REFLECTIONS OF SKILLED AND UNSKILLED LABOR ON THE TOURISM SECTOR: PANEL DATA ANALYSIS IN DEVELOPING AND MIDDLE-INCOME COUNTRIES

Reflexos do trabalho qualificado e não qualificado no setor de turismo: uma análise de dados em painel em países em desenvolvimento e de renda média

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ABSTRACT

This research investigates the nuanced impact of skilled and unskilled labor on the tourism sector in developing and middle-income countries through a comprehensive panel data analysis. Recognizing the significance of the tourism industry as a driver of economic growth, the study aims to discern how the composition of labor, particularly skilled and unskilled, contributes to the sector's dynamics. The research methodology is based on panel data analysis. This involves collecting and analyzing data from a number of countries over a period of time. This approach provides a powerful tool for comparing and analyzing different aspects of the tourism sector in different countries. The analysis highlights key variables such as employment levels, productivity, and economic performance. The analysis focuses on key variables such as employment levels, productivity, and economic performance within the tourism sector. By employing advanced econometric techniques, the study aims to disentangle the distinct contributions of skilled and unskilled labor to the sector's overall success. We anticipate that the findings of this research will provide valuable insights for policymakers, industry stakeholders, and academics. Understanding the differential impacts of skilled and unskilled labor on the tourism sector can inform targeted interventions and strategic initiatives aimed at optimizing workforce composition, enhancing productivity, and fostering sustainable economic development in the selected countries. This information can enable specific countries to develop more effective policies in the tourism industry and create a more solid foundation for the sector.

KEYWORDS

Tourism sector; Productivity; Panel data analysis; Economic growth.

RESUMO

Esta pesquisa investiga o impacto diferenciado do trabalho qualificado e não qualificado sobre o setor de turismo em países em desenvolvimento e de renda média, por meio de uma análise abrangente de dados em painel. Reconhecendo a relevância da indústria do turismo como motor de crescimento econômico, o estudo busca compreender de que forma a composição da força de trabalho, em especial a qualificada e a não qualificada, contribui para a dinâmica do

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setor. A metodologia de pesquisa baseia-se na análise de dados em painel, envolvendo a coleta e a análise de informações de diversos países ao longo de um período de tempo. Tal abordagem constitui um instrumento poderoso para comparar e examinar diferentes aspectos do setor de turismo entre distintas nações. A análise enfatiza variáveis-chave como níveis de emprego, produtividade e desempenho econômico. Por meio da aplicação de técnicas econométricas avançadas, o estudo procura desvendar as contribuições específicas do trabalho qualificado e não qualificado para o êxito global do setor. Espera-se que os resultados da pesquisa ofereçam subsídios valiosos para formuladores de políticas públicas, atores do setor e acadêmicos. A compreensão dos impactos diferenciados do trabalho qualificado e não qualificado no turismo pode orientar intervenções direcionadas e iniciativas estratégicas voltadas à otimização da composição da força de trabalho, ao aumento da produtividade e ao fortalecimento do desenvolvimento econômico sustentável nos países analisados. Essas informações podem permitir que determinadas nações formulem políticas mais eficazes para a indústria do turismo, consolidando uma base mais sólida para o setor.

PALAVRAS-CHAVE

Setor de turismo; Produtividade; Análise de dados em painel; Crescimento econômico.

INTRODUCTION

Tourism is a social and economic phenomenon and a labor-intensive industry, relying on the service nature of tourist products and social and human interactions. Therefore, tourism creates numerous job opportunities both in the travel and tourism sector itself and in other sectors that provide production needs for tourism (Alhussami, 2017). People widely regard tourism as a pivotal catalyst for employment growth and a foundational element of the global economy. Forecasts suggest that the travel and tourism sector will significantly impact the global employment landscape by 2034, accounting for close to 448 million jobs, or approximately 12.2% of the total global employment (WTTC, 2024). In OECD countries, tourism, particularly the accommodation sector, constitutes about 5.5% of total employment. Tourism offers a rich potential for employment growth, serving as a robust source of jobs. This sector provides a wide range of job opportunities for individuals of all ages and skill levels, facilitating entry into the labor market, gaining experience, skill development, and opportunities for higher-quality jobs in the value chain (Stacey, 2015). Accordingly, expanding and improving education has become the most important priority for the tourism sector and thus the most effective approach. There's no doubt that education plays a significant role in economic performance across all sectors of the economy, and tourism is unlikely to be an exception (Hjalager & Andersen, 2001). One of the biggest challenges in the hospitality sector is retaining highly educated workers. Research shows that the turnover rate among highly educated workers is rapidly increasing (Blomme et al., 2010). For instance, studies suggest that perceived over qualification can increase workers'

