9th INRICH workshop at Cornell University, Ithaca, NY

Parent-reported health status and its association with multi-dimensional poverty amongst children in Chile

A population-based, structural equation modelling study

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In this presentation…

About Chile

About SRH and MDP

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Final reflections

A few words about Chile

Population size ~ 18million

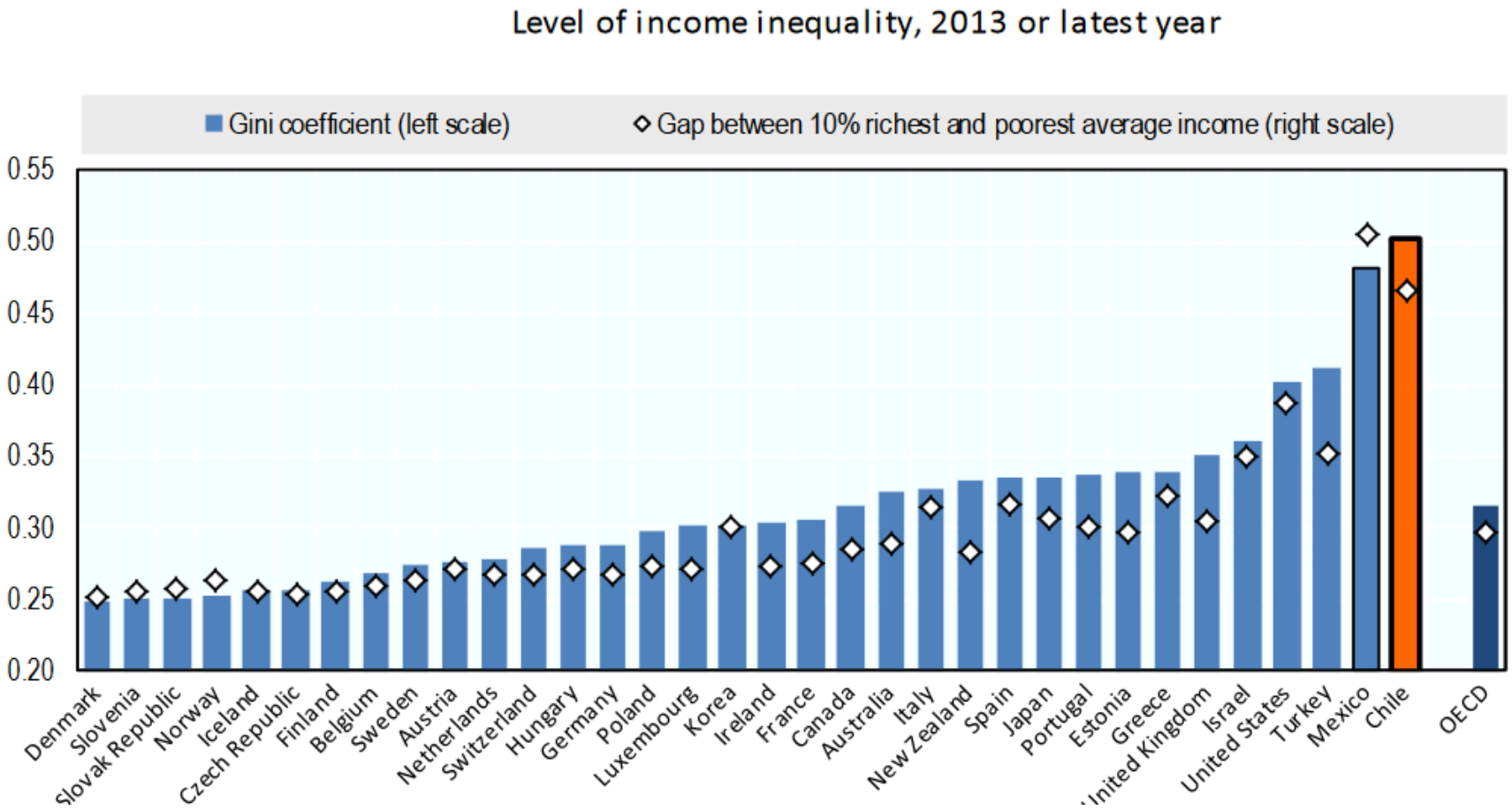
OECD member since 2010 (GDP >20.000 USD)

