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# ANALYZING SPATIAL AND DISTRIBUTIONAL ISSUES IN SPECIALIZED TOURISM ECONOMIES: THE CASE OF URUGUAY

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## Abstract

In this article, we analyse the sectorial and spatial distribution of wages in tourism employment, and its characteristics in Uruguay for the 2012-2016 period. We found that, in general, workers in the tourism sector are younger than in other economic sectors and have less years of formal education. Also, the sector exhibits a higher informality rates, lower wages and more weekly work hours. When then focused on the distribution of hourly wages, Southern Interior appears as the most equalitarian in terms of distribution of hourly wages, while Metropolitan Montevideo and Northern Interior exhibit, in general, higher concentration of wages. If we focus in economic activities within tourism, there are not overall regional patterns, although some features can be identified at state level.

Classification JEL: L8, R1, R2

*Keywords:* tourism-related employment; regional development; spatial economics; income distribution

## Introduction

Over the last several decades, tourism has played a crucial role both as an income generator and as a source of employment, contributing to the regional and local economic growth and development of many countries around the world. According to the World Travel and Tourism Council (2018a), it is estimated that travel and tourism sector generated 8.3 trillion US dollars (representing 10.4% of the world's GDP) and 313 million jobs (9.9% of total employment) for the world economy in 2017. Specifically, in Uruguay, the sector represented 10.6% of GDP and generated 10.2% of national employment, reaching contributions above the regional average and of countries such as Brazil, Argentina, and Colombia (World Travel and Tourism Council, 2018b).

In this context, some relevant questions emerge. How is income from tourism allocated to families? How is income allocation throughout the many economic activities involved in the sector? Is there a geographical concentration of tourism incomes? It is recognized that tourism, if managed well, can be an important channel through which sustainable development can be achieved. A current discussing topic both in policy and academic fields is how a more "spatially equitable" distribution of income and employment related to tourism can be achieved (Marcoullier et al, 2004, Porto & Espinola, 2019).

Several studies have argued that the tourism industry is characterized by jobs that require relatively low levels of schooling, they are of short average tenure, and they have a high rate of informality and with low relative wages as compared to the local economy's average. These labor characteristics negatively affect the average level of regional or local wages and income (Ashworth, 1992; Lee and Kang, 1998; Santos and Varejão, 2007; Blake et al., 2008; Muñoz-Bullón, 2009; Espinola, 2016). Consequently, the level of development of tourism, a higher or a lesser dependence of a region on tourism activities, could generate income inequality both between and within regions of a country.

Some studies have assessed the effects of the share of employment in tourism on local income distribution in a country (Porto & Espinola, 2019 in Argentina; Incera & Fernandez, 2015 in Spain; Marcoullier et al., 2004 in the United States, English et al., 2000 in EEUU). The results show that employment in tourism has an income inequality effect, although in some cases it is not statistically significant. Marcoullier & Xia (2008) also present empirical evidence of regional differences in the distribution of income related to tourism activities, finding that urban tourism exhibits generally higher levels of income inequality when compared to rural remote or exurban, suburban proximate tourism. It has also been found that there are differences in employment and income distribution within the sector, so the different allocation of these activities can intensify or conversely offset regional disparities. Marcoullier & Xia (2008) show that income inequality in tourism employment is both "a sector-specific and spatial attribute." In Argentina, the study of Oliva & Schejter (2006) and Espinola (2016) suggests that these intra-sector differences are present both in incomes and in labor conditions. Rodriguez Brindis (2014) also find, for the Mexican case, that the contribution of tourism to GDP varies between the industries that constitute the sector. Alam & Paramati (2016) investigate the impact of tourism on income inequality in 49 developing economies around the world, and found that tourism increases income inequality significantly. The authors argue that the benefits of tourism development may only be confined to an elite class of people in society, such as the owners of the tourism service providers, entrepreneurs, investors and managers of tourism enterprises. In addition, tourism related

business enterprises may create only low salaried jobs in the local communities and exploit their services and resources, which eventually increase the income inequality in any given society. Conversely, Lv (2019) examines the impact of tourism on regional inequality from 1995 to 2012 within 113 countries of the world using satellite night-light based inequality proxies, and found that tourism has a negative long-run effect on regional inequality, suggesting that promoting the development of tourism is an effective tool to achieve more balanced regional development.

This paper aims to analyze the spatial and sectoral distribution of employment and wages in the tourism sector in Uruguay between 2012 and 2016, with the purpose of obtaining policy recommendations tending to contribute regional economic development. We propose to contribute to this literature giving empirical evidence for the case of Uruguay. Although Uruguay is a relatively small country as compared to nearby countries such as Argentina and Brazil, its ratio of tourists per capita is 1.06 while in the rest of the countries of Latin America that ratio varies between 0.01 and 0.36. Also, tourism income represents 16.3% of its exports, the most significant percentage of the region, making it a country specialized in tourism (World Bank, 2017). The article constitutes a first approach to the problem, providing a descriptive analysis that serves as a basis for a broader research agenda in progress.

## Methods and data

The most important methodological issues can be summarized as follows:

1. Tourism sector definition: any establishment whose primary economic activity is any of the following: 1) Accommodation services, 2) Food, 3) Passengers' transport services, 4) Travel agencies and complementary touristic support services and 5) Entertainment, Cultural and Sport services (Espinola, 2016 and United Nations & UNWTO, 2010). It is a definition based on a supply side or industry perspective that allows a delimitation of sectors on which secondary data can be collected.
2. Characterization of employment in tourism: we present a descriptive statistics analysis, exploring the socio-demographic and economic characteristics as well as labor conditions of the tourism sector compared to non-tourism sector. Also, we explore the labor and occupational structure in the tourism sector.
3. Sectorial and spatial distribution approach: we use conventional tools for distribution analysis such as the Lorenz Curve and the Gini Index to explore inequality in the distribution of hourly wages between economic activities related to tourism and between regional and state (department) level. The Lorenz Curve is represented in a 1x1 box, where the horizontal axis shows the proportion of people with the lowest income in the population. If all people had the exact same income, Lorenz Curve would match the 45° line, so this line is known as perfect equality line. The further away from the perfect equality line the Lorenz Curve is, the more unequal the distribution will be. Gini Index is computed as the area between the Lorenz Curve and the perfect equality line, to get a proportion. The formula is

$$G = -1 + 2 \int_0^{\infty} F(y) \frac{y}{\mu} f(y) dy$$

where  $y$  is the variable of interest,  $\mu$  is its mean and  $f(y)$  its distribution function and  $F(y)$  its cumulative distribution function. We also present maps to illustrate the spatial distribution.

## Data

The database from the Continuous Household Survey (*Encuesta Continua de Hogares*, ECH, Spanish acronym) conducted by the National Institute of Statistics of Uruguay was used. This survey provides the official labor market and household income indicators of the country, and it is also used to estimate poverty indexes. The ECH includes a variable with the 4-digit ISIC Revision 4 level classification of economic activities, enabling to use or even refine the definition of tourism previously mentioned. This variable was used to distinguish between the many economic activities included in tourism sector definition, and then explore inequality in the distribution of hourly wages within the sector. The period considered in this study is that between 2006 and 2016. The reason behind this selection is that considering a period of a decade allows us for exploring the evolution over time. Furthermore, the survey was only urban until 2005. Since 2006, it has national coverage, allowing for the spatial analysis to cover both urban and rural departments.

Throughout this article, main results are presented for the 2012-2016 period, while the analysis of years 2006 to 2011 is shown in the Annex. The reason is that, for the oldest period, activities are classified following ISIC Revision 3, which does not allow for defining tourism with the same criteria. An important issue is that, with this codification, it is not possible to distinguish between passengers and freight transport, which is crucial for our definition of tourism. Hence, the analysis mainly was based in the most recent period, not only because the calculations are computed from more updated surveys, but also because these surveys allows for constructing a more accurate definition of tourism sensitive economic activities.

## Descriptive results

### *Employment characteristics*

This section exhibits a descriptive analysis of tourism sector with the aim of exploring the socio-demographic and economic characteristics as well as labor conditions of the workers in the tourism sector compared to, mainly, the workers in the non-tourism sector. The non-tourism sector includes all economic activities of services not related to tourism. Also, the labor and occupational structure within the tourism sector was analyzed.

