

NEREUS

Núcleo de Economia Regional e Urbana
da Universidade de São Paulo

The University of São Paulo
Regional and Urban Economics Lab

Urban Travelers Go to the Beach: Regional Effects of Domestic Tourism in Colombia

*"International Workshop on Interregional Economic
Modeling: Applications for the Colombian Economy"*

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Research team

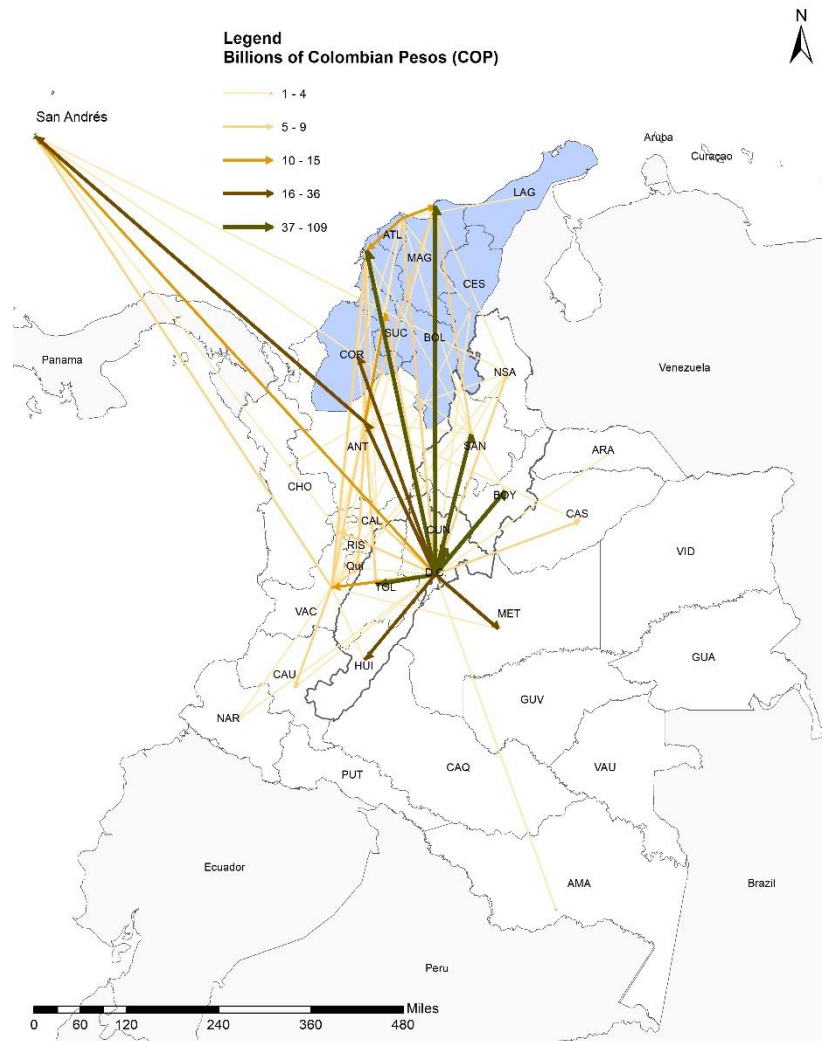
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Introduction

Two important issues:

1. Main domestic tourist flows in Colombia is represented by a core-periphery pattern: richer regions → poorer regions (Caribbean Coast)
2. Tourism activity and regional policy: is the **orange economy** (cultural and creative industries, including tourism) a local development engine?

