

# Exploring the Social Determinants of a Global Health Status Index among Immigrants in Chile

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## Why studying international immigrants in Chile?

- International immigration to Chile has rapidly increased in the past decade.
- It is still fairly small in scale and immigrants are 1.6-1.8% of the Chilean population, but has become significant to economic growth and the innovation of services.
- Little research has been conducted to explore the social determinants of health (SDH) of the international immigrant population (IIP) in Chile and mostly qualitative.
- Significant variations in immigrants' health-status have been observed in the past, depending on the health indicator considered.
- This study analyzes the association between a new linear variable "Global Health-Status Index" (GHSI) generated from Exploratory Factor Analysis (EFA), and different social determinants of health (SDH) in the international immigrant population (IIP) in Chile.

### Purpose of this study

To analyze the association between a new linear variable "Global Health-Status Index" (GHSI) and different social determinants of health (SDH) among immigrants (IIP) in Chile



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## How was the study conducted?

### a. Dataset: CASEN survey 2006

Large Chilean population-based survey conducted in 2006, 268 883 participants from 73 720 households. **1% of the total sample** reported being international immigrants (n: 1877 participants).

### b. Main-outcome-measure: The GHSI

Global Health Status Index is a linear combination of:  
 (1) Number of general medical consultations,  
 (2) Number of mental specialist consultations,  
 (3) Number of other specialist consultations rather than mental health.

Constructed using Exploratory Factor Analysis [Range=-0.82-+4.25, the higher the index, the worse the health status].

Conbach's alpha=0.74      Bartlett's Sphericity Test p-value<0.001      Kaiser-Meyer-Olkin test=0.56  
 Minimum-loadings above 0.30      Loadings-uniqueness below 0.80

### c. Explanatory variables: SDH:

**Demographics** (age, sex, rural/urban, ethnic background, marital status, area);  
**Socioeconomic status** (low, medium, high);  
**Material standards** (overcrowding, sanitary conditions/ housing quality)

### d. Analysis:

Given the skewness of GHSI, **weighted Generalized Linear Models** (GLM) with log-link and gamma-variance function were estimated in STATA-10.0.

### Methods

The GHSI was estimated through exploratory factor analysis and analysed in its association with different SDH of immigrants in Chile using weighted Generalized Linear Models (GLM)

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## What are the key findings?

In the fully adjusted GLM:

- Age showed a positive association with the GHSI.
- Female immigrants showed a lower chance of having poor health status.
- Immigrants who were married or divorced, with Low or Medium SES, and with deficient sanitary conditions showed a higher chance of presenting a poor global health-status.
- Interestingly, immigrants living in overcrowded households showed a lower chance of having poor health status.

The SDH associated to the GHSI among immigrants in Chile\*

SDH	Coefficient	Standard Error
Age	0.02	0.003
Sex (female:1)	-0.31	0.07
Marital status (ref: single)		
Married	3.29	0.85
Divorced	5.44	1.51
Area of Chile (ref: Northern)		
Central area	1.93	0.28
Southern area	-0.56	0.29
Zone (rural:1)	-1.36	0.87
Ethnic background (yes:1)	1.32	1.06
Socioeconomic cluster (ref: high)		
Medium SES	1.90	0.40
Low SES	0.91	0.31
Overcrowding (yes:1)	-7.41	1.27
Sanitary conditions (deficient:1)	43.76	9.57
Housing quality (ref: adequate):		
Substandard	5.97	4.51
Inadequate	7.98	6.45

\*Weighted GLM with log-link and gamma-variance function  
 SIGNIFICANT VALUES IN YELLOW IN THE TABLE

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## What does this study add?

- Exploratory Factor Analysis was a necessary first step towards a combined measure of health status among immigrants.
- Generalised Linear Models (GLM) with log-link and gamma-variance function have been used in the past in health research and prove useful to deal with highly skewed outcomes without requiring transformation-retransformation techniques.
- The Global Health-Status Index was a useful indicator of health status to study different SDH in the immigrant population. It offers a single combined measure of correlated health outcomes.
- Findings from this study indicate that socioeconomic and material determinants were strongly associated with the global health status of immigrants, even after controlling for demographic factors,.
- This results should be further addressed by policymakers in Chile.

### Conclusion

Socioeconomic and material determinants were strongly associated with the global health status of immigrants and should be further addressed in Chile