standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

Table 13 shows the log-log model including dynamic panel data estimation. The coefficient of columns 1, 2, and 3 show different models of two-step System-GMM. As a precaution, we removed the five Asian nations with the highest and lowest adjusted tourist arrivals (from columns 2 and 3 respectively) from consideration. As a result, three of Asia's most popular tourist nations were removed from model 2, and three of Asia's least-visited states were eliminated from Model 3. The coefficients of L(TR) are 0.0747, 0.658, and 0.0842 in the two-step System GMM model respectively to explain L(FL) and this estimation is positive. The coefficients of L(FDI), and L(Ex) also show a positive impact on female employment. In the two-step System GMM model, the coefficient of L(FDI) are 0.00358, 0.00318, and 0.00341; L(Ex) are 0.0193, 0.0173, and 0.0183. However, even though the magnitudes are quite small, the coefficients are all positive. The variables L(Rem), L(GE), and L(LMR) have negative coefficients for all statics and dynamic GMM. According to our findings, an increase in female involvement in the industry and service sectors was caused by an increase in tourism which is shown in Figure 2.

The results of the current study are consistent with those found in previous research carried out by Nassani et al. (2019), Hutchings et al. (2020), Zhang and Zhang (2020), and Abou-Shouk et al (2021). Women find it much simpler to enter the tourism industry as a result of the increased education and training opportunities provided by the tourism industry during the employment process. This also stimulates women's entrepreneurial endeavors and employment opportunities within the tourism industry. The growth of tourism in Asian nations also results in more educational opportunities and professional training for women. For instance, in Muslim nations in west Asia, cultural traditions limit women's educational options to conventional "female" fields of study, and their choice to pursue education in traditionally "masculine" subjects is frequently looked down upon by society. In this regard, tourism, which is considered to be a more "feminine" subject, means greater educational options for women, which in turn assures that more women can be engaged in the tourism industries in these more traditional nations (Zhang and Zhang, 2020).

Table 13. Static and Dynamic GMM (female employment in the service sector)

Variables	Model 1	Model 2	Model 3
L.LSer	0.896***	0.874***	0.899***
	(0.0474)	(0.0484)	(0.0458)
LTR	0.0747***	0.658***	0.0842***
	(0.00576)	(0.00576)	(0.00576)
LFDI	0.00358	0.00318	0.00341
	(0.00259)	(0.00259)	(0.00259)
LRem	-0.0189	-0.0162	-0.0159
	(0.00506)	(0.00506)	(0.00506)
LEx	0.0193	0.0173	0.0183
	(0.0196)	(0.0196)	(0.0196)
LGE	-0.0145	-0.0165	-0.0158
	(0.0278)	(0.0278)	(0.0278)
LMR	-0.0425	-0.0399	-0.0438
	(0.0485)	(0.0485)	(0.0485)
Constant	0.459	0.459	0.459
	(0.457)	(0.457)	(0.457)
Excluded	None	Top-5	Bottom-5
AR(1)	0.00	0.00	0.00
AR(2)	0.08	0.12	0.18
Hansen p-value	0.59	0.51	0.68
Sargan p-value	0.24	0.52	0.38
Observations	467	367	367
Number of id	29	24	24

Robust standard errors in parentheses, *** p<0.01, ** p<0.05, * p<0.1

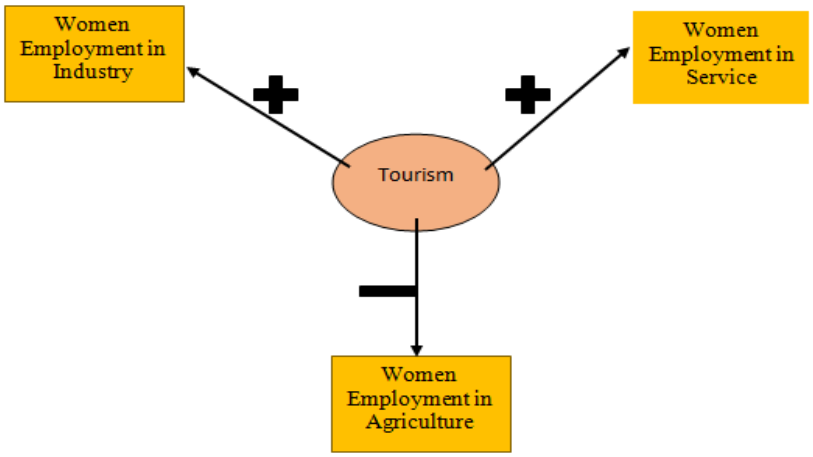

Figure 2. Women's labor force participation in three sectors

The growth of the tourism industry provides women with increased political rights in addition to improved economic, employment, and educational opportunities. Additionally, women have increased opportunities to enter positions of authority because of the tourism industry. Countries such as the Philippines, Cambodia, and Georgia all have females serving in the position of tourism minister. This effectively closes the gender gap that exists between men and women in the decision-making process of high-level political positions. It's interesting to note that all three nations also fare well on the index measuring gender equality in Asia. The Philippines, in particular, has consistently ranked among the top ten countries in the world in this category. This

lends credence to the idea that tourism's stellar performance in terms of supporting political empowerment is a factor in the achievement of gender equality in Asia. When taken as a whole, the economic, employment, educational, and political empowerment that have resulted from tourism in Asia have made a substantial contribution to gender equality (Zhang and Zhang, 2020).