intentions to leave a job (Wells, 2004), decrease their motivation and satisfaction and reduce their emotional commitment (Lobene & Mead, 2013). However, it is generally observed that workers who can adapt to their job and utilize their high qualifications tend to perform better (Erdogan and Bauer 2009). Studies in developed countries report that highly qualified workers are more productive (Buechel, 2002; Kampelmann & Rycx, 2012). Mahy and others (2015) argue that the productivity of highly skilled workers in high-skilled jobs is on average 30% higher per year (3.3% compared to 2.3%) than their productivity in low-skilled jobs. The same study also contends that low-skilled workers are less productive in both high- and low-skilled jobs. Another notable finding is that highly skilled workers can be more productive in businesses operating in markets with high uncertainty compared to those in markets with low uncertainty. This indicates that businesses can achieve higher sustainability with highly skilled workers in uncertain environments. However, studies showing that productivity decreases when workers' qualifications exceed job requirements (Velden & Verhaest, 2015) also exist. There are also studies where no relationship between low quality and productivity is observed (Judge et al., 2001). In fact, there are a few studies suggesting the opposite, where low-skilled workers can enhance the financial performance of businesses (Jones et al., 2009). While there is a clear relationship between tourism expenditures and job creation, an increase in tourism revenues does not necessarily increase the number of jobs (Burns, 1993). Raising individuals' education levels is seen as an input for increasing economic growth and per capita income (Gordon, 2016). Employers' need for skilled workers can negatively impact productivity, while at the macro level, it can hinder the transition from a factor economy to an innovation economy (Nickell & Nicolitsas, 1999). Simply put, there is little doubt about tourism's ability to create employment opportunities, and this potential is why many governments consider promoting and developing tourism as an economic sector. The highest demand in terms of numbers is for semi-skilled or unskilled jobs. However, the issue of seasonality, in addition to low skill levels, also impacts these jobs (Burns, 1993). While there is a general aim to raise the level of education for economic growth and development, contradictory data regarding the productivity of highly educated and qualified personnel also emerge. Considering that the productivity of qualified labor can increase by up to 0.5% when employed in a suitable job (Holland et al., 2013), as mentioned above, providing individuals with appropriate qualifications forms one dimension of the process; qualified employment forms the other dimension of the high-skilled worker problem.

The most crucial point of the above discussion is that the relationship between highly skilled workers and high productivity is based on findings in developed countries. This situation may undoubtedly result from the jobs in companies that provide employment requiring high qualifications (Wright et al., 2017). That is, the requirements of the job can be compatible with the qualifications of the workers. On the other hand, the fact that highly skilled workers can increase productivity by 3% in some sectors in these countries, also known as innovation-focused economies (Mahy et al., 2015), should not be misleading. However, in developing countries, this issue has inconsistent and controversial results (Velden & Verhaest, 2015). The primary aim of this study is to examine whether a similar situation exists in selected developing countries, analyzing Turkey, Taiwan, Chile, Mexico, Brazil, Russia, Colombia, the Philippines, South Africa, Azerbaijan, Jordan, Uruguay, Costa Rica, and Ukraine for the period 2004-2022 using panel cointegration methodology, as classified by the IMF and OECD as developing and middle-income countries. Prior research has emphasized the importance of labor in the tourism sector, but there exists a paucity of studies systematically analyzing the interplay between skilled and unskilled labor. The existing literature often overlooks the distinct contributions each type of labor makes to the industry's success. This study bridges this gap by adopting a nuanced approach, acknowledging the unique skills and roles associated with both skilled and unskilled labor in the tourism context. The global tourism sector serves as a significant economic driver for many developing and middle-income countries, contributing to employment generation and economic growth. This study delves into the intricate relationship between skilled and unskilled labor within the tourism industry, employing a comprehensive panel data analysis approach. By examining this dynamic, we aim to provide valuable insights into the nuanced impact of labor composition on the tourism sector's overall performance.

