Assessment of the impact of social phenomena using statistics

Instructions: Click on the link to access each author's presentation.

Chair: Andrés Christen Gracia

Participants:

Franck Migone: Causal Impact of Armed Conflict on Primary Education in Mali

Mario Santillana:* Perception of insecurity in municipalities in Mexico. A Small Area Estimation approach.

Berenice Rodríguez Tovar: The employability of the immigration from South and Central America to Mexico in 2023

Isaac Ajao:* Spatial Analysis of Reading Culture Among Higher Education Students in Southwestern Nigeria

* Work presentation not available or non-existent

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Causal Impact of Armed Conflict on primary education in Mali

Presented by:

FRANCK MIGONE - SADIA EMMANUEL JOSIAS

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PRESENTATION PLAN

I. Introduction

II. Literature Review

III. Methodology

IV. Results and Interpretation

V. Conclusion and Recommendation

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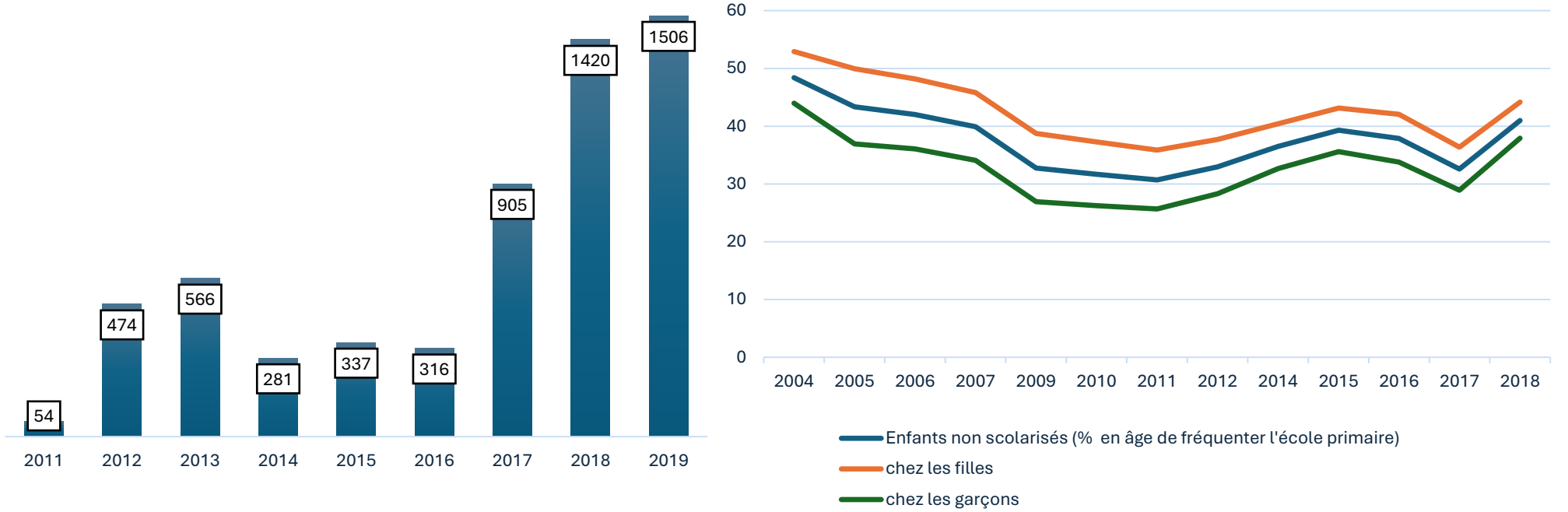
Evolution of violents events and Non schooling students



What is the impact of armed conflict on education?

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- **General objective**
- - Assess the impact of armed conflict on education in Mali
- **Specific objectives**
- 1- Quantify the impact of conflict by gender
- 2- Identify transmission channels
- **Hypothèses**
- 1- The impact is more for girl
- 2-The channel are infrastructure destruction and migration

THEORIQUE REVIEW

EMPIRIQUE REVIEW

Authors Country	Dependant variable	Estimation method	Results	Mécanism
Dabalen & Paul (2012) **Côte d'Ivoire**	**Number of years of schooling**	**Double différence (TWFE) + PSM**	**Réduction de 0,94 du nombre d'années d'éducation et augmentation de la durée de scolarisation.**	Détérioration des conditions de vie des parents.
Duili (2015) **Côte d'Ivoire**	**Years of schooling ; infantil health**	**Double différence**	**Decrease in the probability of children being recruited; deterioration in the health of those exposed**	Destruction of infrastructure; poor working conditions and absenteeism
Dago (2020) **Côte d'Ivoire**	**Allocation of time between school and work**	**Bi-probit**	**Dropping out of school in favor of employment**	Decline in parents' purchasing power
Bertoni et al.2019 **Nigeria**	**Years of schooling and school attainment**	**Double différence**	**3% drop in the probability of enlistmentFewer years of education (more pronounced among Muslims)**	Destruction of infrastructure; Insecurity; Absenteeism

Empirical Review

- Dabalen & Paul (2012; 2014); Ouili (2015): Kinimo (2013),Minoin&Shemyakina,2014; ⟶ Negative impacts of war on education, on health and Poverty in Côte d'Ivoire using DID, PSM.

- Rodriguez et sanchez (2012)

- Arizo et Saldarriaga, 2023

❖Data and variables

Armed conflicts and Location Data (ACLED) and EHCVM (welfare survey 2018)

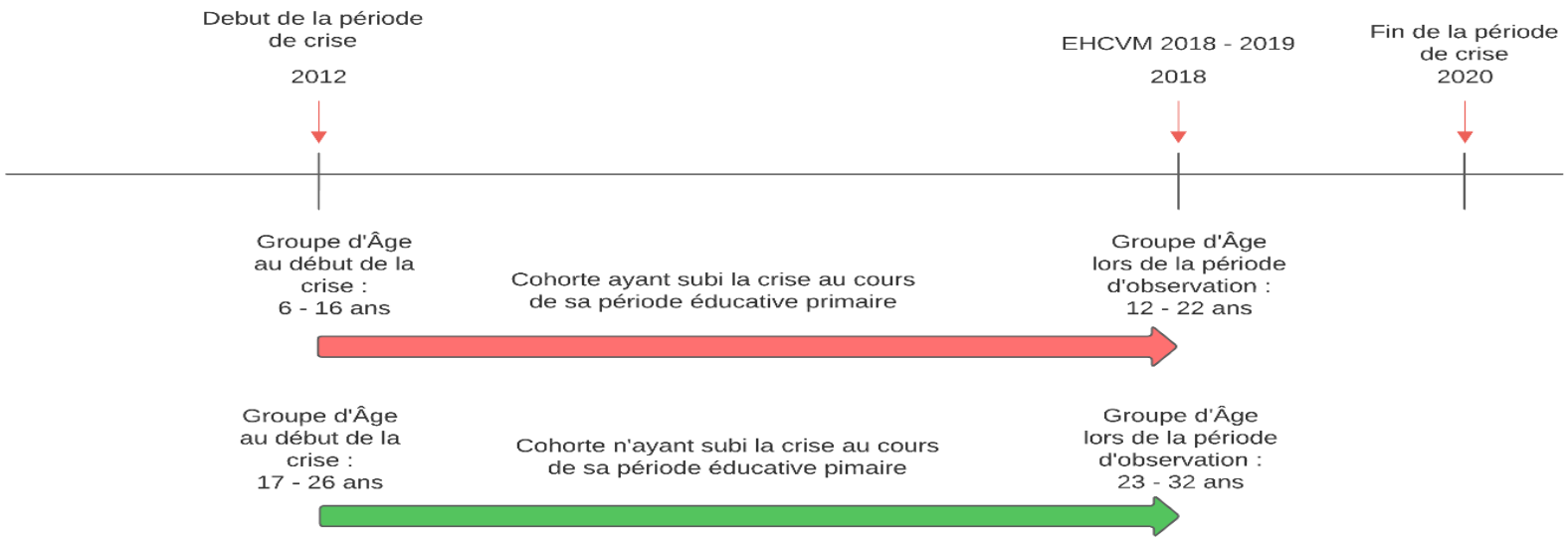
Main variables:

Numbers of violents variables,

Socio-demographics variables (sexe, Age, Residence, living departments, parents business sector)

Education variable: Number of years of education, Parents education

❑Identification Strategy



Using data from the Harmonized Survey of Household Living Conditions (EHCVM)In order to identify potential victims of the Malian crises, we are building a cohort of young men and women who were attending school at the time of the crisis and who have been exposed to the conflict.

Young cohort: 12-22 years old

Old cohorte: 23-32 years old

Estimation Methodology

DID

PSM

Chaisem artin

SENSITIVITY ANALYSIS

- Double-difference Method
- $nb\_etude_{ijk} = Conflit_j * Coh\_Ed\_Prim_i * \beta + Dep_j + Coh\_Nais_k + XH_i + \varepsilon_{ijk}$ (1)
- PSM
- The average treatment effect on the treated (ATT) is defined by: $\tau_{ATT} = \mathrm{E}\,[Y(1)\,|D = 1] - \mathrm{E}\,[Y(0)\,|D = 1]$
- Because $\mathrm{E}\,[Y(0)\,|D = 1]$ can't be dertimined, we use an estimator τ_{ATT}. The PSM for the average treatment effect on treated individuals is defined by :
  - $\tau_{ATT}^{PSM} = \mathrm{E}_{P(X)|D=1}\{\mathrm{E}\,[Y(1)\,|D = 1, P(X)] - \mathrm{E}\,[Y(0)\,|D = 0, P(X)]\}$
- where $P(X)$ represents the distribution of propensity scores.