The geography of domestic tourist expenditures

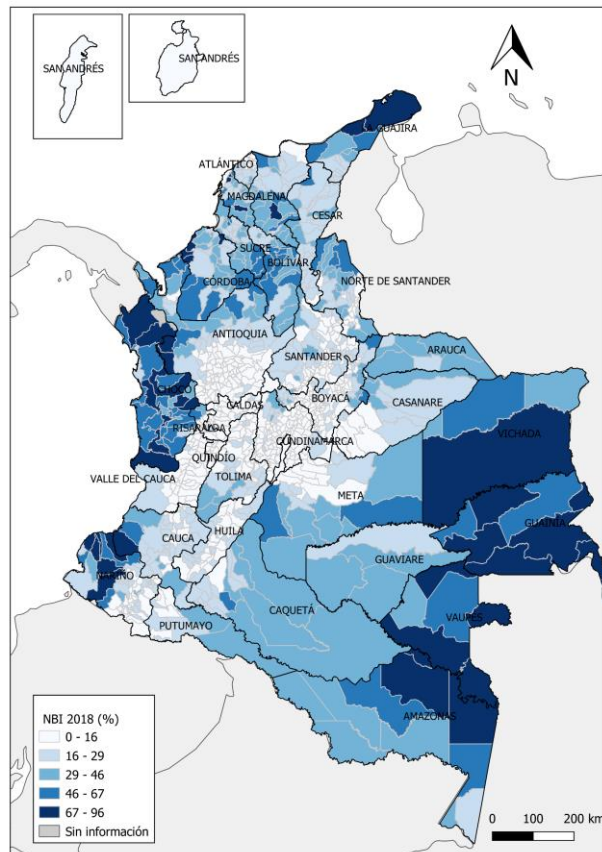


Expenditures from Bogotá
(57,8% of total)

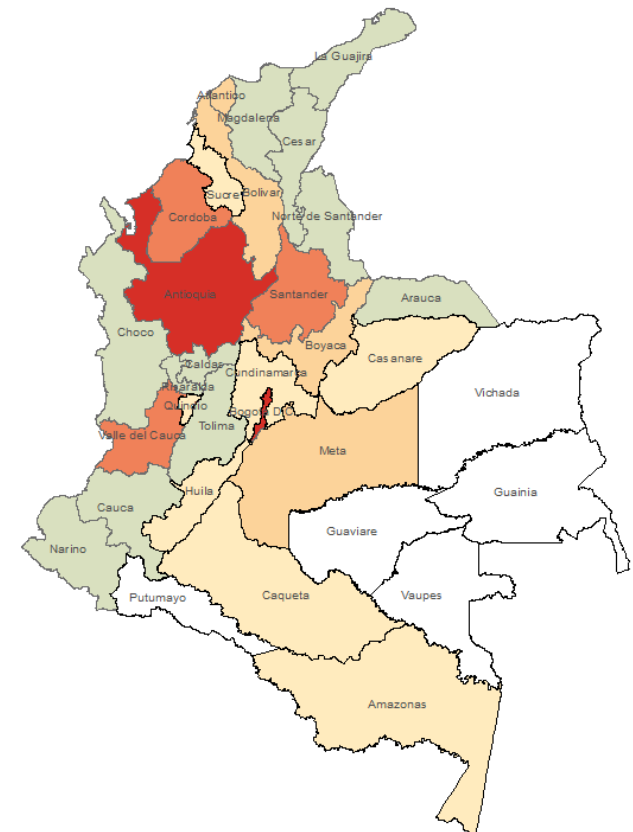
Main destination (travelers
and and expenditures):
Colombian Caribbean

Regional inequality in Colombia

Basic Needs Index (BNI), 2018



Gross Output, 2015



Related literature

There is little empirical evidence on the systemic regional impacts of tourism in Colombia, with the majority adopting qualitative methods (Brida, Riaño & Aguirre, 2011; Hernandez-Garcia, 2013; Bellón & González, 2014)

It is expected that the injection of resources through tourists' expenditures contributes to systemic effects in the destination regions (Haddad, Porsse & Rabahy, 2013)

The aim of this paper is to **analyze the regional impacts of the consumption patterns of expenditures by Colombian tourists**, focusing on the Caribbean region, using an interregional input-output model