EMPLOYMENT IN TOURISM SECTOR

Tourism is a sector that encompasses many skilled professions, yet many of these, even those requiring skills, are often based on knowledge and abilities that can be easily acquired through short-term training or experience (Riley, 2004, p. 137). The tourism industry is lauded for its significant contributions to increasing employment in both developing and industrialized countries and alleviating manpower issues. As a labor-intensive sector, tourism not only creates employment within itself but also in other sectors that support tourism (secondary sectors). Furthermore, it generates employment in underdeveloped areas where job resources are limited, aiming to improve regional balance. It also helps to prevent rural depopulation in areas

where no other alternatives are available (Pizam, 1982, p. 5). Employment in the tourism industry vividly reflects global employment patterns and their transformations. Moreover, the unique characteristics of the tourism industry introduce interesting changes to employment models (Aykac, 2010, p. 12). Both management positions and basic service roles in the sector allow for the inclusion of employees with different skill and experience levels. This diversity makes the tourism industry dynamic and flexible. According to statistic global employment in travel and tourism (transportation, accommodation, food and beverage services) experienced a sharp decline after the onset of the COVID-19 pandemic, with a slight increase in 2022 compared to the previous year (Statista, 2023). However, despite this increase, the global number of jobs in travel and tourism remained below pre-pandemic levels, reaching a total of 295 million in 2022. In 2019, the tourism industries accounted for more than 22% of people employed in the service sector, indicating its significant growth potential even during economic turmoil. However, in 2020, considering that 36% of those employed in the total non-financial business economy were women, it was found that a large portion (58%) of the workforce in tourism sectors consisted of female workers. Travel agencies and tour operators stood out in this regard (64%), followed by the accommodation sector (60%). In most EU countries with available data, the share of young workers in the tourism industry was above the rate seen across the entire economy (Eurostat, 2022). Looking at the data, the tourism industry not only provides numerous job opportunities to a region or country but also offers employment opportunities to women, youth, unskilled workers, minorities, and socially disadvantaged individuals who face difficulties in finding jobs. In this sense, like other sectors, the tourism sector requires both skilled and unskilled labor (Burns, 1997, p. 241). While the tourism sector often relies on unskilled labor like hotel housekeepers and waiters (Lacher & Oh, 2012, p. 470), it also includes skilled personnel such as hotel managers, front office staff (Hai-yan & Baum, 2006), tour guides (Wong & Wang, 2009), and chefs and cooks (Sharma & Sharma, 2019). Skill development in tourism is also crucial for developing countries for various reasons. Firstly, to reach the potential of tourism in contributing to socio-economic development, there is a need for a national workforce with sufficient qualifications to benefit from the jobs and opportunities offered by tourism. Secondly, tourism is a highly competitive industry, and the level of service and professionalism, as well as the level of innovation offered, are key variables determining a country's success in attracting and expanding its share in the tourism market (Kaplan, 2004, p. 217).

LITERATURE SEARCH

SKILLED LABOR IN THE TOURISM INDUSTRY

A skilled workforce is considered to be of utmost importance to the success of the tourism industry, as it provides specialized services and expertise that enhance the overall tourist experience. Tour guides, chefs, accommodation managers, and event planners are just a few examples of the skilled workers who play a vital role in developing and delivering high-quality tourism products and services. These talented individuals possess the necessary knowledge and skills to meet the diverse needs and preferences of tourists.

The main objective of any accommodation organization is to provide efficient and high-quality service to ensure a satisfactory customer experience. Therefore, it is essential for hotel organizations to have a precise understanding of guests' expectations regarding their service experience (Crick & Spencer, 2011, p. 466). It is important to ensure that employees in the service industry are selected with care, receive adequate training, and are motivated to deliver high-quality performance. Skilled employees not only provide effective and efficient services, but also significantly influence the perceptions and experiences of customers and guests. It is common for the service industry to seek out employees with versatile skills. According to Elshaer and Marzouk (2019, p. 83), it is suggested that employees who possess a range of skills are not only more effective and efficient in their service provision, but also have a significant impact on shaping the perceptions and experiences of customers and guests (Elshaer & Marzouk, 2019, p. 83). One important consideration is the recognition of the growing importance of skills development in all tourism sectors, especially in service and customer care. The constantly changing market environment, customer expectations, and the use of support technologies all emphasize the need for improved in-service and up-to-date training for many staff in the sector (Baum, 1994, p. 263). Studies on qualifications and the labour force with an educational dimension aim to investigate the necessary training of employees and the qualifications required by the job. It is important to note that a mismatch between the education levels of employees and the qualifications required by the job can hinder productivity for both the employee and the employer. Additionally, the high demand for skilled labour can increase employment costs for employers (Kılınç, 2021). Quintini's (2011) study suggests that highly skilled workers in OECD countries tend to earn more than those who meet the average job qualifications, but less than those who are fully qualified. This finding is in line with the results of the studies conducted by Leuven and Oosterbeek (2011). Where employers who cannot

afford these costs are unable to recruit people with the skills they need, they try to fill the gap through vocational training or their own training systems (Kılınç, 2021). The assertions made by Krueger and Kumar (2004) regarding the advantageous outcomes of an education system emphasizing general skills in one's professional life should be subject to thorough scrutiny, as highlighted by Verhaest et al. (2017). It is strongly advised that individuals fuse their general skills with vocational expertise through immersive on-the-job training programs, ensuring a seamless connection to the demands of the working world. This approach aims to prevent any detachment from real-world work experiences, fostering a more integrated and practical educational journey.