Table 1 shows the average characteristics of workers by sector, tourism sector, non-tourism service sector, rest of the economy (primary and secondary sector) and overall economy- for the period 2012-2016. Table A.1. Main labor and socio-economic characteristics, by employment sector. Average for years 2006 to 2011. Table A.1 in Annex shows the same estimates for the average between 2006 and 2011.

**Table 1. Main labor and socio-economic characteristics, by employment sector. Average for years 2012 to 2016.**

	Employment				Mean diff. (T-NT)
	Tourism	Non Tourism	Rest of Economy	Total	
<b>Age</b>	39,94	40,72	41,17	40,82	-0,78**
<b>Years of education</b>	10,10	11,25	8,71	10,27	-1,15**
<b>Maximum educational level (%)</b>					
Until primary complete	16,34	15,78	35,27	22,54	0,56**
Secondary uncompleted	51,60	38,36	44,71	41,75	13,24**
Secondary complete	15,40	13,73	9,94	12,55	1,68**
Superior uncompleted	10,78	11,76	5,41	9,42	-0,98**
Superior complete	5,87	20,37	4,61	13,71	-14,5**
<b>Informality (%)</b>	22,18	17,09	31,38	22,87	5,09**
<b>Monthly labor income <sup>(1)</sup></b>	14215,00	15321,61	13978,14	14754,46	-1106,62**
<b>Weekly hours of work</b>	41,84	38,74	41,72	39,95	3,11**
<b>Hourly wage <sup>(1)</sup></b>	84,45	97,50	79,88	90,40	-13,05**
<b>Part time employment (%)</b>	12,56	13,81	11,39	12,94	-1,26**
<b>Size of firm (%)</b>					
< 10 employees	43,56	42,33	55,26	47,34	1,23**
Between 10 and 50 employees	21,27	12,59	15,51	14,23	8,68**
> 50 employees	35,17	45,08	29,23	38,43	-9,91**
<b>Occupational qualification (%)</b>					
Professional	8,78	21,02	4,39	14,20	-12,24**
Technician	7,20	9,44	4,32	7,45	-2,24**
Operator	70,85	53,27	68,83	60,43	17,58**
Unskilled	13,16	16,26	22,46	17,92	-3,1**
<b>Share of women (%)</b>	38,66	56,01	25,60	43,60	
<b>Number of obs.</b>	19138	154904	89274	263316	
<b>Share of employed (%)</b>	7,32	58,50	34,18	100,00	

<sup>(1)</sup> Monthly income and hourly wages from mean activity at prices of 2010.

\* significant at 5%; \*\* significant at 1%.

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2012-2016.

Tourism sector accounts for around 7.3% of total employment and presents a lower participation of women than the economy as a whole (38.7% against 43.6%). This result is in line with those found for Argentina, but in contrast with international evidence (Espinola, 2016). On the other hand, non-tourism employment represents 58.5% of those employed in the economy and has a higher participation of women (nearly 56%). Regarding socio-economic characteristics, workers in tourism sector are on average younger than workers of non-tourism sector –the difference is less than one year but statistically significant. Also, they have less years of formal education (more than one year of difference) and more than half of workers in the sector (51.6%) have secondary uncompleted as their maximum educational level achieved while in the non-tourism sector this share is about 38%, with more than 20% of workers with superior complete, against less than 6% in the tourism sector. These characteristic patterns remain when tourism is compared to the economy as a whole and are also in line with international evidence (Espinola, 2016).

Regarding labor conditions, tourism sector also shows a more disadvantaged environment than the non-tourism one, since it exhibits higher informality<sup>1</sup> rates (22.2% against 17.1%), lower monthly income and hourly wages (\$14,215 against \$15,321 and 84.5 against 97.5, respectively)

<sup>1</sup> A worker is considered informal if (s)he does not have the right to a pension when retired.

and more weekly hours of work (41.8 against 38.7). Also, the share of part time employment is lower (12.6 % against 13.8%) and is more concentrated in small firms (only 35.2% come from firms with more than 50 employees against 45.1% in the non-tourism sector). Those results are also consistent with those found by Espinola (2016) for the case of Argentina.

If we consider occupational qualification, the results are consistent with those related to education. More than 84% of workers in tourism perform tasks as operators or unskilled workers. This proportion lowers to 69.5% for the non-tourism sector and 78.3% for the economy as a whole. It is higher only for the rest of the economy (over 91%) as it includes primary and secondary activities<sup>2</sup>.

Focusing on 2006-2011 period, some characteristics are different. While tourism workers are on average younger, have a lower level of formal education and are mainly employed in small firms and are a less concentrated in part time employments as in the 2012-2016 period, they present lower informality rates (27.8% against 28.2%) and have higher monthly income (\$13,311 against \$12,651). However, this apparently more favorable situation is actually explained by the fact that these jobs entail, on average, over 3 more hours a week of work. In fact, hourly wages are lower for Tourism workers are compared with Non-tourism ones (Table A.1). It must be noticed that these differences may be due to the difference in tourism sector definition between periods. Regarding occupational qualification, almost 77% of workers in Tourism sector are operators or unskilled workers, while this share is about 69% for Non-tourism workers.

Table 2 presents an analogous analysis within Tourism sector for the period 2012-2016, while Table A.2 in Annex corresponds to 2006-2011 period. It can be noticed that within Tourism sector, female labor is mainly concentrated in Accommodation, Food services and Travel agencies and complementary services, representing more than 50% of occupied in those subsectors. On the other hand, they represent only 13.4% of workers from Passengers' transport activities and 36.4% in Entertainment, cultural and sport services.

In addition, there is a marked difference between educational profiles within the sector. Workers from Food and Transport services have, on average, less years of education and more than 80% of these employed have achieved only secondary complete. On the other hand, roughly 10% of workers have attended superior courses in these sectors, while this proportion reaches almost 18%, 28% and 48% in Accommodation, Entertainment and Travel Agencies services, respectively.

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<sup>2</sup> Occupational qualification was classified in those four categories, following Espinola (2016), who studies the Argentinian case, with the aim of being able to perform a comparative analysis between both countries in a future step of this research. However, Argentinian and Uruguayan household surveys use different classification of occupations. While Uruguay adopts ISCO-08 codification, Argentina relies on its own National Classification of Occupations (CNO). This national taxonomy explicitly identifies these four categories, but the same does not occur with the ISCO codification. Thus, for this article, we followed a criterion based on Ospino Hernandez (2018), and thus we defined these four categories by assuming a correspondence between main ISCO groups and the skills required for each of them. As a result, we classified groups 1 and 2 as professional, group 3 as technician, groups 4 to 8 as operators and group 9 as unskilled.

Regarding labor conditions, Transport services entail more weekly hours (49 hours/week) in relation to other activities, with Entertainment services on the opposite side (34 hours/week). Hourly wages are higher in Travel agencies activities, followed by Entertainment services.

The subsector with the more qualified jobs is Entertainment (with 45% of workers being professional or technician), followed by Travel agencies services (17%). On the contrary, operators and unskilled workers have a higher participation in Transport and Food services (95% and 94%, respectively). Overall, these patterns remain when considering the 2006-2011 period.