Main contributions

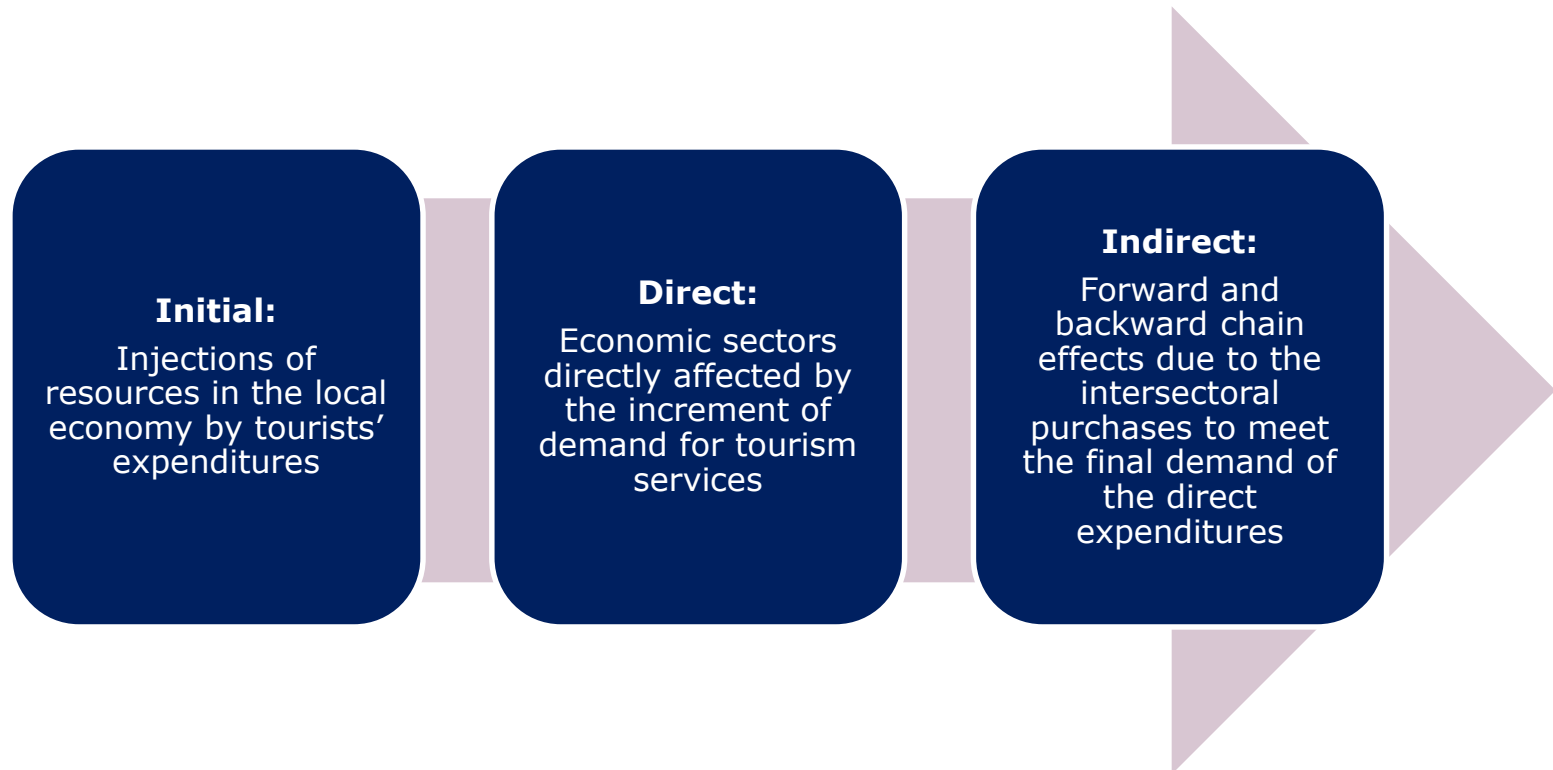
To generate evidence on the magnitude of the multiplier effects associated with expenditures by urban travelers on the Caribbean Coast (second main destination of urban travelers)

To capture the contribution of domestic tourism to inclusive economic growth in Colombia, especially by recognizing the potential for generating jobs and income, both direct and indirectly

To provide insights for the formulation of tourism-related policies based on their expected outcomes and the hierarchy of their potential economic effects

Effects of tourism on regional economies

The magnitude of local multiplier depends heavily on the existing structure of the economy



Methodology

Interregional input-output accounting-based approach incorporating data from a comprehensive national survey on domestic tourism in Colombia

- ✓ *Encuesta de Gasto en Turismo Interno* (EGIT) 2014-2015, elaborated by the Colombian Ministry of Commerce, Industry and Tourism and the National Administrative Department of Statistics (DANE)

Look at different alternatives of financing tourist expenditures and their implications for the net multipliers in an integrated framework