UNSKILLED LABOR IN THE TOURISM INDUSTRY

The role of unskilled labour in the tourism sector is significant. It offers cost-effective labour to the industry, which helps to keep prices reasonable for tourists, especially in developing and middle-income countries where labour costs may be lower. However, the quality of service provided by unskilled labour can also impact the overall tourism experience. According to Riley (1996, p. 18), a considerable proportion of jobs in the tourism and hospitality sectors are classified as semi-skilled or unskilled. Specifically, 64% of jobs in the hotel, restaurant, and catering sectors fall into this category. While there may be differing opinions on the educational background, motivation, skills, and professionalism of employees in the hospitality sector (Williams & Shaw, 1988), it is important to approach the topic with objectivity and focus on performance-based assessments. According to Burns (1997), hospitality employment can be divided into two categories: 'skilled' and 'unskilled'. Burns emphasises the impact of 'semi-skilled' or 'unskilled' employees on customer satisfaction and business profitability. However, it is important to note that this distinction is a social construct, particularly in the postmodernist case. According to some studies, there is a perception that occupations in the service sector, particularly in hospitality, are undervalued. As a result, the skills necessary for these jobs are often viewed as less significant than those required in other sectors. The lack of social recognition for these jobs is a significant factor contributing to their lower status. For example, some occupations such as pizza delivery, waitressing, and security guarding may not appear to demand highly specialised skills. However, upon objective evaluation, it becomes evident that their skill sets are often more extensive than commonly assumed (Elshaer & Marzouk, 2019, p. 79). In numerous developing countries, the growth of a robust national tourism industry is impeded by the absence of a proficient local workforce in the tourism sector. As industries grow

in these countries, there is an increasing need for skilled labour, which may lead to the employment of foreign workers. This can result in a loss of income for developing countries as resources are directed towards metropolitan centres. The hotel industry in Hawaii provides a clear example of this phenomenon (Adler & Adler, 2004), Nevertheless, it is worth noting that this phenomenon can also be observed in countries that heavily depend on unskilled, temporary foreign workers in this sector (Elshaer & Marzouk, 2019). The tourism industry greatly benefits from the contribution of unskilled labour, which plays a fundamental and indispensable role in various sectors such as hospitality services and transport. Although advanced qualifications are not required, the commitment and effectiveness of unskilled workers are critical in maintaining service standards and ensuring customer satisfaction. It is widely acknowledged that the contribution of unskilled labour is crucial to the sustainable growth and success of the tourism sector.

PRODUCTIVITY IN THE TOURISM INDUSTRY

Productivity refers to the efforts made to improve the quality of products and services, protect the environment and natural resources, provide better living and working conditions for employees, and increase production efficiency (Yükçü & Atağan, 2010, p. 4). Productivity is an important concept in economics. It is widely acknowledged that achieving more output with less input is essential for increasing productivity and achieving economic growth (Liu & Wu, 2019, p. 253). In the tourism industry, as well as in other sectors of the economy, productivity can be defined as the efficient use of resources by relating the amount of inputs, particularly labour and capital employment, to outputs (Blake et al., 2006, p. 1101). While there are various productivity measures, including multi-factor productivity and capital productivity, labor productivity holds particular significance in the economic and statistical analysis of a country. It serves as a pivotal indicator, shedding light on several economic aspects, providing a dynamic gauge of economic growth, competitiveness, and living standards within an economy. The measure of labor productivity, encompassing all its considerations, plays a crucial role in elucidating the fundamental economic (Freeman, 2008, p. 5) foundations essential for both economic growth and social development Concepts such as productivity and efficiency describe the relationship between the output obtained in a production process and the input used. These terms encapsulate the effectiveness and optimization of resources in achieving desired results. Productivity refers to the overall output generated per unit of input, reflecting the efficiency of the production process. Efficiency, on the other hand, specifically emphasizes the ratio of output