DID estimation results

Dependant variables (Number of years of education)	Modèle 1 (Cas binaire)		Modèle 2 (Cas continu)	
Conflit X Cohorte	-0,87*** (0,373)	-1,31*** (0,405)	-0.16*** (0,045)	-0.20*** (0,046)
Controls variables				
Department fixed effects	Yes	Yes	Yes	Yes
Age fixed effects	Yes	Yes	Yes	Yes
Socio-démographics variables	No	Yes	No	Yes

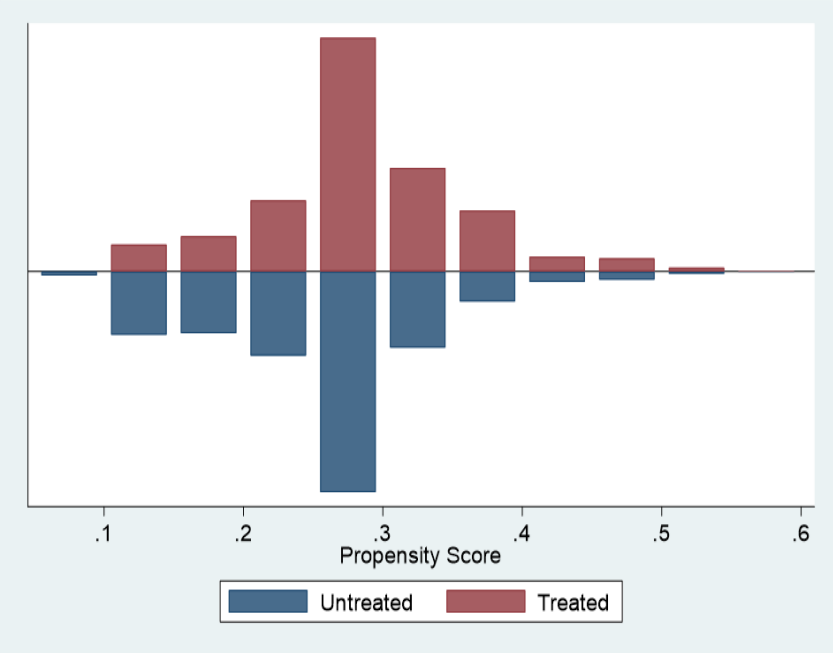
DID estimation results

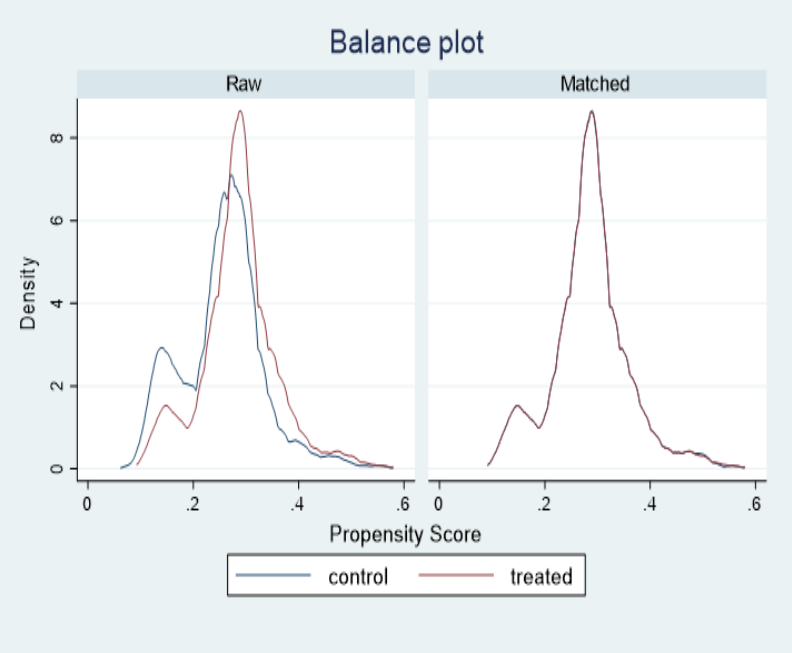
Variable	ATET (Binary case)	ATET (Continuous cas)
Sex (Mal)	-0.95 (0,661)	-0.20*** (0,077)
Sex (Femal)	-0.98*** (0,431)	-0,18*** (0,062)
Milieu (Rural)	-0.002 (0,528)	-0,10 (0,104)
Milieu (Urban)	-1,32*** (0,305)	-0,07 (0,066)

Chaisemartin et d'Hautefoeuille (2020)

Dependant variables (Number of years of education)	Modèle 1 (Binary cas)		Modèle 2 (continuous case)	
Conflit X Cohorte	-0,698*** (0,867)	-1,16*** (1,181)	-0,270*** (0,125)	-0,35*** (0,139)
Control variables				
Department fixed effects	Yes	Yes	Yes	Yes
Age fixed effects	Yes	Yes	Yes	Yes
Socio-demographics variables	No	Yes	No	Yes

PSM Results

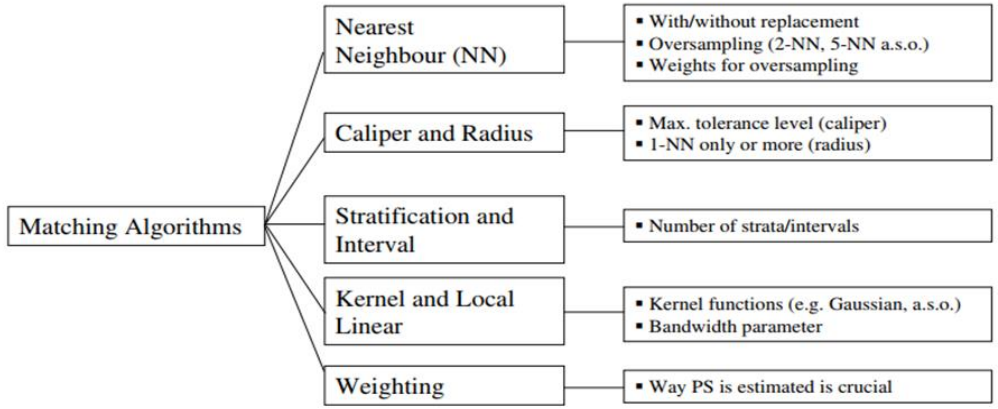




	ATET	ATE
PSM	-1,947*** (0,172)	-1,903*** (0,163)

Sensitivity Analysis

Algorithms	ATET	ATE
IPW	-1,789*** (0,150)	-1,967*** (0,143)
IPWRA	-1.792*** (0,149)	-1,956*** (0,142)
AIPW		-1,957*** (0,142)
Ra	-1.793*** (0,148)	-1,964*** (0,143)
Nnmatch	-1.966*** (0,169)	-1.989*** (0,155)



Gamma	Sig+	Sig-	t-hat +	t-hat -	CI +	CI -
1	0	0	7.5	7.5	7,5	7,5
1.5	0	0	6.5	8	6,5	8,5
2	0	0	6	8,5	6	9

INTERPRETATIONS

(i) The impact of armed conflict ranges from 1.13 to 1.9 years of education.

(ii) Impact more pronounced for girls

(iii) The mechanisms by which armed conflict affects education are diverse and generally of two kinds: the supply of education and the demand for education.

(iv) decline in public spending on education, with long-term repercussions on the quality of educational provision.

RECOMMANDATIONS

(i) financial support programs for the affected populations by granting agricultural subsidies on the one hand, and the assumption o school fees by the authorities on the other, and (ii) special initiative for young girls who are the most affected by the conflict an disadvantaged compared to young boys.

(ii) Access to safe education and school construction

(iii) Teacher training

CONCLUSIONS

Using impact assessment methods such as propensity score matching (PSM), double differences (DD) and the approach of Chaisemartin and Hautefoeuille (2020), the impact of conflict is estimated to range between -1.13 and -1.90.

In other words, the young people in the cohort (12-22) have on average 1.13 or even 1.90 fewer years of education than their peers who have not been exposed to conflict.

In a dynamic approach, we estimate that the occurrence of an additional violent conflict increases the gap between the two cohorts by 0.35 years. Furthermore, the results indicate that girls are more affected than boys (dixit Vidya ;2023).

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children suffer from armed conflicts, let's help them !

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Thank you

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The employability of the immigration from South and Central America to Mexico in 2023

Berenice Rodríguez Tovar
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Content

Overview and key issues

Descriptive analysis

- Sociodemographic.
- Socio-occupational.
- Territorial.

Logistic regression model

- Considerations.
- Variables.
- Results.