Interregional input-output analysis

$$x = (I - A)^{-1}f = Bf$$

$$x = \begin{bmatrix} x^1 \\ \vdots \\ x^R \end{bmatrix}; A = \begin{bmatrix} A^{11} & \dots & A^{1R} \\ \vdots & \ddots & \vdots \\ A^{R1} & \dots & A^{RR} \end{bmatrix}; f = \begin{bmatrix} f^1 \\ \vdots \\ f^R \end{bmatrix}; \text{ and } B = \begin{bmatrix} B^{11} & \dots & B^{1R} \\ \vdots & \ddots & \vdots \\ B^{R1} & \dots & B^{RR} \end{bmatrix}$$

$$\begin{aligned} x^1 &= B^{11}f^1 + \dots + B^{1R}f^R \\ &\vdots \\ x^R &= B^{R1}f^1 + \dots + B^{RR}f^R \end{aligned}$$

$$v = \underbrace{\begin{bmatrix} v^{11} & \dots & v^{1R} \\ \vdots & \ddots & \vdots \\ v^{R1} & \dots & v^{RR} \end{bmatrix}}; c = \begin{bmatrix} c^1 \\ \vdots \\ c^R \end{bmatrix}; e = \begin{bmatrix} e^1 \\ \vdots \\ e^R \end{bmatrix}$$

household expenditures
with domestic tourism

Other household
expenditures

Other final demand
expenditures

Interregional input-output analysis

$$\begin{aligned}x^1 &= B^{11}(v^{11} + \dots + v^{R1} + c^1 + e^1) + \dots + B^{1R}(v^{1R} + \dots + v^{RR} + c^R + e^R) \\&\vdots \\x^R &= B^{R1}(v^{11} + \dots + v^{R1} + c^1 + e^1) + \dots + B^{RR}(v^{1R} + \dots + v^{RR} + c^R + e^R)\end{aligned}$$

We obtain information of domestic tourist expenditures from the domestic tourism module, allowing us to treat \mathbf{v} as a matrix which provides the monetary values of expenditures of tourists coming to domestic region r from domestic region s

We can then compute the contribution of expenditures with domestic tourism on regional output

We will concentrate our analysis on the **contribution of \mathbf{v} to \mathbf{x}**

Financing schemes

Given regional household budget constraints, resources allocated to tourism activities crowd out other types of consumption (present or future)

(i) **reductions in personal savings**, considering only the systemic effects of v , which gives the upper bound for the multiplier effects of expenditures in the short run in this modeling context

(ii) **simultaneous monetary-equivalent reductions in consumption in the respective origin regions**, representing an induced substitution effect in the consumption basket of travelers according to household consumption patterns provided in \mathbf{c}