to input, highlighting the capability of a system to minimize resource wastage and maximize output. Together, these concepts provide insights into the effectiveness and sustainability of various production processes (Suiçmez, 2015, p. 9). Labor productivity stands out as one of the most crucial determinants for achieving efficiency in production and realizing an uptick in profitability (Rojas & Aramvareekul, 2003, p. 78). The efficient utilization of labor resources directly influences the overall output a business can generate in relation to the input of labor. A higher level of labor productivity implies that a company is able to produce more goods or services using the same amount of labor, leading to cost savings and increased profitability. Therefore, the concept of productivity has attracted the attention of economists and financiers as it is the main driving force of economic growth and development and its effect on reducing input costs (Yılmazer, 2005). Moreover, factors such as raising the overall education levels, providing vocational training in workplaces, improving health and safety facilities, increasing capacity utilization rates, and implementing shift work systems are highlighted as avenues to boost productivity without necessarily relying on technological advancements (Gürak, 2006, p. 9). The study emphasizes the role of employee performance in determining productivity levels, recognizing that employee motivation is a crucial factor. According to the relative deprivation theory (Crosby, 1984), employees constantly compare job requirements and outcomes with their qualifications, influencing job satisfaction and, consequently, performance. The study predicts that highly qualified employees working in positions that do not align with their qualifications may experience decreased motivation and, consequently, diminished performance.

DATA AND METHODOLOGY

This study investigates the impact of skilled labor on productivity levels in developing and middle-income countries, with a particular emphasis on the tourism sector, where labor quality is a crucial determinant of competitiveness. For this purpose, the panel cointegration method was applied for the period 2004–2022, covering 14 countries (Turkey, Taiwan, Chile, Mexico, Brazil, Russia, Colombia, the Philippines, South Africa, Azerbaijan, Jordan, Uruguay, Costa Rica, and Ukraine) classified as developing and middle-income economies by the IMF and OECD. The selection of these countries is based on two considerations: (i) they share comparable structural and labor market characteristics, including tourism dependency, which increases the relevance of cross-country comparisons; and (ii) being in the same income category allows for a balanced panel data structure, minimizing heterogeneity biases.

All the time series used in the study have been compiled from the Office for National Statistics, ILO, and OECD websites. E-Views 10 and Gauss-9 econometric programs have been utilized in the study. In the study, the productivity variable has been included in the analysis as the total output/total workforce ratio considered by the International Labour Organization (ILO). Statistics for skilled and unskilled workers (high skilled and low skilled employer) have also been compiled from ILO and the mentioned websites. While compiling the statistics of the countries, even though different presentations like unskilled, low-skilled have been made on the countries' own sites, ILO and OECD have standardized this as low-high skilled worker/employer. Some countries have classified unskilled workers under minimum wage, and all data are monthly.

Table 1. Variables, symbols and sources

Variables	Symbols	Sources
Low Skilled / Unskilled Labor Force	unskilled	ILO, OECD, International STATISTIC INST., WORLDBANK
High Skilled / Skilled Labor Force	skilled	ILO, OECD, International STATISTIC INST., WORLDBANK
Productivity (total output / total workforce)	prod	ILO, OECD, International STATISTIC INST., WORLDBANK

Fonte: Prepared by the author (2024).

PANEL ARDL MODEL

In panel data analysis, cross-sectional and time series data coexist. Baltagi (2005) and Gujarati (2003) summarize the advantages of the panel data method as follows:

- Since the panel data method combines cross-sectional and time series observations, the number of observations is higher.
- Panel data techniques can account for heterogeneity by allowing some variables since they relate to countries over time.
- Panel data cause less multicollinearity problem among the variables.
- It allows econometric analysis in the presence of short time series and/or insufficient cross-sectional observations.
- The panel data method has a higher number of observations.
- The techniques used in panel data analysis can account for heterogeneity variables since they exist over samples like countries and firms.
- It permits econometric analysis in situations with insufficient cross-sectional observations or short time series.

- Panel data create less multicollinearity problem among the variables.

In cross-sectional and time estimations, pooled regression is mostly used for estimations, and mostly two methods are preferred. These are the Random Effects method and the Fixed Effects method. The main difference between these methods arises from the constant terms. There are mainly two approaches: the fixed effects model and the random effects model, for the K-variable panel data model in question.