Conclusions

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Overview and key issues

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Overview and key issues

Know the factors that impact in the probabilities to be informal in the labor market as an immigrant in Mexico.

New tendencies of the immigration phenomenon.

Use of econometric models to assess the data of social phenomena.

Dimensions of the analysis:

- Sociodemographic.
- Socio-occupational.
- Geographic.

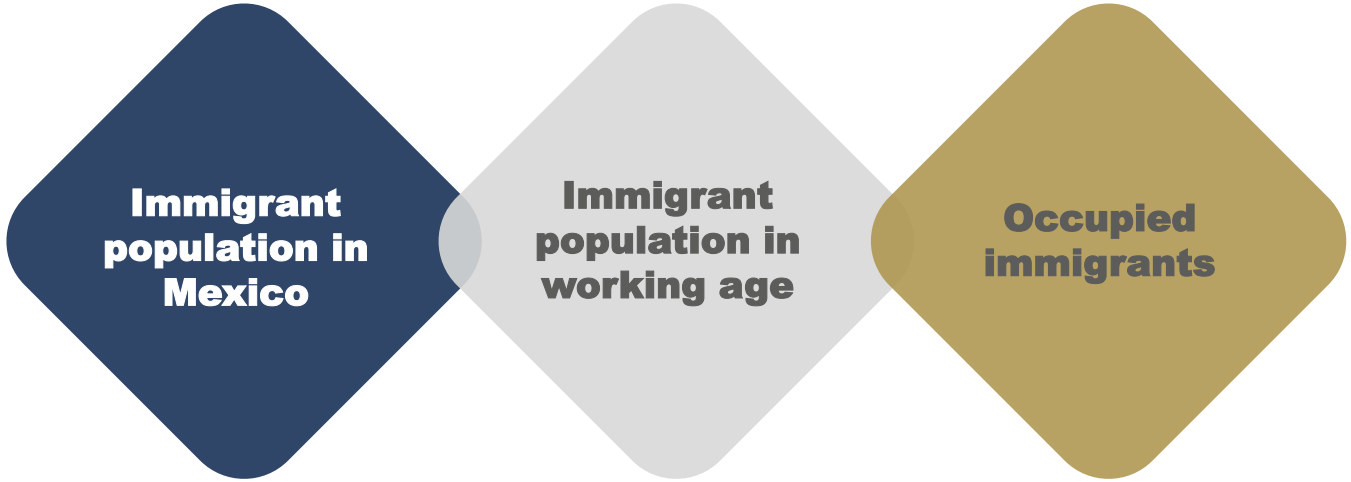
Current tendencies of immigration in Mexico

Mexico is facing unprecedent immigration flows.

Settlement, asylum seekers, work immigrants, temporary migration (in transit).

The geography of Mexico is a key factor for these new tendencies

Dimensions of study



Universe: immigrants from South and Central America living in Mexico	Dimension of study: the immigrant population in working age or active population aged 15 and over	This dimension includes the occupied immigrants by position, economic activity, benefits or working hours

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Sociodemographic analysis

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Sociodemographic analysis

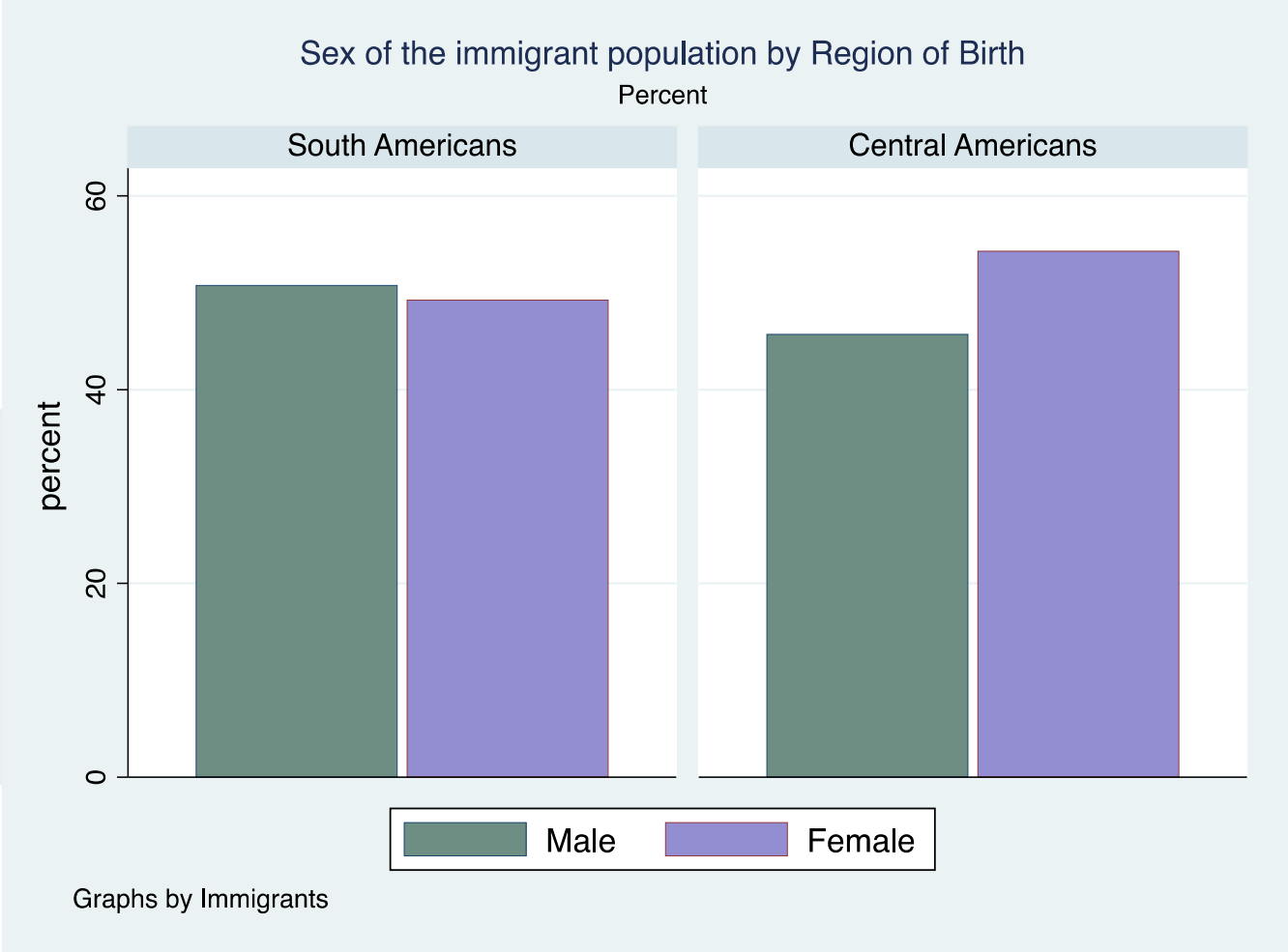
The source of information is the National Survey of Occupation and Employment (**ENOE)** and according to the first quarterly:

156,914 immigrants from South and Central America.

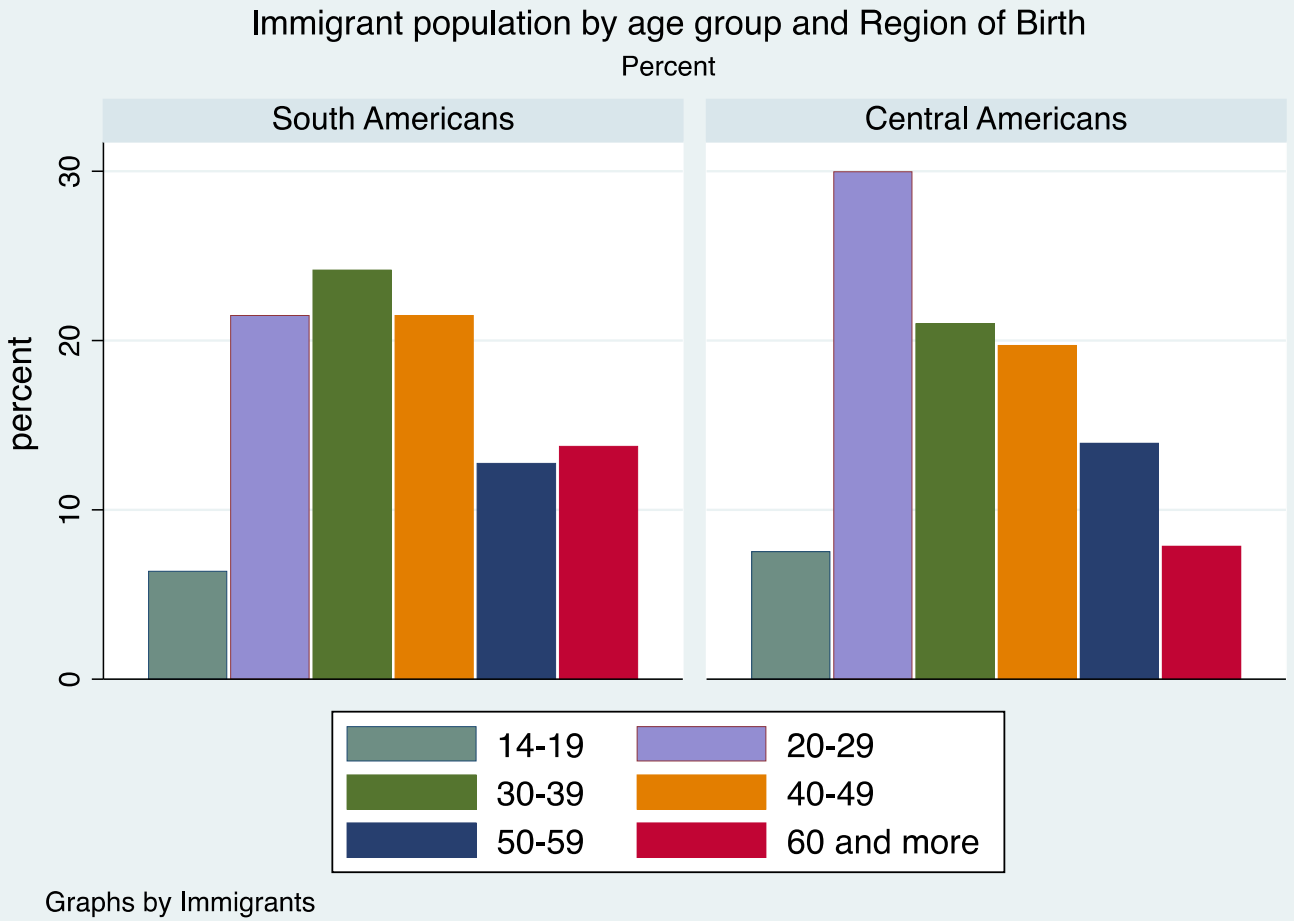
38% comes from Argentina, Colombia and Venezuela.