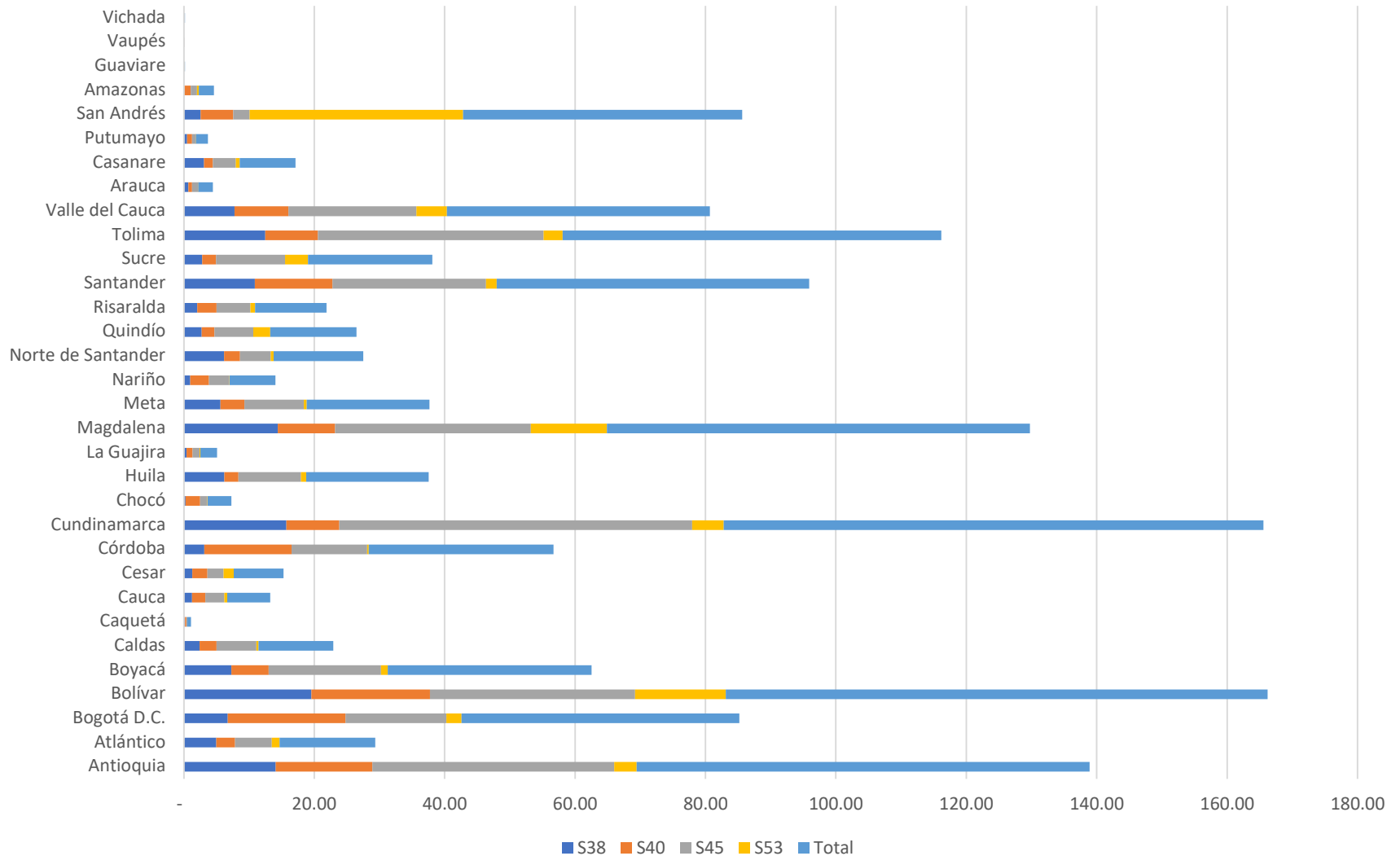
The survey – *EGIT*

The sample is around 39,825 households interviewed (135,857 people interviewed)

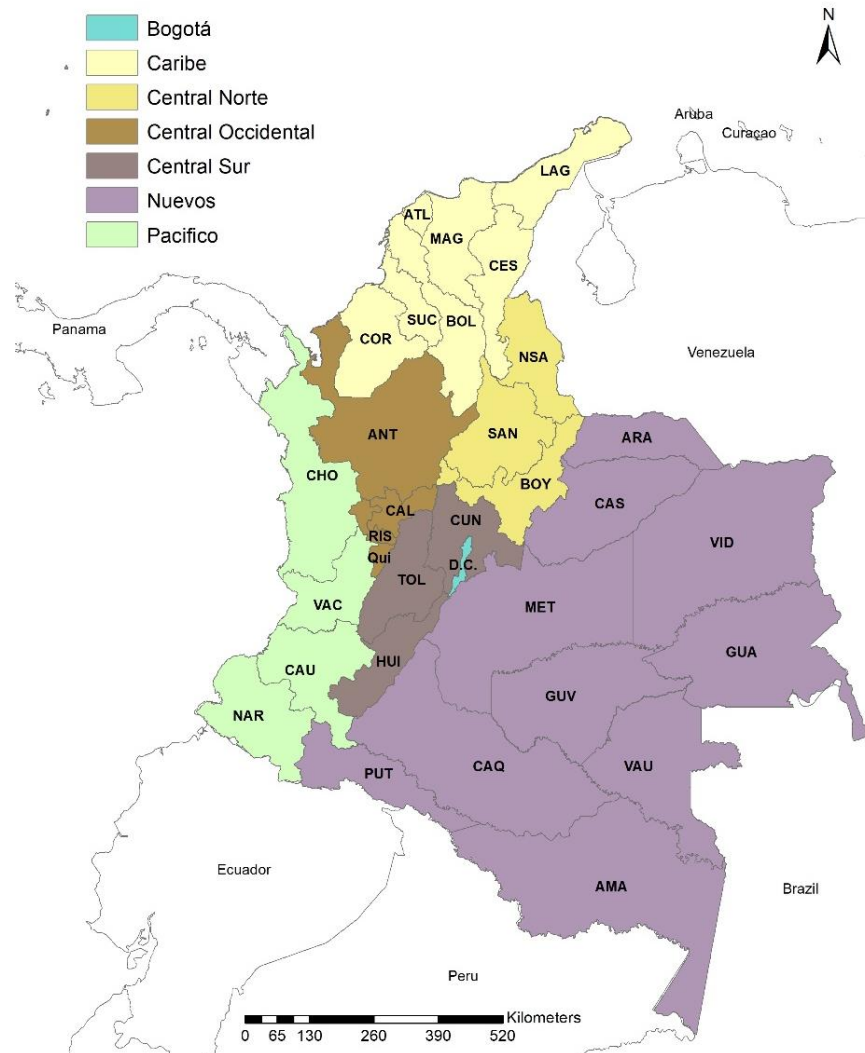
Data on expenditures include 13 departments of origin (Antioquia, Atlántico, Bogotá, D.C, Bolívar, Caldas, Córdoba, Meta, Nariño, Norte de Santander, Risaralda, Santander, Tolima and Valle del Cauca) and 33 destinations