In Equation (1), the beta coefficients take different values at different time periods for different units. Therefore, while analyzing the model, various assumptions related to the constant term, error term, and slope coefficients of the model are made, and in relation to this, different models can be analyzed. The main difference between the Random Effects Method and the Fixed Effects Method is at the constant terms. In the Fixed Effects Estimation Method, the difference between each cross-section in the panel is obtained by adding separate constants for each cross-section, while in the Random Effects Method, the characteristics of the cross-sections are unobservable and due to being distributed randomly, these random effects can be obtained from the error terms. Whether to use the model with fixed or random effects is decided by the Hausman (1978) test. If the probability of the Chi-square value of the Hausman (1978) test is less than 1%, it will be concluded that the Fixed Effects model is correct (Çetin, 2013, p. 42-43). In this section of our study, the regression coefficients will be estimated for both the Fixed Effect model and the Random Effect model.

Table 2. Regression Estimate Results for Fixed Effects Model

Depend Variable (productivity)	Coefficient	Standard Error	t value	Probability
unskilled	4.11	2.67	6.11	0.00**
skilled	-2.12	1.12	-6.42	0.00**
C	1211	213.11	4.22	0.00**
F (14.11) = 388.45, probability > F = 0.00				

***, **, and * represent the 1%, 5%, and 10% levels of statistical significance, respectively
Fonte: Prepared by the author (2024).

When examining the regression results related to the Fixed Effects Model, it is observed that a 1 unit increase in unskilled worker employment results in a 4 unit increase in productivity, while a 1 unit increase in skilled workers results in a 2 unit decrease in productivity. The calculated F statistic for the Fixed Effects Model has been found to be significant.

Table 3. Regression Estimation Results for Random Effects Model

Depend Variable (productivity)	Coefficient	Standard Error	t value	Probability
unskilled	3.98	2.48	6.11	0.00**
skilled	-2.36	1.35	-1.42	0.02**
C	1401	314.11	-1.22	0.06**
Wald X^2 =347,11, Porobability >0.00				

***, **, and * represent the 1%, 5%, and 10% levels of statistical significance, respectively
Fonte: Prepared by the author (2024).

When looking at the random effects model, the obtained results are in the same direction as the fixed effects results, where a 1 unit increase in the number of unskilled workers results in a 3.98 unit increase in productivity, while a 1 unit increase in skilled (qualified) workers results in a -2.36 unit decrease in productivity. The Wald test has been found significant in the random effects model.

PESARAN (2004) CROSS-SECTION DEPENDENCE TEST

In the study, Pesaran (2004) will be used to test for cross-sectional dependence. In the Pesaran cross-sectional dependence test, the null hypothesis posits that the cross-section is independent, while the alternative hypothesis claims that there is cross-sectional dependence.

Table 4. Cross-sectional Dependence Test Result

	Test stat.	Probability
Peseran Cross Section Dependence	5.54	0.00*

***, **, and * represent the 1%, 5%, and 10% levels of statistical significance, respectively
Fonte: Prepared by the author (2024).

Based on the results of the cross-sectional dependence test observed in Table 4, the null hypothesis is rejected at the 1% significance level. According to this result, it is concluded that there is cross-sectional dependence in the variables subject to the study (Pesaran 2004). In this section of the study, unit root tests will be applied to the variables for the ARDL tests to be conducted to examine long and short-term relationships, ensuring their stationarity. In our study, due to the presence of cross-sectional dependence, the Cross ADF – CIPS unit root test, which takes this situation into account, is preferred.

Table 5. Panel Unit Root Test at Level

variables	Constant model		
	CIPS Value t-Bar	**z- bar**	**P value**
unskilled	-2.33*	-2.41	0.00*
skilled	-1.91	1.54	0.91
prod	-1.14	-2.11	0.98
Critical values	-1.99 (%10)	-2.12(%5)	- 2.10(%1)
Variables	**Constant and trend Model**		
	CIPS Value t-Bar	**z- bar**	**P Value**
unskilled	-2.44*	-2.51	0.00*
skilled	-1.102	1.65	0.87
prod	-1.25	-2.22	0.97
Critical values	-2.10(10)	-2.23(%5)	-2.21(%1)

***, **, and * represent the 1%, 5%, and 10% levels of statistical significance, respectively
Fonte: Prepared by the author (2024).

According to the level constant/constant with trend unit root results, only the unskilled worker variable is stationary at the level, and the other variables contain a unit root. In this case, the process will be repeated by taking the difference of the variables.