**Table 2. Main labor and socio-economic characteristics, by Tourism subsector. Average for years 2012 to 2016.**

	Tourism sensitive sectors				
	Accommodation services	Food	Passengers' transport services	Travel agencies and complementary touristic support services	Entertainment, Cultural and Sport services
<b>Age</b>	38,81	37,35	44,80	37,05	39,23
<b>Years of education</b>	10,24	9,46	9,88	12,95	10,89
<b>Maximum educational level (%)</b>					
Until primary complete	17,74	20,02	14,69	2,24	13,77
Secondary uncompleted	46,33	56,86	57,46	22,69	43,10
Secondary complete	17,95	12,48	17,23	27,02	15,13
Superior uncompleted	9,95	8,40	7,13	30,74	16,37
Superior complete	8,02	2,23	3,49	17,31	11,62
<b>Informality (%)</b>	6,45	36,02	6,46	6,32	28,33
<b>Monthly labor income <sup>(1)</sup></b>	13436,53	11075,16	18613,26	19992,17	13605,34
<b>Weekly hours of work</b>	43,39	40,50	49,90	40,96	34,17
<b>Hourly wage <sup>(1)</sup></b>	75,28	66,99	93,53	117,35	100,56
<b>Part time employment (%)</b>	5,00	14,06	4,20	7,45	23,83
<b>Size of firm (%)</b>					
< 10 employees	22,44	61,43	35,42	30,03	37,27
Between 10 and 50 employees	35,75	26,94	11,61	29,46	15,99
> 50 employees	41,81	11,63	52,97	40,51	46,74
<b>Occupational qualification (%)</b>					
Professional	8,68	4,03	2,53	11,83	22,64
Technician	3,44	1,82	2,32	6,05	22,68
Operator	55,09	77,68	92,55	79,54	42,24
Unskilled	32,78	16,46	2,60	2,59	12,44
<b>Share of women (%)</b>	57,29	52,32	13,42	52,09	36,42
<b>Number of obs.</b>	2143	6850	5049	544	4552
<b>Share of employed (%)</b>	10,89	35,65	26,80	2,94	23,72

<sup>(1)</sup> Monthly income and hourly wages from mean activity at prices of 2010.

\* significant at 5%; \*\* significant at 1%.

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2012-2016.

### *The sectoral distribution of hourly wages in tourism*

The analysis exhibited in previous section shows that there are some differences on labor conditions between Tourism and Non-tourism industries. Moreover, there are also disparities inside the tourism sector if we distinguish the many economic activities that compose the sector.

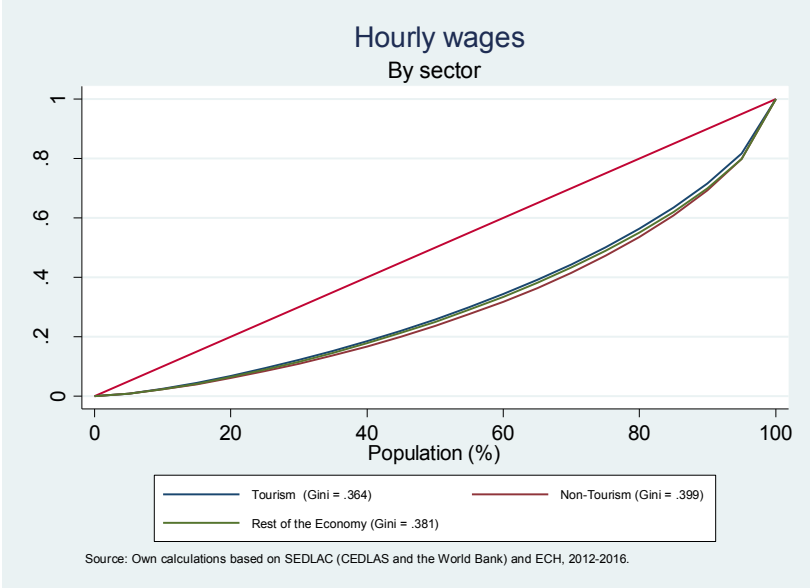
In this context, an important concern is how these differences affect families. If there are inequalities in the distribution of income between sectors and subsector, there clearly will be an effect on the welfare of families behind these jobs.



This section explores the distribution of hourly wages between sectors and also within tourism sector by economic activities. Results are also shown by region and state to identify possible spatial differences.

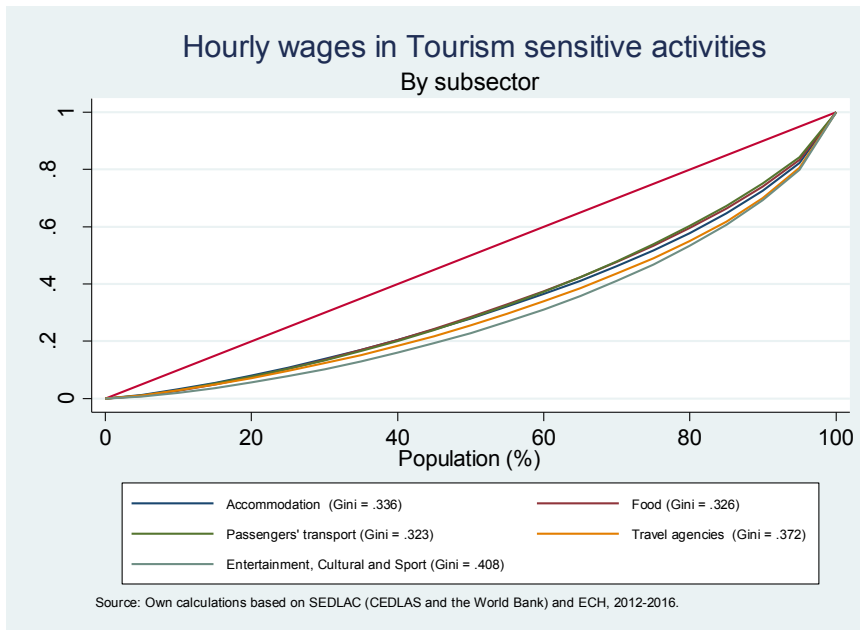
Figure 1 shows Lorenz curves for hourly wages by sector (tourism, non-tourism and rest of economy). As can be observed, Tourism activities exhibit a lower concentration of wages than Non-Tourism activities and rest of economy, the Gini Index was 0.364 against 0.399 and 0.381, respectively.

Figure 1. Lorenz curve for Hourly wages, by sector. Average for years 2012 to 2016.



Focusing on each economic activities within tourism sector (Figure 2), hourly wages are more concentrated in the case of Entertainment, Cultural and Sport services, with a Gini Index of 0.408. It is followed by Travel agencies services (0.372), while there are no large differences between the remaining sectors (0.336, 0.326 and 0.323 for Accommodation services, Food and Passengers' transport, respectively).

Figure 2. Lorenz curve for Hourly wages in Tourism industries, by subsector. Average for years 2012 to 2016.



### *The spatial distribution of hourly wages in tourism*

Although Uruguay is a relatively small country in terms of geographical surface, there may be regional disparities inward. The country is divided into 19 states (*'departamentos'*) with different characteristics. As can be noticed from Table 3, population density is substantially high in Montevideo (over 2600 hab/km<sup>2</sup>) while in other states such as Durazno, Flores or Treinta y Tres is around 5 hab/km<sup>2</sup> and it is 20 hab/km<sup>2</sup> for the whole country. Regarding social welfare, Montevideo has the lowest share of population (less than 27%) with at least one basic need non-satisfied, followed by Flores (28.6%) and Colonia (30.3%). On the opposite, more than 54% of people in Artigas and 49% in Salto have at least one UBN.

**Table 3. Characteristics of states in Uruguay. Main indicators.**

State	Surface (km2)	Population (*)	Population density	UBN (**)
Montevideo	530	1381228	2606,1	26,8%
Artigas	11928	74810	6,3	54,4%
Canelones	4536	581532	128,2	33,6%
Cerro Largo	13648	89557	6,6	44,8%
Colonia	6106	130008	21,3	30,3%
Durazno	11643	58996	5,1	42%
Flores	5144	26504	5,2	28,6%
Florida	10417	69312	6,7	32,2%
Lavalleja	10016	59161	5,9	33,6%
Maldonado	4793	187576	39,1	34,5%
Paysandú	13922	119094	8,6	41,4%
Río Negro	9282	57644	6,2	38,9%
Rivera	9370	108319	11,6	45,4%
Rocha	10551	73999	7	35%
Salto	14163	132294	9,3	49,4%
San José	4992	115584	23,2	35,7%
Soriano	9008	84032	9,3	38,9%
Tacuarembó	15438	93039	6	45,2%
Treinta y Tres	9529	50516	5,3	41,1%
<b>Total</b>	<b>175016</b>	<b>3493205</b>	<b>20,0</b>	<b>33,8%</b>

Source: Own elaboration based on INE - Anuario Estadístico Nacional 2018, 95ª versión and Calvo (coord, 2013).