Industry Code	Industry description	Expenditure according to EGIT classification
S38	Wholesale and commission or contract trade; retail trade (including retail fuel trade); trade-in motor vehicles and motorcycles, their parts, parts and accessories	Bienes de uso personal Otros gastos relacionados con el viaje
S40	Ground transportation and pipeline transportation	Transporte Terrestre (Hacia y desde el destino) Transporte público en el lugar visitado
S45	Accommodation and food services	Alimentos y bebidas Alojamiento
S53	Artistic, entertainment and recreation activities and other service activities	Servicios culturales y recreacionales Paquete turistico

Composition of expenditures by destination




Regional aggregation



The **v** matrix

Domestic Tourists Expenditures in Colombia, by Origin-Destination Flows (in COP billions)

		Destination							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Origin	Pacifico	25.59	10.99	8.50	11.13	4.43	2.00	8.23	70.86
	Caribe	1.39	39.21	6.37	6.03	2.07	0.52	0.96	56.54
	Bogotá	16.92	 128.48	0.13	31.19	62.51	147.50	37.36	424.08
	Central Occidental	11.99	27.71	14.85	50.81	4.06	4.89	22.14	136.45
	Central Norte	0.75	11.56	7.71	3.25	18.02	0.39	4.26	45.93
	Central Sur	0.66	0.99	2.42	1.88	1.12	2.73	1.53	11.32
	Nuevos	0.35	1.31	2.61	0.80	0.76	1.11	2.86	9.81
Total		57.64	220.24	42.59	105.08	92.96	159.14	77.33	754.99

Strategy (Haddad et al., 2013)

We used equation (1) to evaluate the role played by each origin-destination tourist flow in generating the model's results

$$\begin{aligned} x^1 &= B^{11}(v^{11} + \dots + v^{R1} + c^1 + e^1) + \dots + B^{1R}(v^{1R} + \dots + v^{RR} + c^R + e^R) \\ &\vdots \\ x^R &= B^{R1}(v^{11} + \dots + v^{R1} + c^1 + e^1) + \dots + B^{RR}(v^{1R} + \dots + v^{RR} + c^R + e^R) \end{aligned} \quad (1)$$

For each regional interaction, we calculated its contribution to the total outcome in terms of national and regional gross output

We first examined the national effects. We then looked at the effects on regional inequality, through the differential impacts on gross regional output for the seven Colombian macro regions (Pacífico, Caribe, Bogotá, Central Occidental, Central Norte, Central Sur, and Nuevos)

National results: “a zero-sum game”

(1) Impacts of tourism expenditures considering the typical input-output total effects based on the information of matrix \mathbf{v} and the Leontief inverse

(-)

(2) Total impacts of the hypothetical foregone home consumption

(=)

(3) Net multiplier effects, which include short-run resources constraints in the system

National results (1)

Gross Total Effects of Tourist Expenditures on National Output, by Origin-Destination Flows (in COP billions)

		Destination							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Origin	Pacifico	43.23	17.79	14.39	18.62	7.26	3.38	13.10	117.78
	Caribe	2.37	66.15	10.76	10.20	3.47	0.88	1.53	95.36
	Bogotá	28.70	215.35	0.22	53.18	105.60	250.62	60.79	714.47
	Central Occidental	20.40	46.42	25.13	85.84	6.86	8.02	35.12	227.78
	Central Norte	1.26	19.38	12.93	5.45	30.21	0.66	6.73	76.61
	Central Sur	1.10	1.65	4.07	3.17	1.84	4.59	2.49	18.92
	Nuevos	0.60	2.19	4.34	1.33	1.27	1.86	4.61	16.20
Total		97.66	368.91	71.83	177.79	156.52	270.02	124.38	1,267.11

National results (2)

Total Effects of **Foregone Home Consumption** on National Output, by Origin-Destination Flows (in COP billions)