Table 6. Panel Unit Root test at First Different

Variables	Constant model		
	CIPS Value t-Bar	**z- bar**	**P Value**
Δunskilled	-3.33	-2.41	0.00*
Δskilled	-3.90	1.54	0.00*
Δprod	-314	-2.11	0.00*
Critical values	-1.86 (%10)	-2.36(%5)	- 2.10(%1)
Variables	**Constant and trend Model**		
	CIPS Value t-Bar	**z- bar**	**P Value**
Δunskilled	-4.44	-2.51	0.00*
Δskilled	-5.102	1.65	0.00*
Δprod	-5.25	-2.22	0.00*
Critical values	-2.10(10)	-2.23(%5)	-2.21(%1)

Fonte: Prepared by the author (2024).

When the first difference is taken, all series have turned out to be stationary at the 1% significance level. At this stage of the study, a cointegration relationship will be identified between the series. In the literature, tests such as those by Pedroni et al. require that, for the level values of the variables, the estimated long-term coefficients and the estimated short-term error correction coefficients obtained using the first differences must be equal to each other. This, however, reduces the power of the tests and thus leads to the false rejection of a cointegration relationship between the variables even if there is one. To address the shortcomings of the Pedroni tests, Westerlund (2007) has developed four panel cointegration

tests based on the error correction model. Two of these tests are named as group mean statistics, and the other two are named as panel statistics. This test developed by Westerlund is based on the assumption that the series constituting the panel are stationary at the same degree and at the first difference, I (1) (Westerlund, 2007, p. 718). In our study, we have utilized the Westerlund (2007) test. The null hypothesis of this test defends the absence of a cointegration relationship in the panel, while the alternative hypothesis claims the existence of a cointegration relationship.

Table 7. Westurlund Cointegration Test Results

durbin h test	Durbin H Value	Probability
durbin H Group Statistic	2.44	0.026
durbin H Panel Statistic	5.01	0.00

Fonte: Prepared by the author (2024).

According to our cointegration results, since both the group and panel values are less than 1%, the null hypothesis has been rejected. This means that the variables under consideration in our study are in a cointegration relationship with each other.

PANEL ARDL BOUNDARY TEST ESTİMATES

In the panel boundary test approach, the mean group, MGE takes the unweighted average according to individual cross-sections for the coefficients, while the pooled mean group, PMGE calculates the coefficients and makes a weighted estimate.

Table 8. MGE and PMGE Results

	MGE			**PMGE**		
	Coefficient	Standart Error	P Value	Coefficient	Standart Error	P Value
	Long Run					
unskilled	14.51	21.01	**0.01****	**4.24**	**2.11**	**0.00***
skilled	19.11	30.90	**0.10**	**-2.01**	**1.76**	**0.00***
Error Correction Term						
EC	-0.34	0.15	0.00*	-0.50	0.04	0.01*
Short Run						
unskilled	12.43	18.00	**0.08**	**0.88**	**1.12**	**0.00***
skilled	10.09	14.98	**0.04**	**-0.11**	**1.77**	**0.00***
C	11.12	19.00		**11.11**	**3.66**	**0.00****
Hausman Statistic: $X^2 = 0.61, Probability > X^2 = 0.87$						

Fonte: Prepared by the author (2024).

According to the Hausman Test, the null hypothesis advocating the thesis 'Long-term parameters are homogeneous' is preferred over the alternative hypothesis claiming they are 'heterogeneous' to decide between PMGE or MGE. If the null hypothesis is accepted, PMGE is

preferred, whereas MGE is preferred if it is rejected. According to the results of our study, the null hypothesis accepting homogeneity has been accepted because the Hausman test statistic value is greater than the chi-square value. In other words, PMGE is valid for our model.

DISCUSSION

The short and long-term results of ARDL are showing a direct similarity with the effective and stable regression results at the beginning of the study. Accordingly, contrary to theoretical expectations, the study results indicate a direct proportion between efficiency and unskilled workers and an inverse proportion with skilled workers. In the short term, a 1-unit increase in skilled workers reduces efficiency by 0.11 units, and this rises up to 2 units in the long term. Meanwhile, with the increase of unskilled workers, efficiency increases by 0.88 units in the short term and goes up to 4 units in the long term. One of the most important points to consider here is the issue of the per-hour labor cost in these selected countries being relatively lower compared to other countries. This situation points to economies where labor-intensive production is prominent. In other words, it is considered that the industry existing in these countries predominantly consists of a structure that is medium/low technology and unskilled but labor-intensive, rather than the high technology-skilled worker duo in Western developed countries (Akbostanci et al., 2004; Totev & Sariiski, 2008; Khondoker & Kalirajan, 2012). In fact, discussions in the literature on this subject are focused on the suggestion that it may be more appropriate to prioritize labor-intensive production and develop their exports in this area until a certain level of development is reached (Khondoker & Kalirajan, 2012). However, it is also observed that many developing countries, despite following this path, could not achieve the same benefits and growth. Two outcomes can arise from this study. The first of these is the existence of findings parallel to the discussions in the literature within the scope of the selected country. In other words, until developing countries reach a certain level of development, the tourism sector exhibits these characteristics and their production/service structures are suitable for this. The second one is that, although there is an increase in highly skilled workers as a result of investments in education to enhance worker quality, the same rate of increase does not seem to be compatible with the employment of workers with such qualifications. Thus, it might be possible to speak of idle investment. Indeed, the reduced productivity of highly skilled workers can be explained by a lack of motivation, as well as the mismatch of qualification-job as mentioned at the beginning of our article. As also proposed by the relative deprivation theory, employees who encounter outputs lower than they deserve give negative reactions. It can be