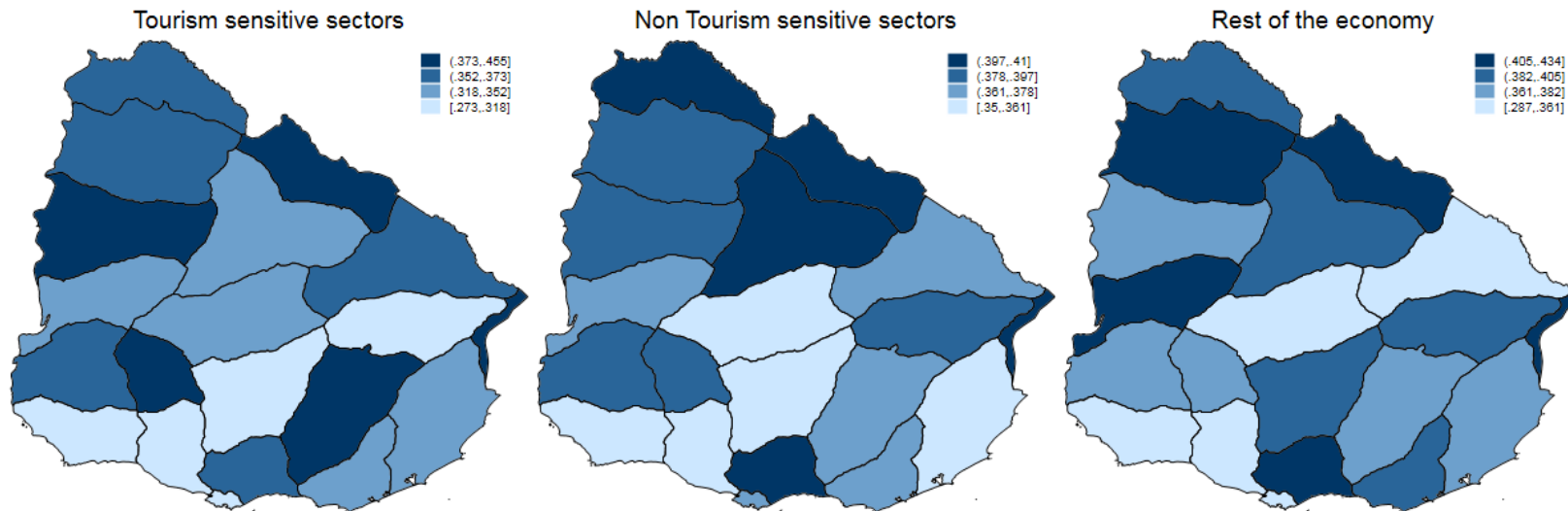
(\*) 2017 projects.

(\*\*) Percentage of population with at least one unsatisfied basic need (UBN). Estimates for 2013.

In this context, it is interesting to explore whether there are spatial differences in incomes than can be related to location characteristics. In the Figure 3 and Table 4 the Gini index of hourly wages by subsector and states was shown. The pattern of lower inequality of the tourism sector compare to non-tourism remains in all regions, and in most states, except in Florida, Paysandu and Rivera.

Figure 3. Gini Index for the distribution of Hourly wages, by state and sector of activity. Average for years 2012 to 2016.

### Inequality in Hourly wages By sector



Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2012-2016.

**Table 4. Gini Index for the distribution of Hourly wages, by state and sector of activity. Average for years 2012 to 2016.** <sup>3</sup>

Region/State	Employment			Total
	Tourism	Non Tourism	Rest of Economy	
<b>Metropolitan Montevideo</b>	<b>0,360</b>	<b>0,401</b>	<b>0,385</b>	<b>0,396</b>
Montevideo	0,359	0,402	0,391	0,399
<b>Northern Interior</b>	<b>0,390</b>	<b>0,405</b>	<b>0,429</b>	<b>0,416</b>
Artigas	0,356	0,398	0,423	0,411
Rivera	0,455	0,410	0,434	0,423
Salto	0,352	0,397	0,425	0,407
<b>Mid-northern Interior</b>	<b>0,355</b>	<b>0,386</b>	<b>0,379</b>	<b>0,383</b>
Cerro Largo	0,273	0,350	0,287	0,322
Durazno	0,395	0,395	0,382	0,391
Paysandú	0,389	0,381	0,373	0,379
Río Negro	0,340	0,378	0,415	0,394
Tacuarembó	0,346	0,407	0,403	0,404
Treinta y Tres	0,312	0,391	0,405	0,396
<b>Mid-southern Interior</b>	<b>0,359</b>	<b>0,370</b>	<b>0,378</b>	<b>0,373</b>
Flores	0,318	0,357	0,384	0,369
Florida	0,399	0,375	0,379	0,379
Lavalleja	0,324	0,371	0,385	0,375
Rocha	0,352	0,352	0,365	0,357
Soriano	0,373	0,381	0,375	0,379
<b>Southern Interior</b>	<b>0,332</b>	<b>0,358</b>	<b>0,339</b>	<b>0,349</b>
Canelones	0,368	0,377	0,361	0,373
Colonia	0,323	0,353	0,334	0,343
Maldonado	0,309	0,361	0,326	0,344
San José	0,316	0,361	0,317	0,340
<b>All states</b>	<b>0,364</b>	<b>0,399</b>	<b>0,381</b>	<b>0,393</b>

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2012-2016.

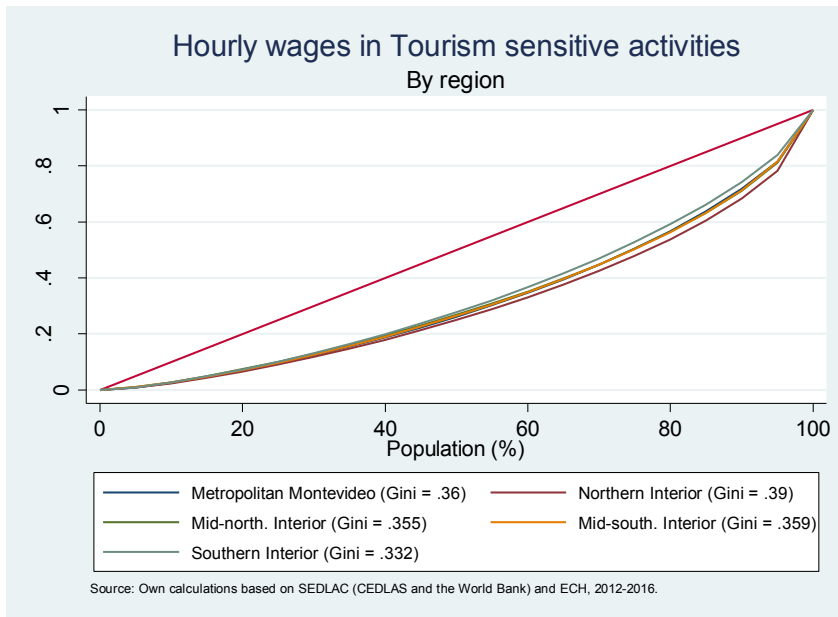
Note: Missing values are due to lack of observations.

If we compare regions, Southern Interior appears as the most equalitarian in terms of distribution of hourly wages, since its Gini Index is the smallest in all sectors. On the opposite, Metropolitan Montevideo and Northern Interior exhibit, in general, higher Gini indexes, as a result of a higher concentration of wages<sup>4</sup>. These regional differences can be distinguished through Lorenz curves shown in Figure 4.

<sup>3</sup> Regions are defined based on state and strata variables reported in the surveys. The variable of strata allows for distinguishing between different areas around Montevideo, so Metropolitan Montevideo includes some locations from other states. This is the reason why regional data does not exactly match state data in this case.

<sup>4</sup> Within regions, there are some differences between states. To name a few, Rivera appears as the least equalitarian state within Northern region, regardless the sector considered. The same occurs with Canelones within Southern region.

Figure 4. Lorenz curve for Hourly wages in Tourism industries, by region. Average for years 2012 to 2016.



It can be interesting to explore whether there is some linkage between the most touristic states and the income distribution pattern. Table 5 shows the flow of visitors and their expenditure by main state of destination for year 2017<sup>5</sup>.

The states with the highest number of visitors per year are Montevideo (29.3% of visitors) and Maldonado (28.4%), followed by Salto (10.6%) and Colonia (8.2%). If we consider expenditures, Maldonado accounts for over 50% of total expenditure of visitors while Montevideo accounts for less than 27%, implying that expenditure per capita is higher for visitors in Maldonado, as compared to other states. If we focus in regions, the case of Maldonado certainly explains the relative importance of Southern Interior both in terms of visitors and in terms of expenditure. Future research will explore whether there are differences in wages between tourism and non-tourism sector in those states where tourism is an important economic activity<sup>6</sup>.