62% comes from Guatemala, El Salvador and Honduras.

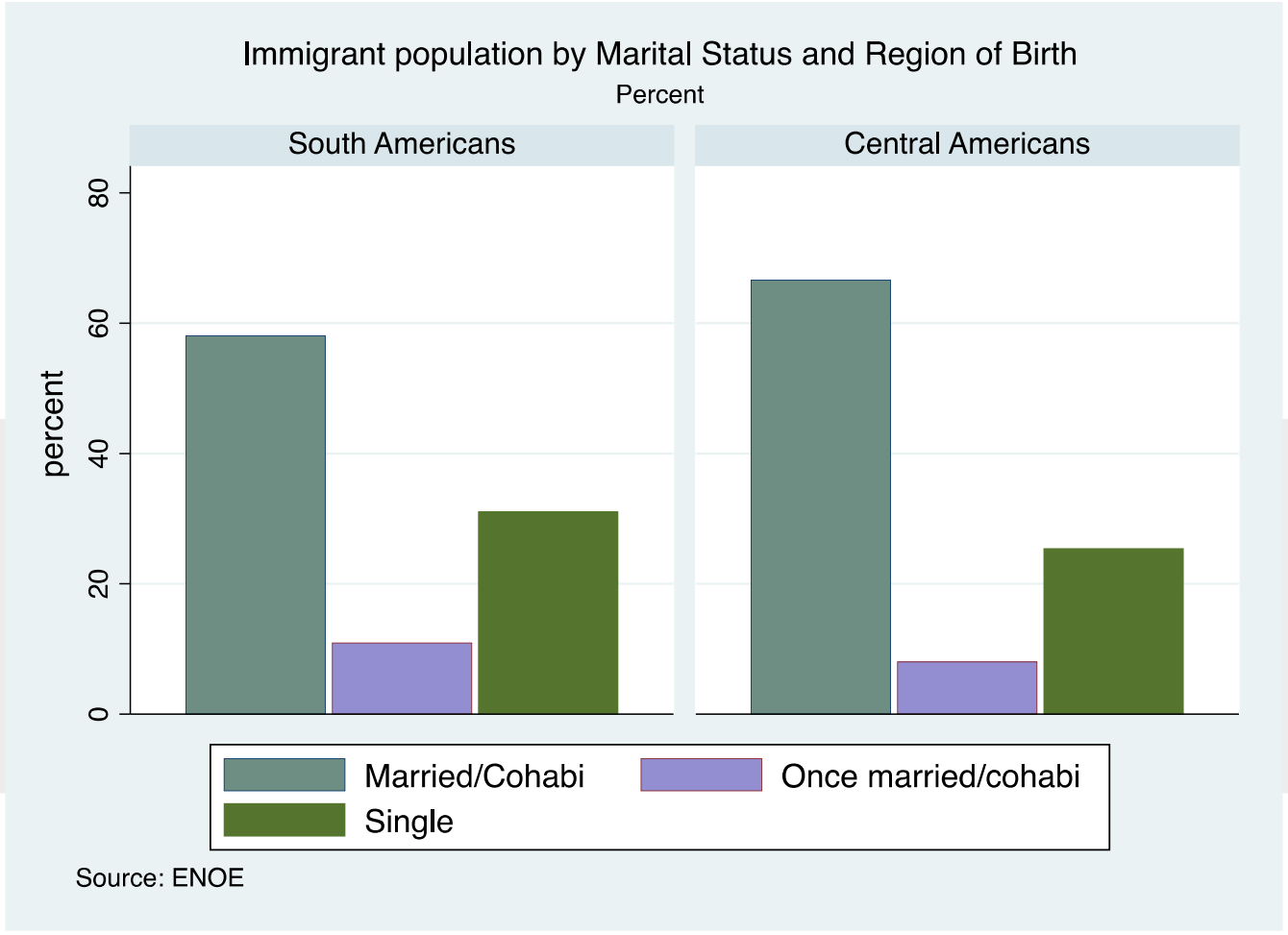
Sociodemographic analysis



Sociodemographic analysis



Sociodemographic analysis