The findings of this study revealed that financial intermediaries have a catalytic role in the process of empowering women through foreign travel and tourism. Tourism has the potential to economically empower women by providing them with opportunities for business, realizing the concept of women's independence, and highlighting their role in supporting the livelihoods of their families (Abou-Shouk et al., 2021). This would not only fulfill the fifth Sustainable Development Goal (gender equality and women's empowerment), but it would also fulfill the first and eighth goals (no poverty and decent and economic growth respectively). In addition to economic empowerment, community members' pride in traditions and local culture leads to residents having a sense of self-esteem and uniqueness and positively influences their attitudes toward the positive impacts of sustainable tourism development (Abou-Shouk et al., 2021). The residents' sentiments of pride in their nation's heritage and local culture are the most essential component of women's psychological empowerment, which stimulates their support for the growth of tourism. This is because these residents feel pride in their own country. In addition, the participation of women in activities related to tourism is essential to developing a feeling of community cohesion in the local community. It is possible to deepen women's ties to their communities by ensuring their full and active involvement in those communities. As a result of this, we have arrived at the conclusion that social empowerment is a crucial stimulant that contributes to good sentiments held by locals regarding the development of sustainable tourism. In addition, encouraging the self-determination of women in any community necessitates a focus on politics, which in turn necessitates the inclusion of women in the process of decision-making. However, Ferguson (2011) argued that even though the growth of tourism could, in theory, contribute to gender equality and women's empowerment, a substantial re-framing of policies is required in order to be able to maximize the potential of tourism development.

Conclusion and Policy Recommendations

This research uses a system of GMM, GLS, and quantile regression methods. This study takes into account GDP, trade, female child mortality, and urban population. We looked into the influence of tourism on women's labor market employment and discovered that it had a considerable impact. According to our findings, an increase in female involvement in the industry and service sectors was caused by an increase in tourism. The research also considers the efficacy of alternative approaches to dealing with different models of female workforce engagement in various industries. Tourism increases women's work chances in the industry and service sectors, while it decreases employment opportunities in the agricultural sector. Future research and policy discussions on the impact of tourism sectors on women's employment will benefit from the findings of this study. These studies can aid in the formulation of employment-related policy initiatives. This research was based on the idea that policymaking is a social process that involves contact, negotiation, and collaboration among women and other tourist stakeholders. It emphasizes the importance of women's engagement in tourism in boosting the country's GDP and the hospitality industry's overall long-term growth. It is concerned with documenting and assessing the realities of policymaking from the policymaker's social and economic viewpoints and building understanding from the bottom up through empowering and engaging women in the tourist sector. This study can help countries' national tourism organizations figure out how to get the optimum output from tourism by integrating women into the industry. As this research is conducted in Asia, the tourism planner of these regions will get an overall view of women's participation and their contribution to the tourism industry. This research will help them to renovate the tourism industry in their future master plan through the incorporation of women in the tourism industry.

This research paper provides some implications to incorporate some issues in the tourism strategic plan. Firstly, tourism in gender-sensitive legislation and macroeconomic policy be implemented to promote women's engagement and gender parity. Secondly, skill development, leadership and gender equality training for women can play a substantive role in the tourism sector. Thirdly, national tourism policies must encompass gender equality, women's participation in the workforce, training, financial incentives, and promotion. Fourthly, to support grassroots women's organizations in tourism towns and make it as easy as possible for women to join and lead the workforce across the tourism industry. Fifthly, to develop and implement methods that encourage equal pay for women in all facets of the tourism industry. Sixthly, targeted interventions by the public, private, and civil society actors, such as advocating equal pay, addressing sexual harassment, and hiring women into high-level roles, can help to promote good employment for women in tourism. Lastly, gender equality outcomes are enhanced by investing in women's training, particularly soft skills training, and raising awareness of various training alternatives, as well as gender equality mentoring across the industry. When ties are created with all stakeholders

from the root level to the top-level organization, tourism can empower women politically and socially.

Even though the current study has produced significant empirical findings on how tourism affects women's employment in Asian countries, our methodology has several flaws which need to be addressed in future research. Because it was impossible to obtain data from either before or after the period possible to obtain data from either before or after the period that was being researched, the prediction potential of the econometric methodologies was significantly reduced as a result. This was one of the major limitations that our study had to contend with. In future work, the relationship between the factors that were examined may be investigated utilizing data from national time series. In addition, cultural variables may play an essential influence on gender equality which was not investigated in the current study due to constraints in the availability of data. Therefore, determining the extent to which culture has an impact on the connection between tourism, women's employment, and gender equality appears to be something that will be both intriguing and significant in the years to come. Therefore, further research may be carried out by broadening the proxies for women's employment and gender equality through the incorporation of a greater number of segmented variables. This would result in a deeper comprehension of the effect that tourism has on women's employment.

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