<sup>5</sup> This table was constructed from data collected at state level, so regions were grouped based only on state, with no information about strata. For this reason, Metropolitan Montevideo only includes Montevideo state in this table, unlike Table 4.

<sup>6</sup> A preliminary analysis based on standard mean difference hypothesis testing shows that average hourly wages are statistically higher in tourism sector than in the non tourism sector in states like Maldonado, Montevideo, Salto y Colonia, at 5% significance level.

**Table 5. Visitors and expenditure of visitors by destination. Year 2017.**

Region/State	Visitors by main state and region destination		Expenditures of visitors by main state and region destination	
	Visitors (in thousands)	%	Expenditure (in current USD millions)	%
<b>Metropolitan Montevideo</b>	<b>1080,2</b>	<b>29,3%</b>	<b>\$ 618,12</b>	<b>26,6%</b>
Montevideo	1080,2	29,3%	\$ 618,12	26,6%
<b>Northern Interior</b>	<b>406,0</b>	<b>11,0%</b>	<b>\$ 126,09</b>	<b>5,4%</b>
Artigas	14,6	0,4%	\$ 3,35	0,1%
Rivera	1,6	0,0%	\$ 0,52	0,0%
Salto	389,9	10,6%	\$ 122,22	5,3%
<b>Mid-northern Interior</b>	<b>336,2</b>	<b>9,1%</b>	<b>\$ 65,17</b>	<b>2,8%</b>
Cerro Largo	18,2	0,5%	\$ 5,33	0,2%
Durazno	8,3	0,2%	\$ 1,46	0,1%
Paysandú	152,4	4,1%	\$ 29,82	1,3%
Río Negro	128,3	3,5%	\$ 23,60	1,0%
Tacuarembó	22,5	0,6%	\$ 3,63	0,2%
Treinta y Tres	6,5	0,2%	\$ 1,33	0,1%
<b>Mid-southern Interior</b>	<b>276,4</b>	<b>7,5%</b>	<b>\$ 167,07</b>	<b>7,2%</b>
Flores	3,3	0,1%	\$ 0,88	0,0%
Florida	5,0	0,1%	\$ 1,76	0,1%
Lavalleja	5,2	0,1%	\$ 2,66	0,1%
Rocha	224,6	6,1%	\$ 154,45	6,6%
Soriano	38,3	1,0%	\$ 7,32	0,3%
<b>Southern Interior</b>	<b>1584,3</b>	<b>43,0%</b>	<b>\$ 1.349,49</b>	<b>58,0%</b>
Canelones	224,4	6,1%	\$ 88,30	3,8%
Colonia	303,1	8,2%	\$ 90,53	3,9%
Maldonado	1045,3	28,4%	\$ 1.167,73	50,2%
San José	11,6	0,3%	\$ 2,93	0,1%
<b>All states</b>	<b>3683,1</b>	<b>100%</b>	<b>\$ 2.325,94</b>	<b>100%</b>

Source: Own calculations based on Ministerio de Turismo de Uruguay (2018): Anuario Estadísticas de Turismo, Montevideo.

Table 6 shows Gini Index for hourly wages by tourism subsector, also at regional and state level. Considering all economic activities related to tourism, Rivera has the higher concentration of hourly wages, with a Gini index of 0.455. On the opposite, Cerro Largo has the most equalitarian distribution, with a Gini of 0.273. Distinguishing both at sectoral and geographical level, hourly wages are relatively less concentrated in Travel agencies services in Tacuarembó and Treinta y Tres states (Mid-northern region) as well as in Accommodation services in Flores and Florida (in Mid-southern region) while there is higher concentration in the same economic activities in Salto (Northern region) as well as in Entertainment services in Rivera (also within Northern region). These sectoral and spatial differences are also depicted in Figure 5.

**Table 6. Gini Index for the distribution of Hourly wages in Tourism, by state and subsector. Average for years 2012 to 2016.**

Region/State	Tourism sensitive sectors					All tourism sensitive sectors
	Accommodation services	Food	Passengers' transport services	Travel agencies and complementary touristic support services	Entertainment, Cultural and Sport services	
<b>Metropolitan Montevideo</b>	<b>0,350</b>	<b>0,312</b>	<b>0,316</b>	<b>0,368</b>	<b>0,405</b>	<b>0,360</b>
Montevideo	0,354	0,312	0,310	0,370	0,406	0,359
<b>Northern Interior</b>	<b>0,339</b>	<b>0,353</b>	<b>0,394</b>	<b>0,596</b>	<b>0,433</b>	<b>0,390</b>
Artigas	0,265	0,357	0,302		0,392	0,356
Rivera	0,252	0,371	0,464	0,456	0,563	0,455
Salto	0,355	0,326	0,335	0,598	0,339	0,352
<b>Mid-northern Interior</b>	<b>0,318</b>	<b>0,309</b>	<b>0,342</b>	<b>0,274</b>	<b>0,402</b>	<b>0,355</b>
Cerro Largo	0,195	0,243	0,251		0,300	0,273
Durazno	0,381	0,411	0,319	0,367	0,430	0,395
Paysandú	0,377	0,306	0,390	0,218	0,416	0,389
Río Negro	0,250	0,311	0,307		0,377	0,340
Tacuarembó	0,234	0,315	0,362	0,002	0,416	0,346
Treinta y Tres	0,232	0,268	0,301	0,100	0,356	0,312
<b>Mid-southern Interior</b>	<b>0,330</b>	<b>0,343</b>	<b>0,317</b>	<b>0,373</b>	<b>0,393</b>	<b>0,359</b>
Flores	0,200	0,248	0,276	0,260	0,370	0,318
Florida	0,217	0,450	0,319	0,246	0,355	0,399
Lavalleja	0,300	0,277	0,242		0,421	0,324
Rocha	0,335	0,321	0,357	0,242	0,385	0,352
Soriano	0,396	0,322	0,328	0,405	0,397	0,373
<b>Southern Interior</b>	<b>0,300</b>	<b>0,321</b>	<b>0,290</b>	<b>0,346</b>	<b>0,366</b>	<b>0,332</b>
Canelones	0,362	0,331	0,318	0,345	0,411	0,368
Colonia	0,286	0,263	0,333	0,255	0,358	0,323
Maldonado	0,265	0,321	0,277	0,385	0,325	0,309
San José	0,225	0,257	0,290	0,164	0,338	0,316
<b>All states</b>	<b>0,336</b>	<b>0,326</b>	<b>0,323</b>	<b>0,372</b>	<b>0,408</b>	<b>0,364</b>