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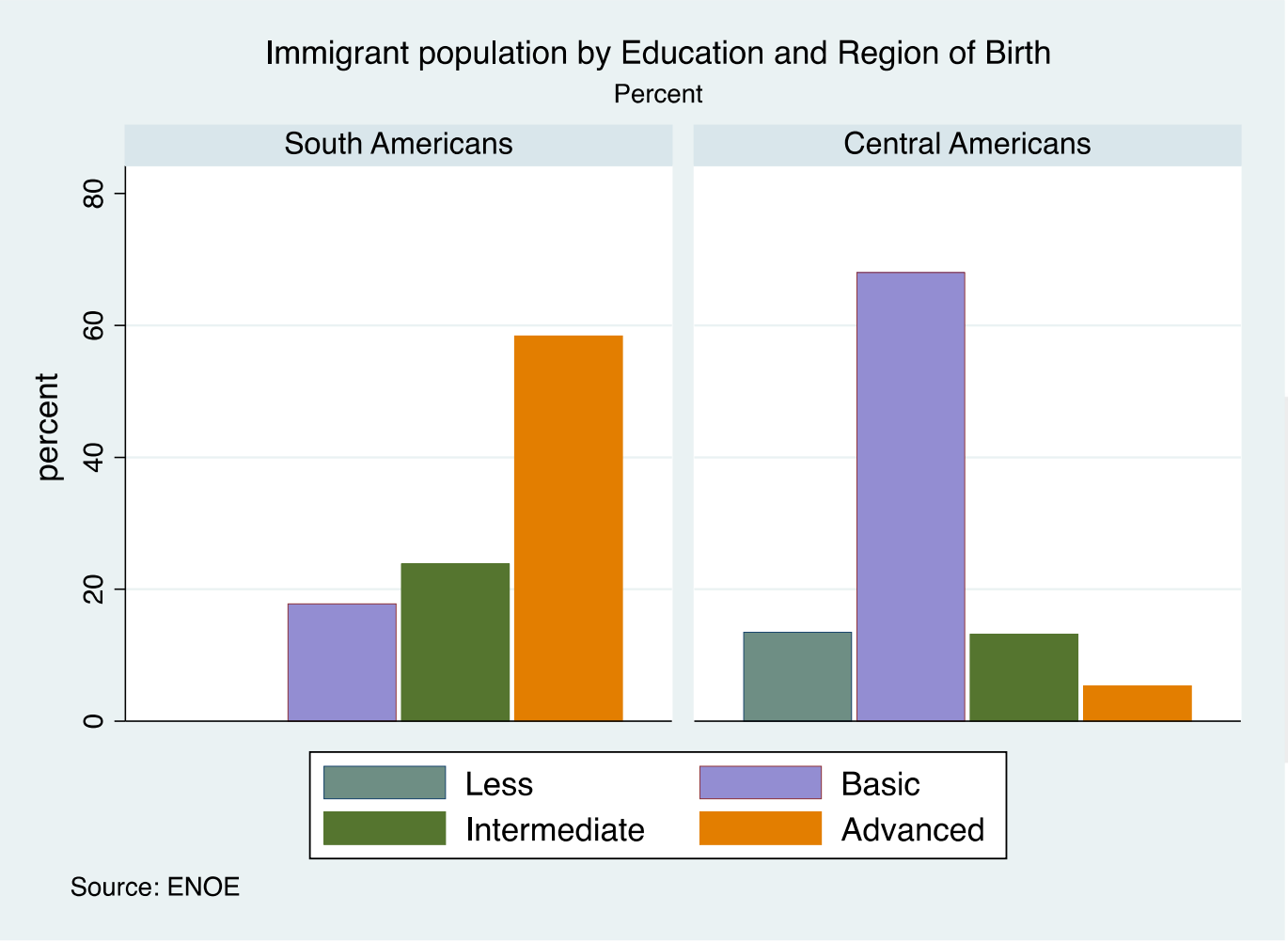
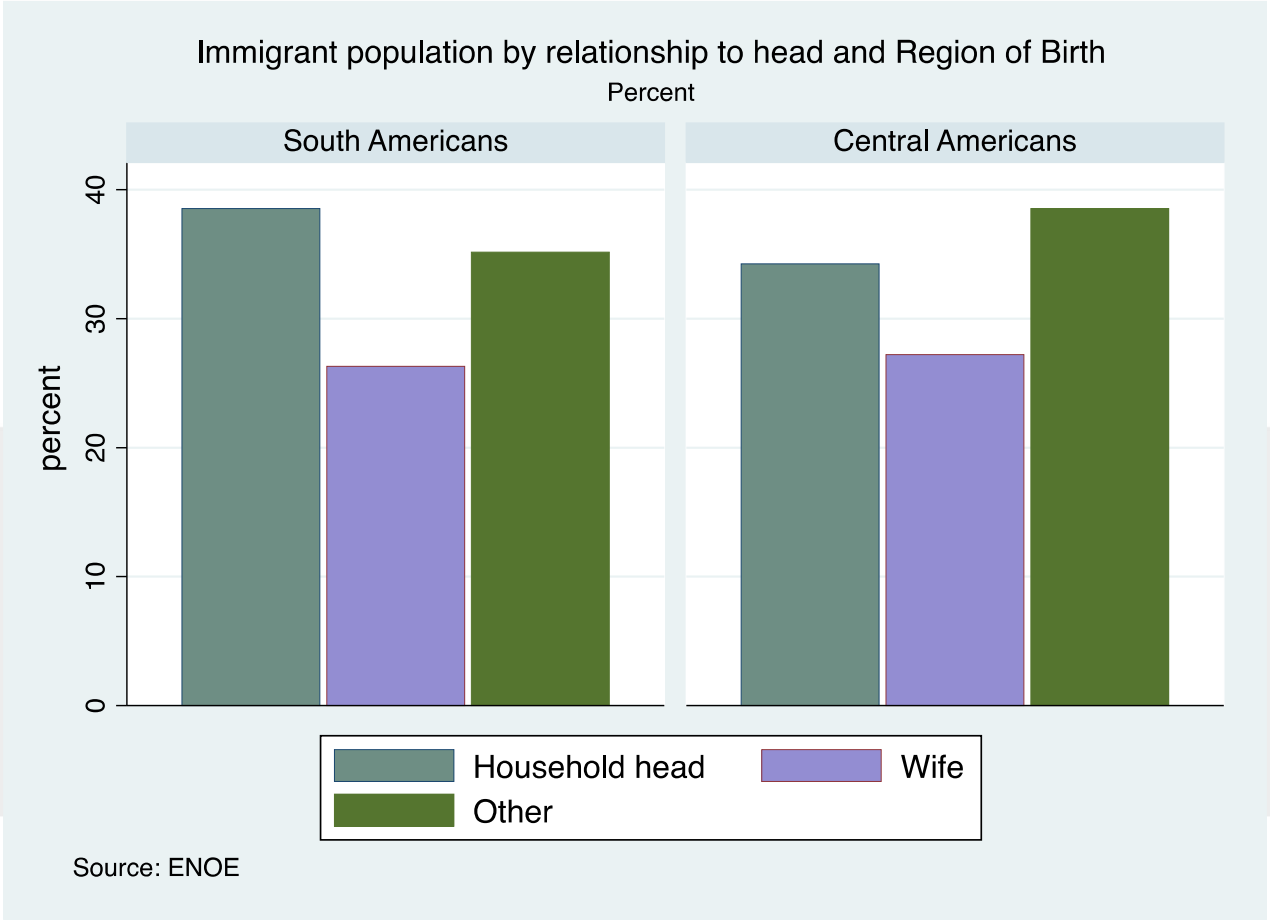
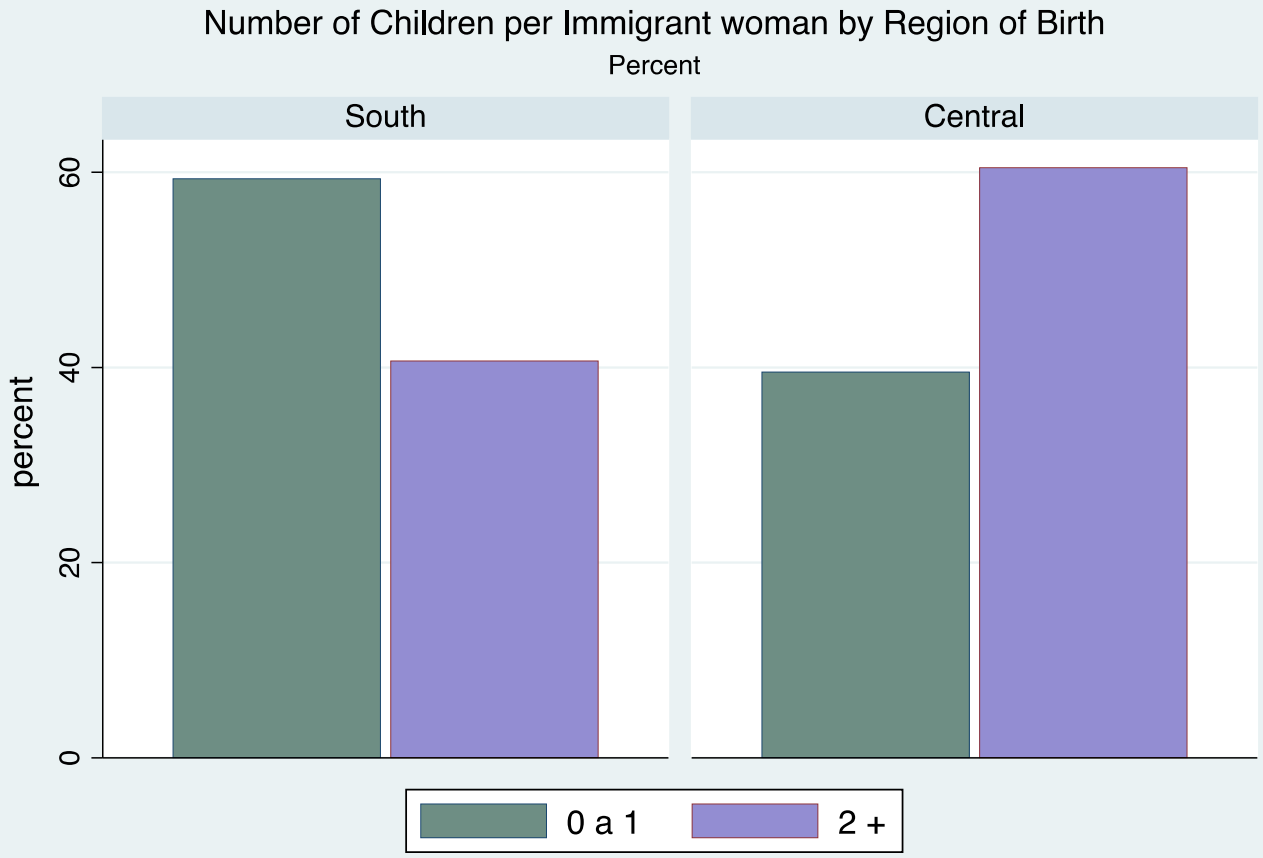