asserted that the results of this research also support the studies conducted within the framework of the "person-job fit theory" (Kristof et al., 2002). In recent years, sector-based studies draw attention to the difficulty of finding qualified personnel from the employers' perspective. For instance, in Turkey, one of the countries used in the panel data research, the need for qualified labor reached 66% in 2017, while it reached 73% in Taiwan, 50% in Colombia, 43% in Brazil, 40% in Mexico, 35% in Costa Rica, and 34% in the Republic of South Africa (Manpowergroup, 2016). This situation could also suggest a mismatch between the qualifications employers are looking for and the features of the existing qualified workforce. Moreover, it may conclude that the education system in the existing countries is planned devoid of a general strategy that could meet the employer needs. There are discussions that the group seen as the qualified workforce is actually lacking the needed quality and that there exists a system educating relatively few students to the standards needed in a modern economy (World Bank Report, 2008).

MANAGERIAL IMPLICATIONS

The findings of the panel data analysis on the influence of skilled and unskilled labor on the tourism sector in developing and middle-income countries carry significant policy implications. Policymakers should consider investing in the development of skilled labor within the tourism industry, focusing on education and training programs to enhance managerial, marketing, and service quality skills. Additionally, efforts should be directed towards creating a supportive regulatory environment that encourages the growth of skilled labor. Strategies to address potential challenges associated with unskilled labor, such as the risk of lower service quality, could involve targeted training programs to elevate the skills of service staff. Importantly, recognizing the heterogeneity across countries is crucial, and policies should be tailored to the specific economic and cultural contexts of each nation. The study underscores the need for a dynamic and adaptive policy framework that considers the evolving nature of the tourism sector and responds to external shocks, ensuring resilience and sustainability in these critical industries.

LIMITATIONS AND FUTURE RESEARCH

While conducting a panel data analysis on the reflections of skilled and unskilled labor on the tourism sector in developing and middle-income countries, several limitations must be

acknowledged. The availability and quality of data pose challenges, as not all nations may possess comprehensive and consistent datasets for labor types and tourism metrics. Establishing causality between labor and tourism outcomes is intricate, introducing uncertainties in drawing definitive conclusions. Endogeneity concerns may persist, given the potential bidirectional relationship between skilled/unskilled labor and tourism, and addressing these issues may not entirely eliminate their impact. The heterogeneity across countries, dynamic nature of the tourism sector, policy changes, variations in labor definitions, and the influence of external shocks collectively contribute to the complexity of the analysis, limiting the generalizability of findings to a broader context. Model selection and specification challenges further add to the intricacies of accurately capturing the multifaceted relationship between labor dynamics and the tourism sector in diverse economic environments. Recognizing these limitations is paramount for a nuanced interpretation of results and for offering cautious policy recommendations.

The tourism sector must maintain high standards of professionalism and competence to attract and retain quality labour. This will help businesses gain a competitive advantage and become more influential in the global market. Increased professionalism in the workforce improves the quality of tourism services, which in turn delivers more satisfying experiences to travelling consumers. Valuing professional competence, upskilling, and rewarding achievement in the workplace can significantly increase employee motivation and productivity. Supporting career development is also crucial in increasing employees' long-term commitment and reducing job turnover. This has a positive impact on the image of employment in the sector, giving organizations a clear advantage in attracting and retaining qualified professionals. According to Stacey (2015), it can be argued that the competitiveness of businesses and destinations is closely linked to the continuous development and satisfaction of their employees. This approach can raise standards in the industry, increase customer satisfaction, and ultimately contribute to achieving sustainable success. By prioritizing these principles, businesses can build a stronger workforce, leading to an overall healthier competitive environment in the sector.

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