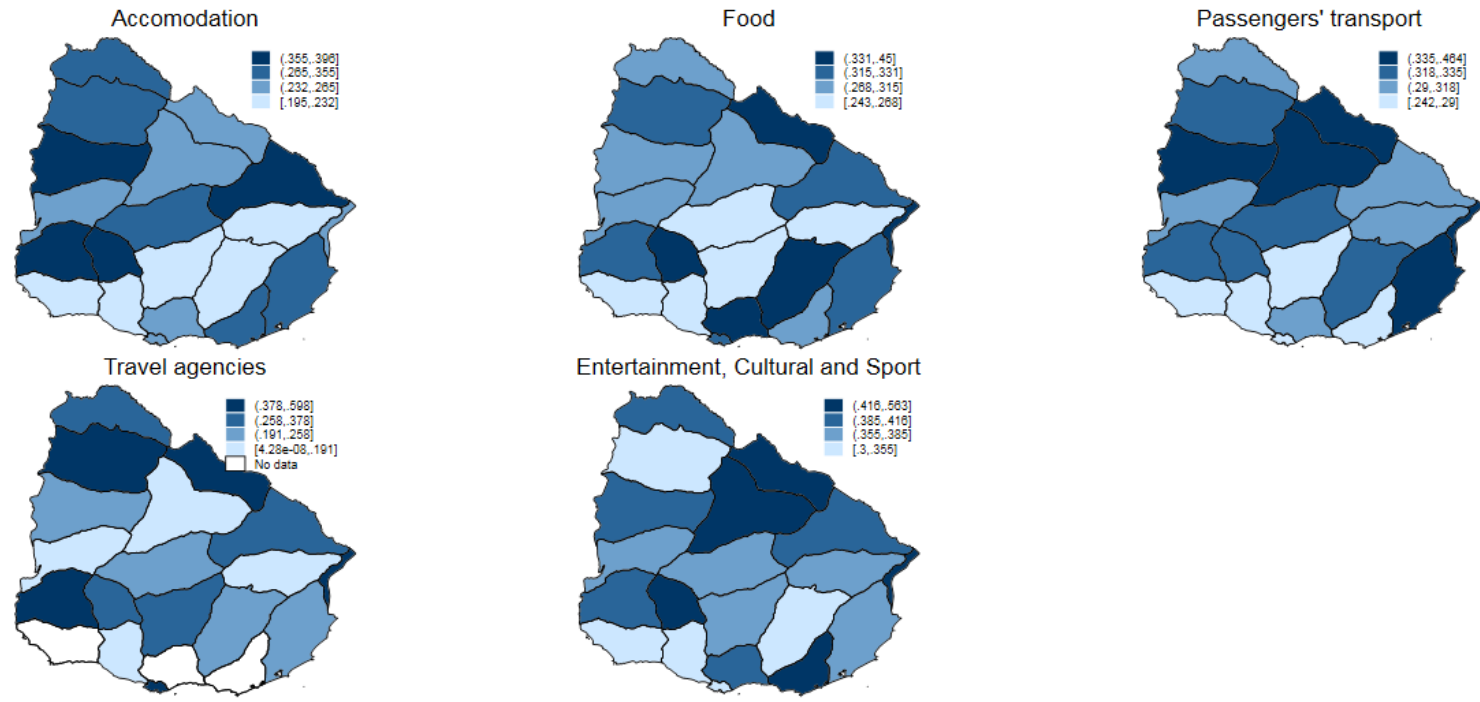
Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2012-2016.

Note: Missing values are due to lack of observations.



Figure 5. Gini Index for the distribution of Hourly wages in Tourism, by state and subsector of activity. Average for years 2012 to 2016.

## Inequality in Hourly wages By Tourism subsector



Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2011-2012.

## **Concluding remarks, policy implications and further research needs**

In this paper, the structure of employment in tourism sectors and the spatial and sectorial distribution of hourly wages was examined, using Uruguay data. This was done for 5 supply-side economic activities that were sensitive to tourism employment. The country level data set was aggregated up into five sub-state regions for the purposes of summarizing spatial elements representing tourism labour markets. For these regions, Gini coefficients were calculated and interpreted for conclusions focused on the distribution of hourly wages by sector.

Results suggest that the tourism sector is comprised of several sectors that are, more or less, dependent on travellers for a portion of their total receipts. These sectors in Uruguay contributes to 7.3% of national employment. Occupational structure of tourism employment, Food Preparation and Entertainment, Cultural and Sport services, accounted for roughly 60% of the jobs in the five economic activities used to define tourism sector. Also, workers from Food and Passengers' Transport services have, on average, less years of formal education while workers from Travel agencies and complementary services have higher levels of schooling. Transport services is also the industry where workers spend more hours per week in their jobs and Food services entail the lowest hourly wages within Tourism activities.

We have found that hourly wages are less concentrated in tourism than in other sectors of the economy. This shows that tourism sector has two opposing aspects. On the one hand, it is a sector where there is less income inequality compared to other economic sectors, but, on the other hand, it has lower wages than the rest of the economy. The Gini coefficient results suggested that Entertainment, Cultural and Sport services and travel agencies and complementary touristic support services tended to have generally more unequal distributions of hourly wages, which were characterized by higher average hourly wages.

Spatially, Gini coefficient results also suggest that urban tourism (as Montevideo) tends to be characterized by generally higher levels of income inequality when compared to rural tourism (as Southern interior). If we focus in tourism economic activities, there are not overall regional patterns, although some features can be identified at state level.

Occupational structure and the distribution of income provide ample opportunities for further discussion. In line with other studies, the tourism sectors are an important generator of employment, but generally considered a 'low wage industry' (Marcouiller & Xia, 2008; Espinola, 2016, Espinola, & Porto, 2019). So, tourism is more likely to help in improving living standards for those who find themselves with limited skill sets or seeking work for quality-of-life and other non-monetary reasons. Further work is needed to confirm the hypothesis of tourism's distributional 'hollowing-out' effect.

Although the research has been mainly descriptive and cannot be generalized, it provides the basis for an interesting agenda for future research. An immediate step to these findings is to statistically explore whether there is a spatial association in the distribution of hourly wages, through commonly used tools such as Moran or Geary Indexes. Also, it would be interesting to examine whether regional disparities are also related to other characteristic (such as socioeconomic characteristics of workers or labor conditions) through an econometric analysis. We also expect to replicate the analysis using alternative definitions of Tourism activities, as a way of testing the

robustness of the findings. At a later stage of the research, we also expect to carry out a comparative analysis with other Latin-American countries. The case of Argentina has been appraised by Espinola (2016) and Porto & Espinola (2016), and we expect to incorporate additional countries such as Chile and Brazil.

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## Annex

Table A.1. Main labor and socio-economic characteristics, by employment sector. Average for years 2006 to 2011.

	Employment				Mean diff. (T-NT)
	Tourism	Non Tourism	Rest of Economy	Total	
<b>Age</b>	40,38	41,07	41,09	40,92	-0,69**
<b>Years of education</b>	9,89	10,33	8,82	9,61	-0,45**
<b>Maximum educational level (%)</b>					
Until primary complete	19,08	22,19	37,01	28,51	-3,1**
Secondary uncompleted	50,90	41,53	40,53	42,05	9,37**
Secondary complete	13,40	11,57	8,52	10,37	1,83**
Superior uncompleted	12,33	12,04	7,19	9,86	0,29
Superior complete	4,27	12,64	6,71	9,18	-8,37**
<b>Informality (%)</b>	27,84	28,27	34,67	31,64	-0,43**
<b>Monthly labor income <sup>(1)</sup></b>	13311,01	12651,93	13023,79	12567,57	659,07**
<b>Weekly hours of work</b>	43,29	39,69	42,90	41,45	3,61**
<b>Hourly wage <sup>(1)</sup></b>	77,80	79,73	74,03	75,08	-1,92
<b>Part time employment (%)</b>	13,24	15,71	11,27	13,64	-2,48**
<b>Size of firm (%)</b>					
< 10 employees	48,24	52,58	63,19	57,48	-4,34**
Between 10 and 50 employees	16,82	9,62	12,81	12,00	7,2**
> 50 employees	34,93	37,80	24,00	30,53	-2,87**
<b>Occupational qualification (%)</b>					
Professional	12,85	22,99	8,20	15,70	-10,14**
Technician	10,45	7,97	3,90	6,37	2,48**
Operator	65,57	45,20	65,01	55,03	20,38**
Unskilled	11,13	23,84	22,88	22,90	-12,71**
<b>Share of women (%)</b>	35,71	55,93	26,56	42,10	
<b>Number of obs.</b>	21232	148470	130887	300589	
<b>Share of employed (%)</b>	7,40	51,83	40,78	100,00	

<sup>(1)</sup> Monthly income and hourly wages from mean activity at prices of 2010.

\* significant at 5%; \*\* significant at 1%.

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2011.