Sociodemographic analysis



Source: ENOE

Sociodemographic analysis



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Territorial analysis

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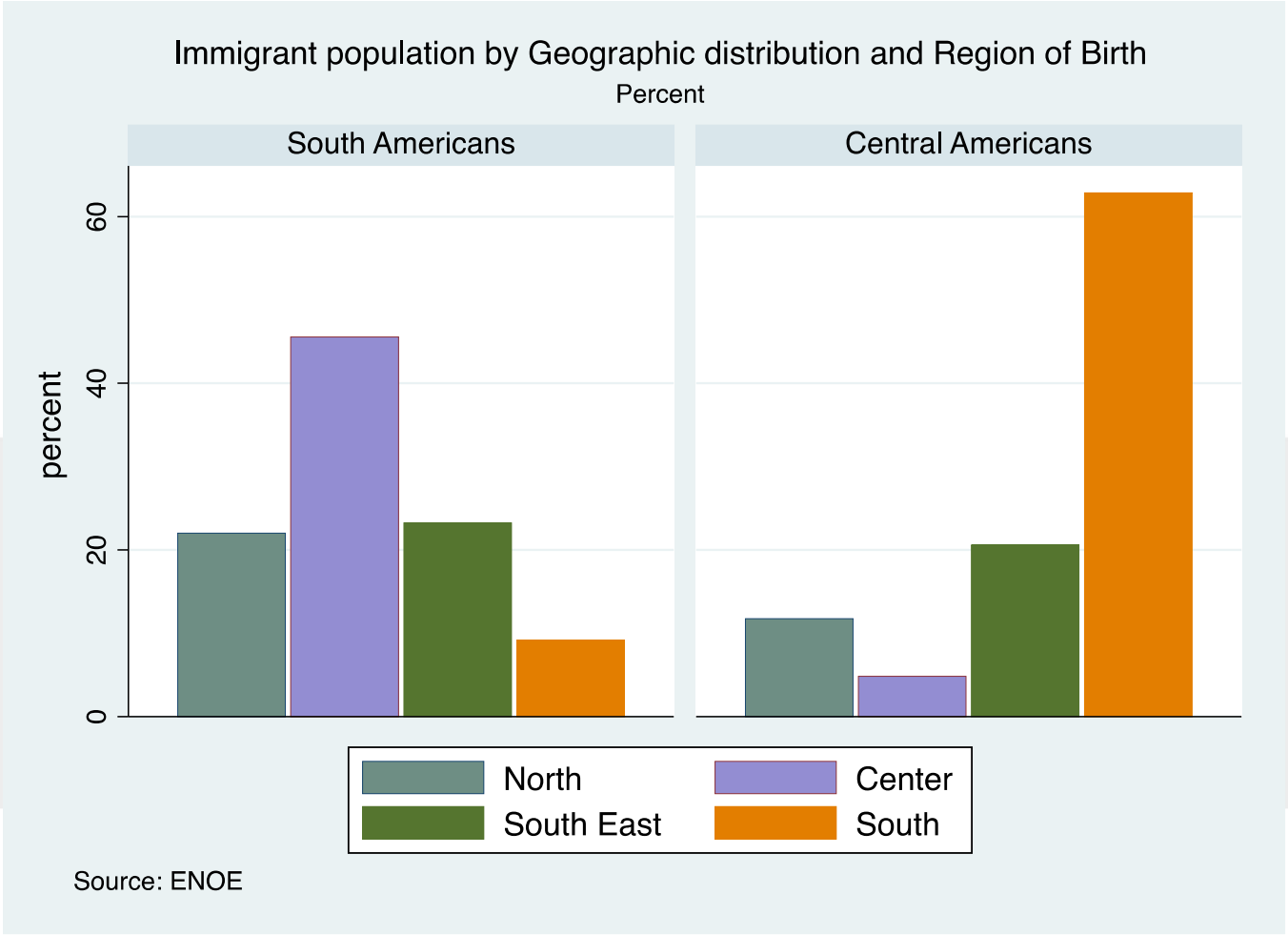
Territorial distribution. Regions

Territorial distribution



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Socio-occupational analysis

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Socio-occupational analysis

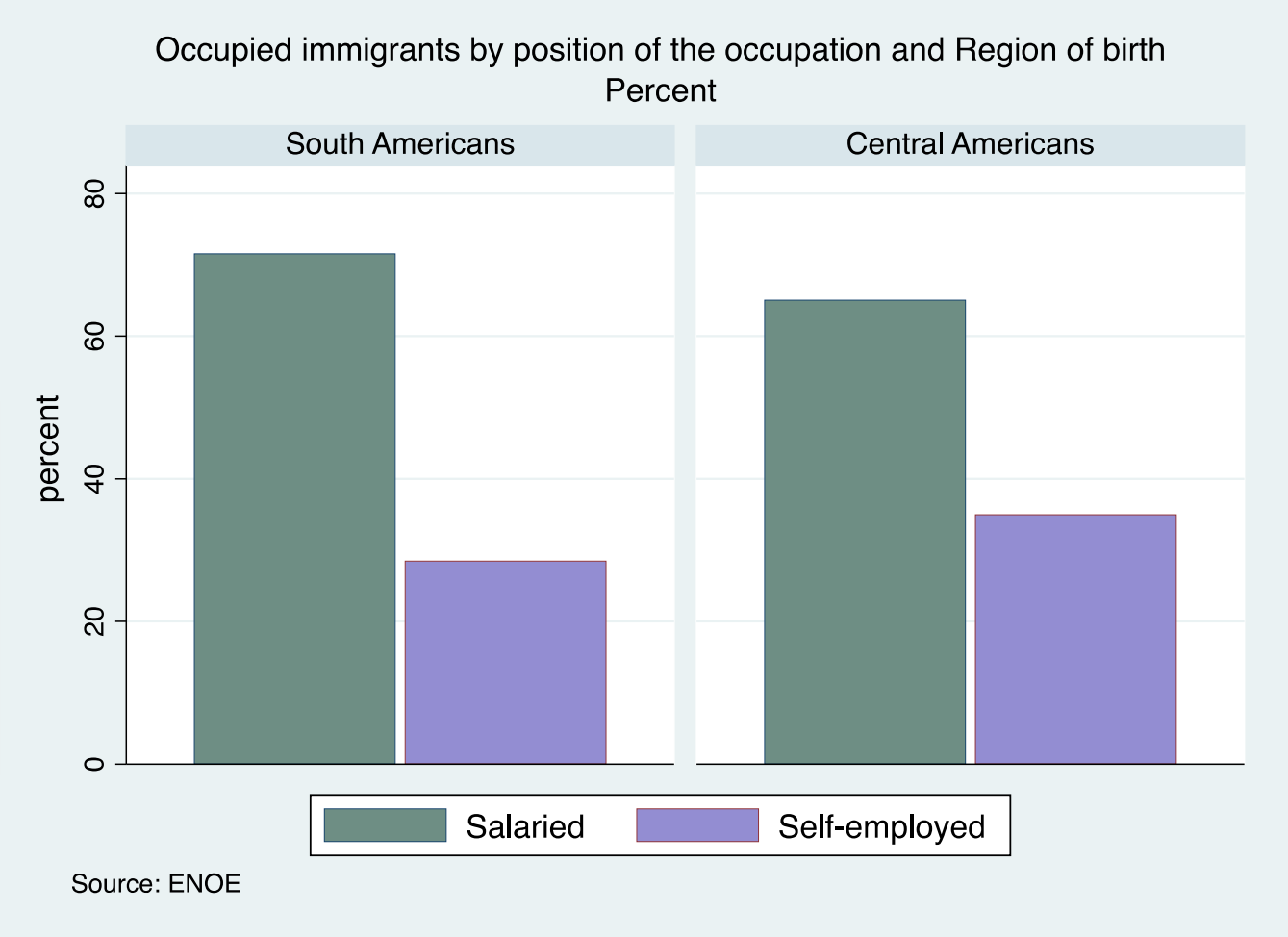
The socio-occupational analysis includes the immigrant population in working age and the immigrants that are economically active and occupied.

136,547 immigrants in working age from South and Central America.

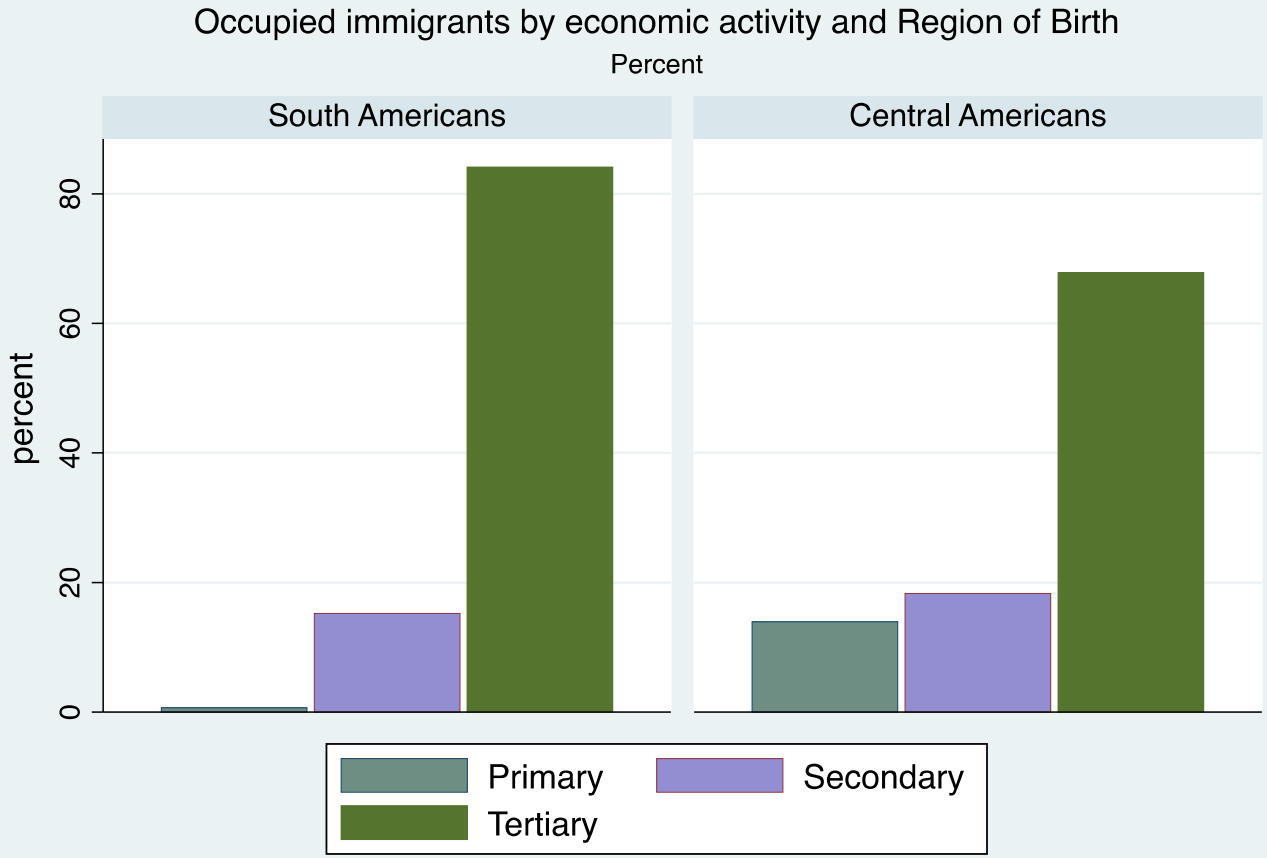
71% are economically active.