		Destination							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Origin	Pacifico	-37.48	-16.07	-12.45	-16.30	-6.48	-2.93	-12.05	-103.75
	Caribe	-2.03	-57.24	-9.31	-8.81	-3.01	-0.76	-1.40	-82.55
	Bogotá	-24.74	-187.87	-0.19	-45.60	-91.4	-215.68	-54.63	-620.14
	Central Occidental	-17.54	-40.46	-21.75	-74.26	-5.9	-7.14	-32.3	-199.39
	Central Norte	-1.10	-16.96	-11.34	-4.78	-26.48	-0.57	-6.25	-67.47
	Central Sur	-0.96	-1.46	-3.55	-2.76	-1.64	-4.01	-2.24	-16.6
	Nuevos	-0.51	-1.89	-3.79	-1.16	-1.10	-1.61	-4.14	-14.2
Total		-84.36	-321.95	-62.38	-153.66	-136.05	-232.71	-113.04	-1,104.14

National results (3)

Net Total Effects of Tourist Expenditures on National Output, by Origin-Destination Flows (in COP millions)

		Destination							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Origin	Pacifico	5.75	1.72	1.94	2.32	0.78	0.45	1.05	14.03
	Caribe	0.34	8.91	1.45	1.39	0.46	0.12	0.13	12.81
	Bogotá	3.96	27.48	0.03	7.58	14.18	34.94	6.16	94.33
	Central Occidental	2.86	5.96	3.38	11.58	0.94	0.88	2.80	28.39
	Central Norte	0.16	2.42	1.59	0.67	3.73	0.09	0.48	9.14
	Central Sur	0.14	0.19	0.52	0.41	0.20	0.58	0.25	2.30
	Nuevos	0.09	0.30	0.55	0.17	0.17	0.25	0.47	1.98
Total		13.30	46.96	9.45	24.13	20.47	37.31	11.34	162.97


Regional results (3)

Net Total Effects of Tourist Expenditures on Regional Output of **Bogotá**, by Origin-Destination Flows (in COP millions)