**Table A.2. Main labor and socio-economic characteristics, by Tourism subsector. Average for years 2006 to 2011.**

	Tourism sensitive sectors				
	Accommodation services	Food	Passengers' transport services	Travel agencies and complementary touristic support services	Entertainment, Cultural and Sport services
<b>Age</b>	39,52	38,38	44,15	37,68	39,24
<b>Years of education</b>	9,76	9,11	9,81	12,43	10,63
<b>Maximum educational level (%)</b>					
Until primary complete	21,17	24,48	17,19	3,50	15,79
Secondary uncompleted	50,92	55,38	54,60	28,52	44,26
Secondary complete	12,85	10,53	15,37	25,29	13,80
Superior uncompleted	10,63	8,09	9,91	34,37	18,05
Superior complete	4,41	1,51	2,92	8,31	8,09
<b>Informality (%)</b>	13,02	42,74	8,39	11,70	37,00
<b>Monthly labor income <sup>(1)</sup></b>	12093,01	10161,69	17623,09	18673,15	12397,63
<b>Weekly hours of work</b>	44,77	43,18	51,18	42,04	35,43
<b>Hourly wage <sup>(1)</sup></b>	67,12	56,05	86,99	116,18	91,96
<b>Part time employment (%)</b>	6,04	14,05	4,15	9,37	23,65
<b>Size of firm (%)</b>					
< 10 employees	32,60	67,43	36,69	39,64	45,14
Between 10 and 50 employees	27,68	20,28	10,34	22,54	15,78
> 50 employees	39,73	12,28	52,97	37,82	39,08
<b>Occupational qualification (%)</b>					
Professional	8,94	15,06	3,73	13,87	20,53
Technician	2,27	0,79	3,14	22,35	29,12
Operator	52,66	77,26	89,77	58,33	34,76
Unskilled	36,14	6,89	3,36	5,45	15,59
<b>Share of women (%)</b>	56,08	51,33	13,27	49,29	34,10
<b>Number of obs.</b>	2071	6455	5940	429	6337
<b>Share of employed (%)</b>	9,20	30,45	28,64	2,01	29,71

<sup>(1)</sup> Monthly income and hourly wages from mean activity at prices of 2010.

\* significant at 5%; \*\* significant at 1%.

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2011.

**Figure A.1. Lorenz curve for Hourly wages, by sector. Average for years 2006 to 2011.**

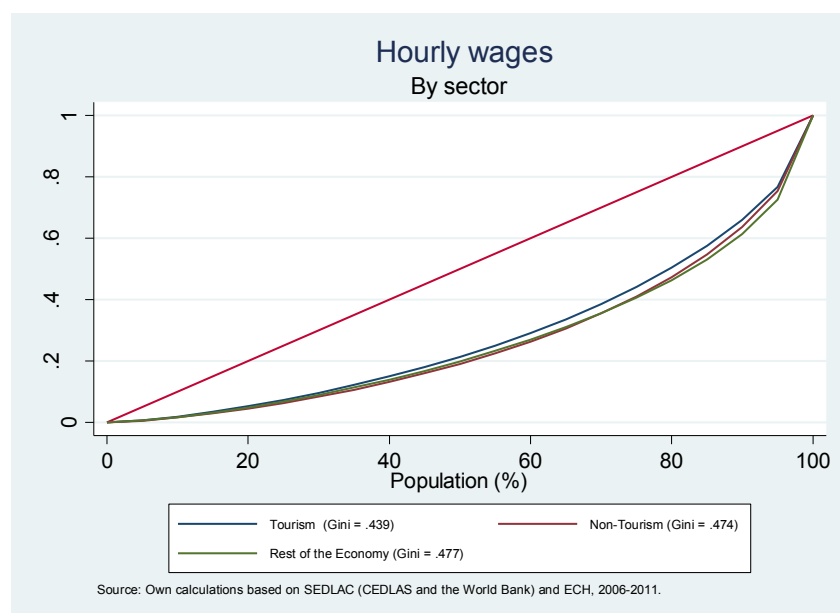
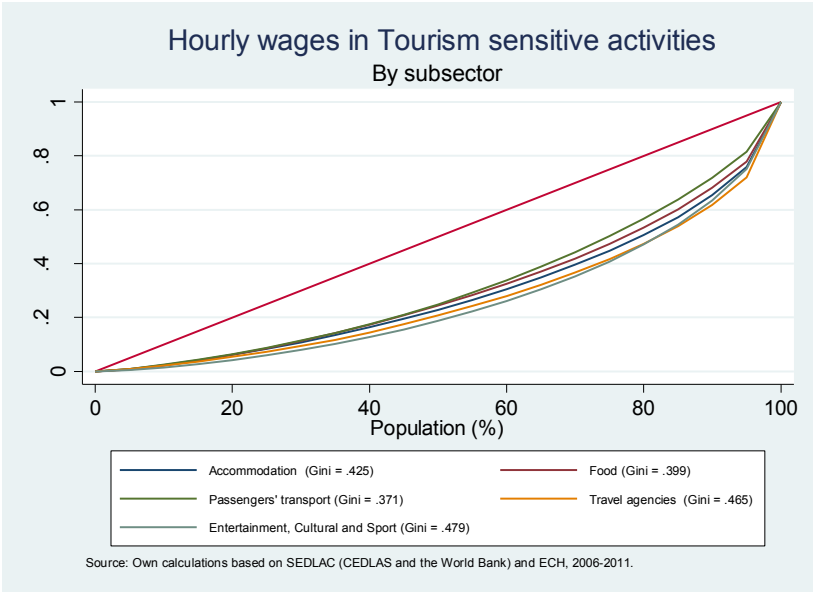
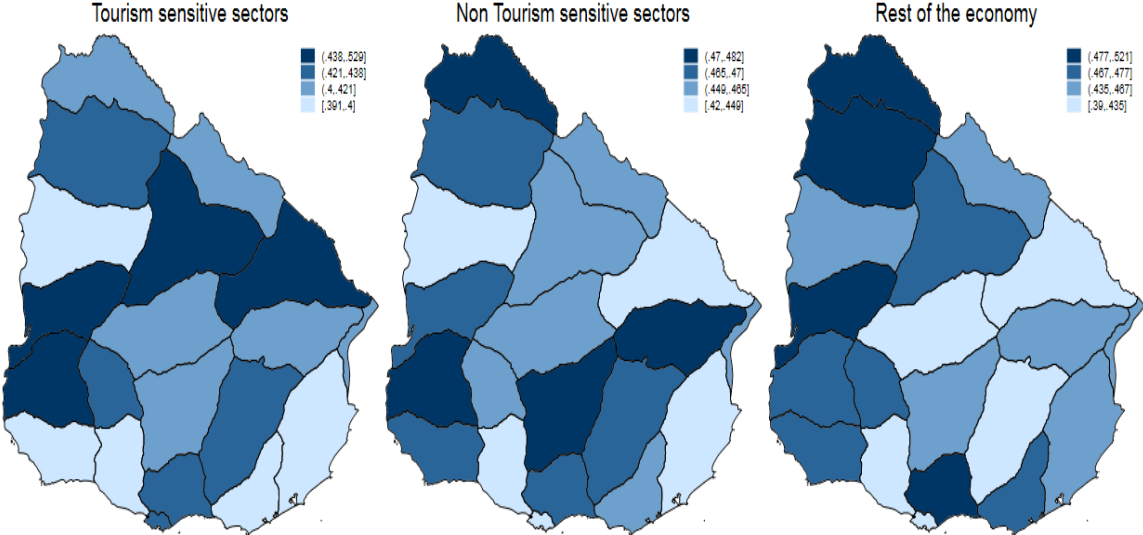


Figure A.2. Lorenz curve for Hourly wages in Tourism, by subsector. Average for years 2006 to 2011.



**Figure A.3. Gini Index for the distribution of Hourly wages, by state and sector of activity. Average for years 2006 to 2011.**

### Inequality in Hourly wages By sector



Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2011.