93% from the economically active are occupied.

Socio-occupational analysis



Socio-occupational analysis



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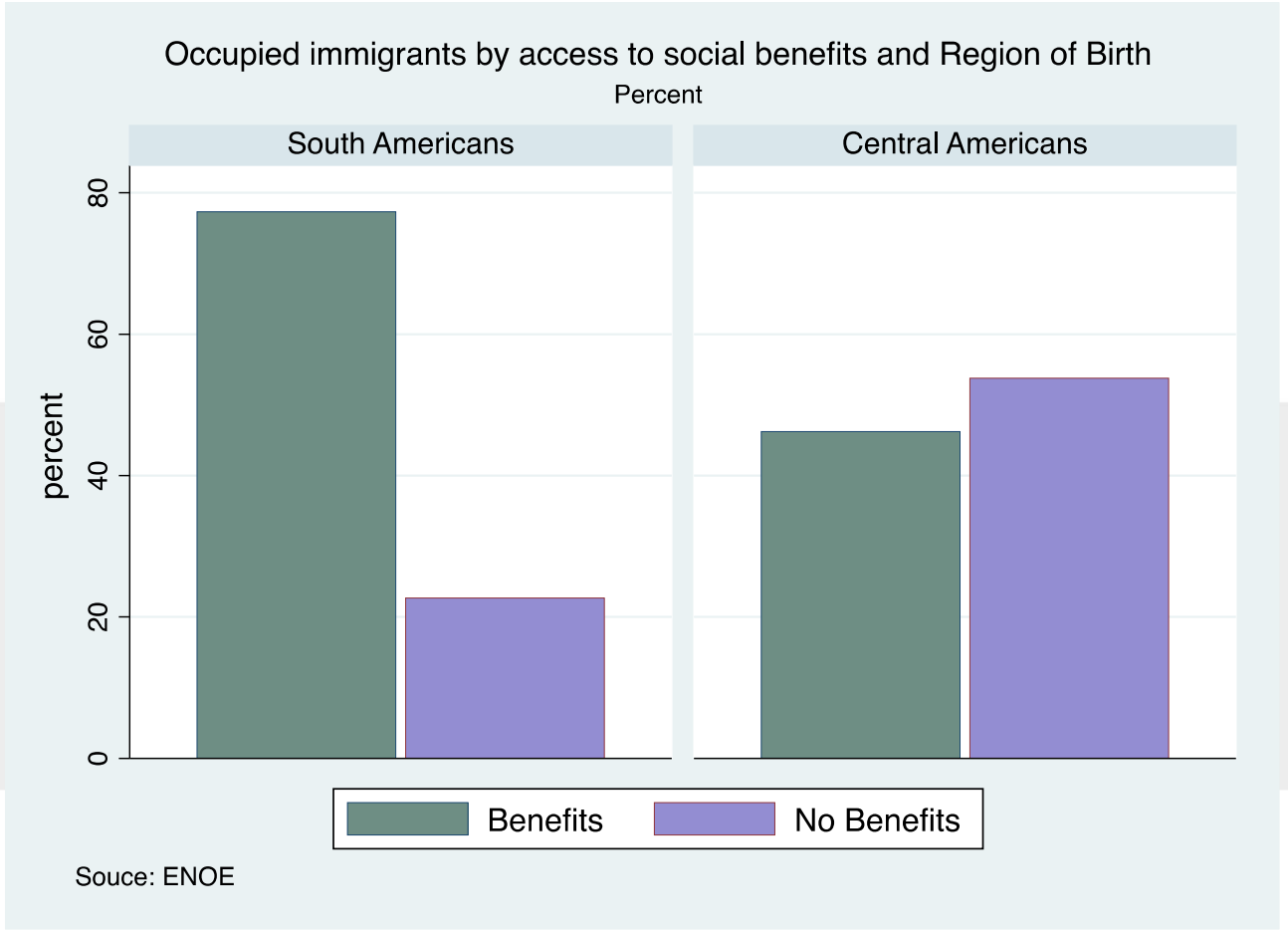
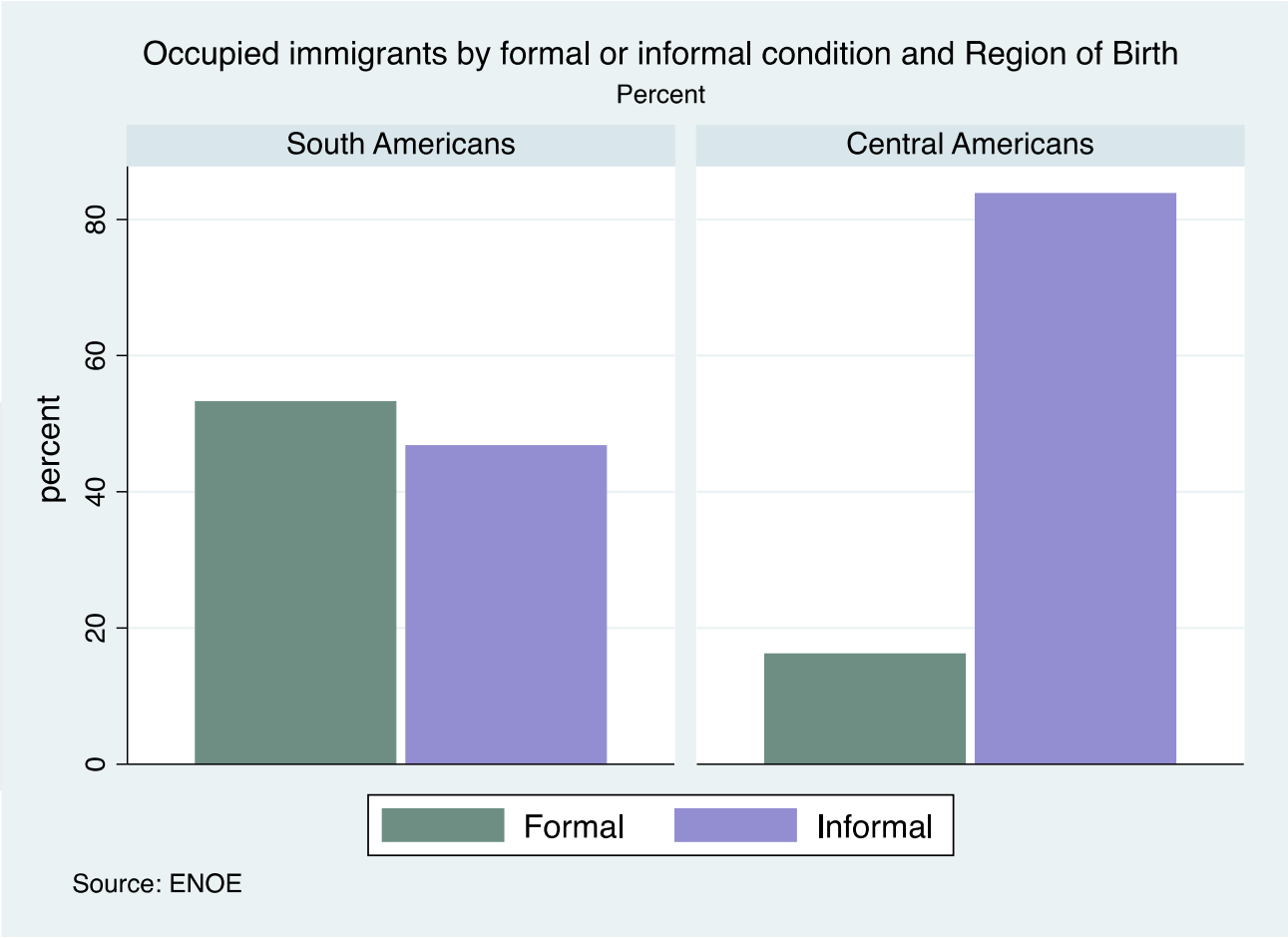
Socio-occupational analysis



Socio-occupational analysis



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Logistic Regression Model

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Considerations for the adjustment of the logistic regression model

The hyposthesis: the employability depends on different dimensions of analysis.