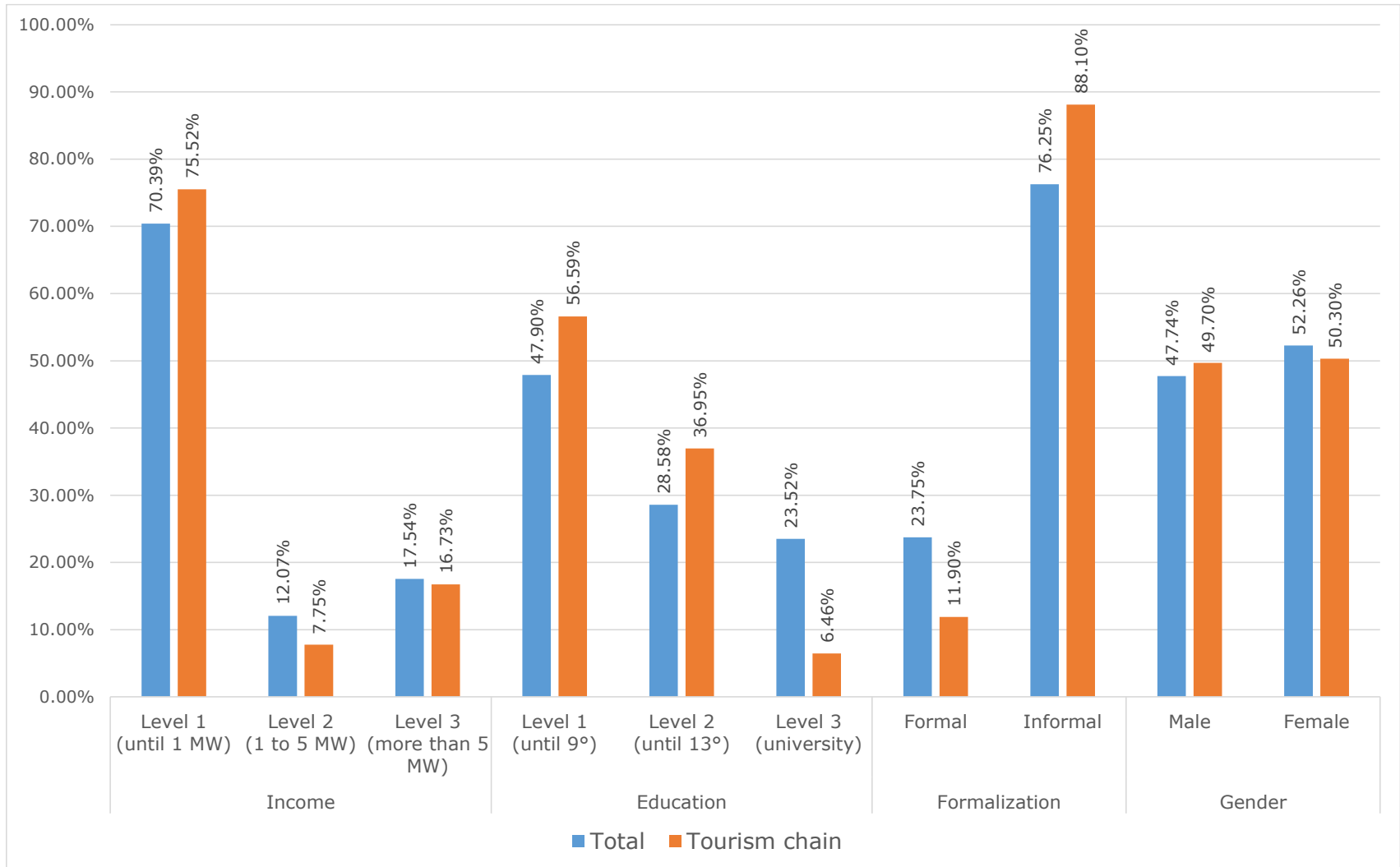
		Origin							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Destination	Pacifico	-1.55	-0.68	10.44	-0.54	-0.10	0.02	0.38	7.95
	Caribe	-0.08	-2.11	7.79	-0.47	-0.05	0.00	-0.03	5.05
	Bogotá	-12.91	-96.65	0.07	-23.57	-44.03	-95.30	-25.97	-298.37
	Central Occidental	-1.08	-1.95	17.74	-4.26	-0.17	-0.13	1.13	11.28
	Central Norte	-0.11	-1.46	8.88	-0.46	-1.96	-0.03	-0.09	4.76
	Central Sur	-0.15	-0.21	2.60	-0.39	-0.18	-0.43	-0.21	1.04
	Nuevos	-0.07	-0.29	2.83	-0.17	-0.13	-0.13	-0.44	1.59
Total		-15.97	-103.35	50.34	-29.87	-46.63	-96.00	-25.23	-266.70

Regional results (3)

Net Total Effects of Tourist Expenditures on Regional Output of the **Caribbean**, by Origin-Destination Flows (in COP billions)

		Origin							Total
		Pacifico	Caribe	Bogotá	Central Occidental	Central Norte	Central Sur	Nuevos	
Destination	Pacifico	-0.63	14.73	-0.15	-0.25	-0.04	-0.04	-0.28	13.34
	Caribe	-1.29	16.31	-5.76	-5.28	-1.89	-0.45	-0.88	0.78
	Bogotá	-0.68	 167.22	-0.01	-1.04	-1.91	-7.69	-1.50	154.38
	Central Occidental	-0.59	35.41	-0.61	-2.30	-0.14	-0.31	-1.68	29.78
	Central Norte	-0.07	14.33	-0.61	-0.24	-1.18	-0.03	-0.43	11.76
	Central Sur	-0.02	1.28	-0.06	-0.05	-0.03	-0.10	-0.04	0.98
	Nuevos	-0.02	1.70	-0.16	-0.04	-0.03	-0.07	-0.15	1.23
Total		-3.29	250.98	-7.36	-9.20	-5.22	-8.70	-4.97	212.25

Employment generation: What kind of jobs?



Summary

Net total effects of domestic tourist expenditures on national output are negligible (zero-sum game).

Local demand by tourists is shown to be capable of generating effects for the regional economy

- Colombian Caribbean as the main gainer

Regional policies to encourage local tourism activities can be seen as a mechanism for development and reduction of regional disparities in Colombia

- Focused on higher quality tourism services may enhance local income generation and improve the quality of jobs in the Caribbean (composition effects)

Next steps (room for collaboration)

Include multipliers with differentiation at the sector level and linkages between (groups of) sectors

- Other sectors with the tourist and vice versa

Differentiate between direct and indirect effects

- In the Caribbean, do these effects differ in the tourism chain?

Include international travelers

- *Encuesta Viajeros Internacionales* (EVI)

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