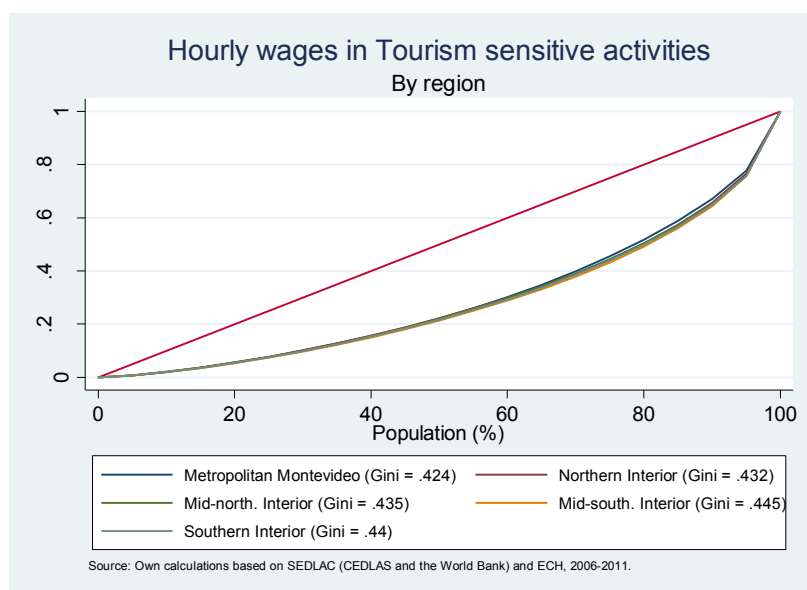
**Table A3. Gini Index for the distribution of Hourly wages, by state and sector of activity. Average for years 2006 to 2011.**

Region/State	Employment			Total
	Tourism	Non Tourism	Rest of Economy	
<b>Metropolitan Montevideo</b>	<b>0,424</b>	<b>0,474</b>	<b>0,489</b>	<b>0,478</b>
Montevideo	0,421	0,474	0,498	0,481
<b>Northern Interior</b>	<b>0,432</b>	<b>0,471</b>	<b>0,509</b>	<b>0,490</b>
Artigas	0,431	0,468	0,509	0,486
Rivera	0,415	0,452	0,467	0,462
Salto	0,438	0,467	0,521	0,495
<b>Mid-northern Interior</b>	<b>0,435</b>	<b>0,455</b>	<b>0,464</b>	<b>0,461</b>
Cerro Largo	0,398	0,470	0,473	0,473
Durazno	0,431	0,456	0,475	0,464
Paysandú	0,391	0,445	0,462	0,455
Río Negro	0,456	0,469	0,492	0,477
Tacuarembó	0,501	0,465	0,477	0,477
Treinta y Tres	0,417	0,473	0,461	0,469
<b>Mid-southern Interior</b>	<b>0,445</b>	<b>0,463</b>	<b>0,457</b>	<b>0,460</b>
Flores	0,417	0,480	0,448	0,467
Florida	0,432	0,468	0,433	0,450
Lavalleja	0,400	0,457	0,477	0,466
Rocha	0,395	0,429	0,442	0,434
Soriano	0,529	0,482	0,471	0,480
<b>Southern Interior</b>	<b>0,440</b>	<b>0,437</b>	<b>0,412</b>	<b>0,429</b>
Canelones	0,446	0,449	0,421	0,442
Colonia	0,419	0,461	0,435	0,446
Maldonado	0,436	0,420	0,390	0,414
San José	0,396	0,432	0,397	0,415
<b>All states</b>	<b>0,439</b>	<b>0,474</b>	<b>0,477</b>	<b>0,476</b>

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2012.

Note: Missing values are due to lack of observations.

**Figure A.4. Lorenz curve for Hourly wages in Tourism industries, by region. Average for years 2006 to 2011.**



**Table A4. Gini Index for the distribution of Hourly wages in Tourism, by state and subsector. Average for years 2006 to 2011.**

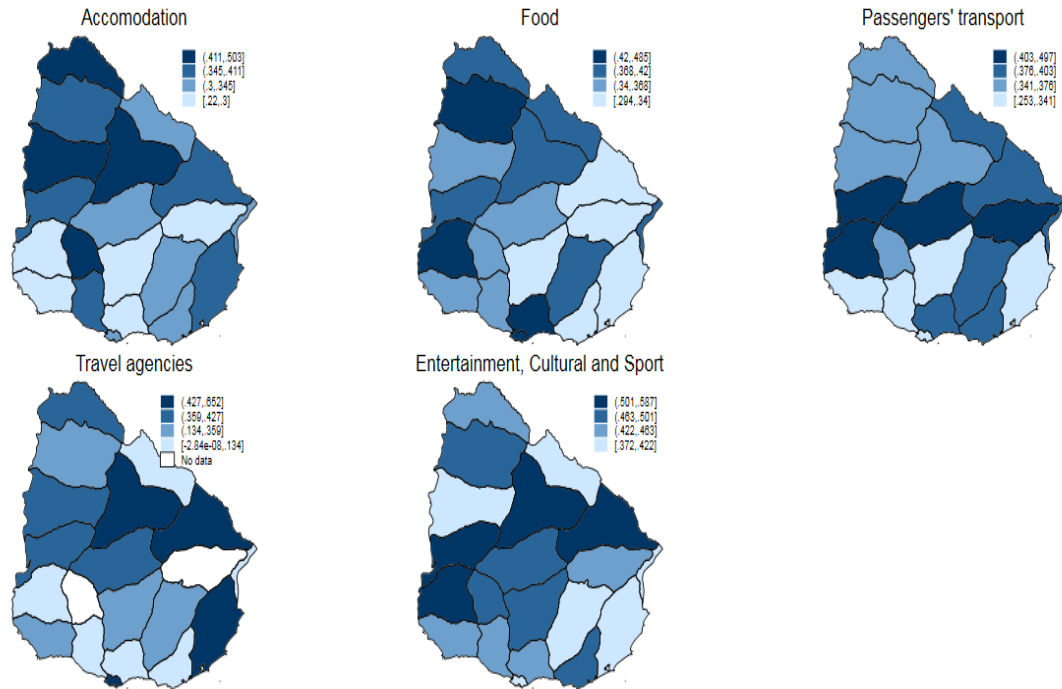
Region/State	Tourism sensitive sectors					All tourism sensitive sectors
	Accommodation services	Food	Passengers' transport services	Travel agencies and complementary touristic support services	Entertainment, Cultural and Sport services	
<b>Metropolitan Montevideo</b>	<b>0,457</b>	<b>0,372</b>	<b>0,356</b>	<b>0,412</b>	<b>0,468</b>	<b>0,424</b>
Montevideo	0,468	0,376	0,349	0,414	0,463	0,421
<b>Northern Interior</b>	<b>0,365</b>	<b>0,432</b>	<b>0,391</b>	<b>0,304</b>	<b>0,461</b>	<b>0,432</b>
Artigas	0,261	0,426	0,380	0,000	0,456	0,431
Rivera	0,338	0,420	0,403	0,000	0,404	0,415
Salto	0,382	0,450	0,371	0,265	0,467	0,438
<b>Mid-northern Interior</b>	<b>0,474</b>	<b>0,365</b>	<b>0,390</b>	<b>0,545</b>	<b>0,471</b>	<b>0,435</b>
Cerro Largo	0,220	0,365	0,341	0,359	0,424	0,398
Durazno	0,449	0,360	0,354		0,501	0,431
Paysandú	0,496	0,368	0,372	0,366	0,372	0,391
Río Negro	0,395	0,380	0,413	0,427	0,525	0,456
Tacuarembó	0,503	0,381	0,376	0,652	0,565	0,501
Treinta y Tres	0,300	0,294	0,484		0,438	0,417
<b>Mid-southern Interior</b>	<b>0,362</b>	<b>0,371</b>	<b>0,431</b>	<b>0,572</b>	<b>0,499</b>	<b>0,445</b>
Flores	0,267	0,304	0,253	0,230	0,498	0,417
Florida	0,321	0,369	0,388	0,275	0,406	0,432
Lavalleja	0,344	0,325	0,403	0,060	0,471	0,400
Rocha	0,369	0,337	0,317	0,554	0,422	0,395
Soriano	0,273	0,428	0,497	0,000	0,587	0,529
<b>Southern Interior</b>	<b>0,373</b>	<b>0,450</b>	<b>0,368</b>	<b>0,635</b>	<b>0,464</b>	<b>0,440</b>
Canelones	0,410	0,340	0,387	0,491	0,504	0,446
Colonia	0,345	0,353	0,426	0,367	0,474	0,419
Maldonado	0,344	0,485	0,299	0,583	0,421	0,436
San José	0,411	0,347	0,321	0,134	0,425	0,396
<b>All states</b>	<b>0,425</b>	<b>0,399</b>	<b>0,371</b>	<b>0,465</b>	<b>0,479</b>	<b>0,439</b>

Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2011.

Note: Missing values are due to lack of observations.

Figure A.5. Gini Index for the distribution of Hourly wages in Tourism, by state and subsector of activity. Average for years 2006 to 2011.

## Inequality in Hourly wages By Tourism subsector



Source: Own calculations based on SEDLAC (CEDLAS and the World Bank) and ECH, 2006-2011.