The immigrants with higher education level, who lives in the North region of the country, and are salaried has more chances to have a formal job.

This exercises help us to start assessing the data for the use in public policies.

Variables

The model adjustment required a recategorization of variables. The dependent variable was created considering the parameters of the logistic regression, 0 if the job is informal and 1 if it is formal

Name	Type	Operationalization
"Dependiente"	Dichotomic	0 Informal
		1 Formal

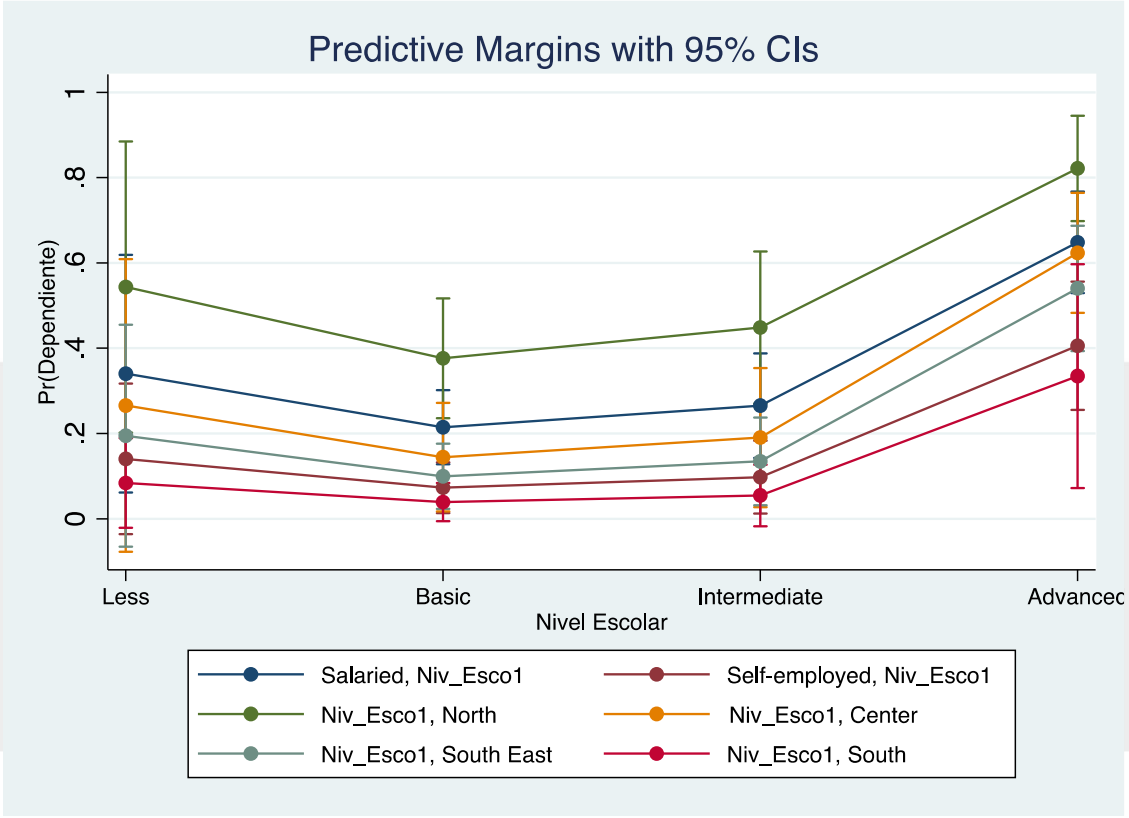
Variables

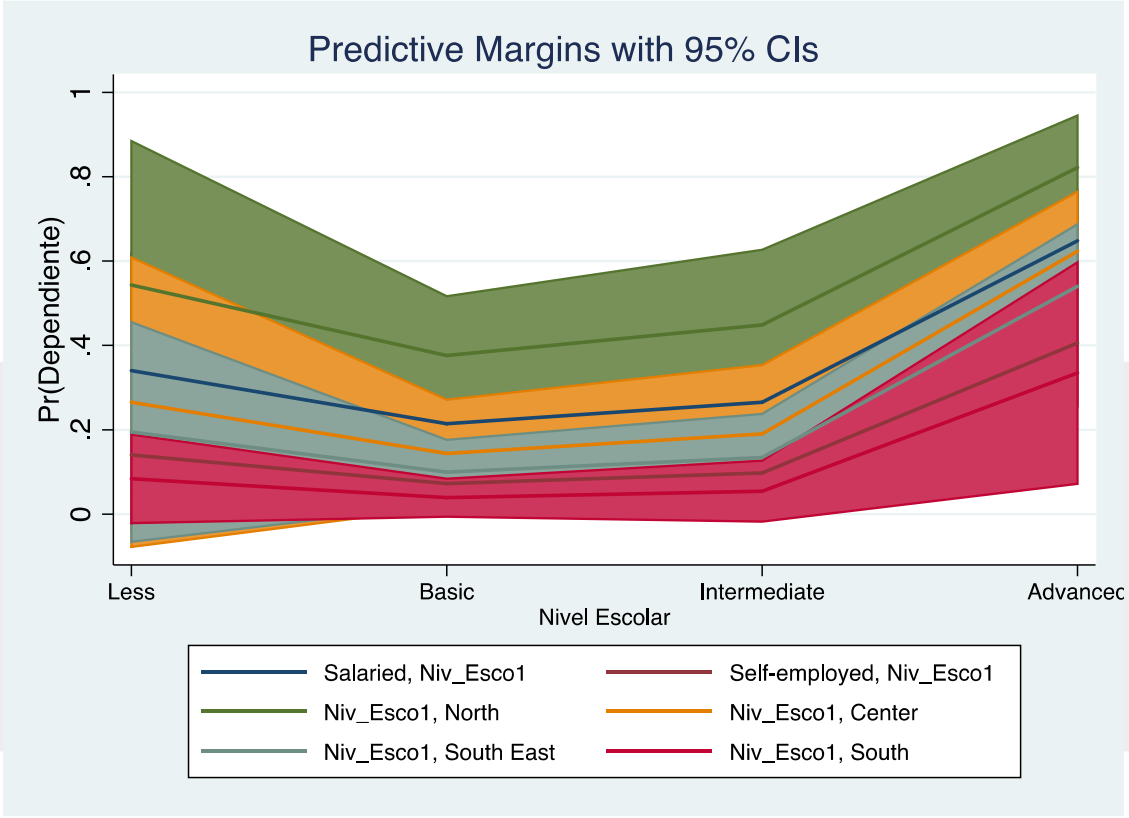
Independent variables			
	Name	Type	Operationalization
Socio-demographic variables	Sex	Categorical	1 Male
			2 Female
	Age	Categorical	1 14-19 yo
			2 20-29 yo
			3 30-39 yo
			4 40-49 yo
			5 50-59 yo
			6 60 and more
	Education	Numeric	1 Less
			2 Basic
			3 Intermediate
			4 Advanced
	Region of Birth	Categorical	1 South America
			2 Central America
Socio-occupational	Economic activity	Categorical	1 Primary
			2 Secondary
			3 Tertiary
	Occupational position	Categorical	1 Salaried
			2 Self-employed
Geographic	Regions	Categorical	1 Northen
			2 Center
			3 Southeastern
			4 Southern

Results

Logistic regression model coefficients from the occupied immigrant population from South and Central America (odds ratio)					
Logistic regression		Number of obs = 464			
		Wald chi2(7) = 72.20			
		Prob > chi2 = 0.0000			
Log pseudolikelihood = -30149.973		Pseudo R2 = 36.26%			
	Robust				
Dependiente	Odds Ratio	Std. Err.	z	P>|z|	[95% Conf. Interval]
Niv_Esco1					
Less/Basic	1.2757	1.3042	0.24	0.812	9.4621
Intermidiate	0.985	1.0536	-0.01	0.989	8.0162
Advanced	0.1003	0.1051	-2.19	0.028	0.7818
Occup.					
Self-employed	3.1407	1.3607	2.64	0.008	7.3419
Regions					
Centre	3.0365	1.642	2.05	0.040	8.7634
South East	5.4755	2.5145	3.7	0.000	13.4688
South	21.2329	14.5903	4.45	0.000	81.6428

Results


Predictive Margins with 95% CIs
Pr(Dependiente)
0
.2
.4
.6
.8
1
Less
Basic
Intermediate
Advancec
Nivel Escolar
Salaried, Niv_Esco1
Self-employed, Niv_Esco1
Niv_Esco1, North
Niv_Esco1, Center
Niv_Esco1, South East
Niv_Esco1, South


Predictive Margins with 95% CIs
Pr(Dependiente)
0
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Less
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Advancec
Nivel Escolar
Salaried, Niv_Esco1
Self-employed, Niv_Esco1
Niv_Esco1, North
Niv_Esco1, Center
Niv_Esco1, South East
Niv_Esco1, South

Conclusions

The hypotheses can be confirmed according to the econometric model.

This exercise will be replicate with the rest of the quarterlies to assess 2023 completely. It is necessary evaluate the data considering other questions.

We conclude that the education level has an impact in the employability, so this exercise could help to public policies.

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