Political and social stability during the past 3 decades

Large socioeconomic inequalities (Gini ~0.46)

Children concentrated in poorer families

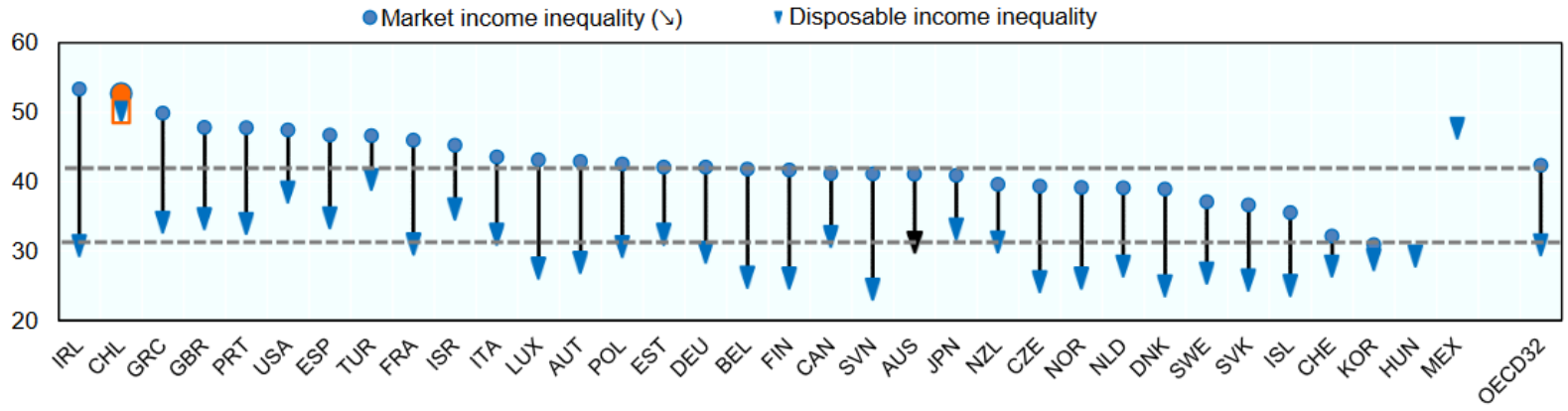
A few words about Chile



https://www.oecd.org/chile/OECD2015-In-It-Together-Highlights-Chile.pdf

A few words about Chile

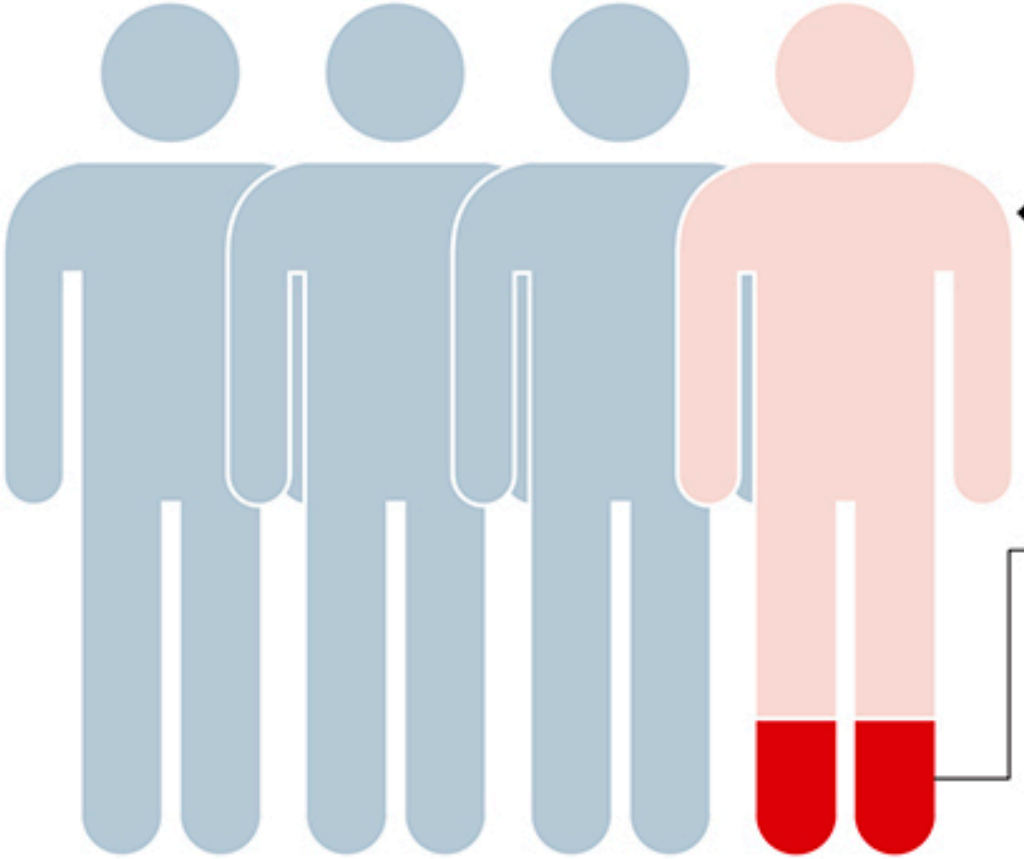
Effect of social protection measures on the redistribution of population income inequality



Redistribution is measured as the percentage difference between inequality (Gini coefficient) of gross market income and inequality of disposable income for the working-age population.

https://www.oecd.org/chile/OECD2015-In-It-Together-Highlights-Chile.pdf

The face of childhood poverty in Chile



4.414.927

25% of total population in Chile are children

22%

Living in income poverty in 2013

FUENTE: Casen

Self-reported health status (SRH)

1. Subjective health assessments: a valid health status indicator that can be used in cohort studies and population health monitoring (Miilunpalo el at 1997).

2. They have been used in most countries and have reliably predicted mortality and some morbidity in both general population and sick population (Curtin et al 1999; Kim et al 2016; Hoffman et al 2015).

3. SRHS also related to other relevant aspects of health and welbeing like extreme age groups, self-efficacy, health literacy, ethnicity, gender, and others (e.g. Riazi et al 2004; Streed et al 2017; Borrell et al 2008; Lim et al 2017; Whaley et al 2011…).

4. There are studies reporting a socioeconomic gradient in SRHS, including Chile (Cabieses et al 2015), but not its relation to MDP.

Multidimensional poverty (MDP)

1. MDP has been measured for decades (Landis et al 1971), but included in Chile only since 2013 (CASEN survey) (Chilean Ministry of Social Development, 2013).

2. The MDP framework -utilizing a comprehensive set of information- provides a compelling value added to solely income poverty measurement (Wagle 2008).

3. The concept of MDP has been acknowledged cutting across the disciplines (among economists, public health professionals, development thinkers, social scientists, policy makers and international organizations) and included in the development agenda (Mohanty 2011).

4. There are studies on MDP in children and its association with health outcomes (e.g. Roelen et al 2011; Mohanty 2011; Araujo et al 2015,…), but not in Chile.

The study

The aim was to explore, through structural equation modelling (SEM):

- The relationship between multidimensional poverty and parent-reported health status; and
- How much of this relationship was mediated by access to healthcare,

amongst children (<18 years) living in Chile in 2013.

About SEM

Structural equation modeling (SEM) is a technique for building and testing statistical models, which are often causal models.

Useful for: (i) testing theory models; (ii) questionnaire validation; (iii) developing new theories.

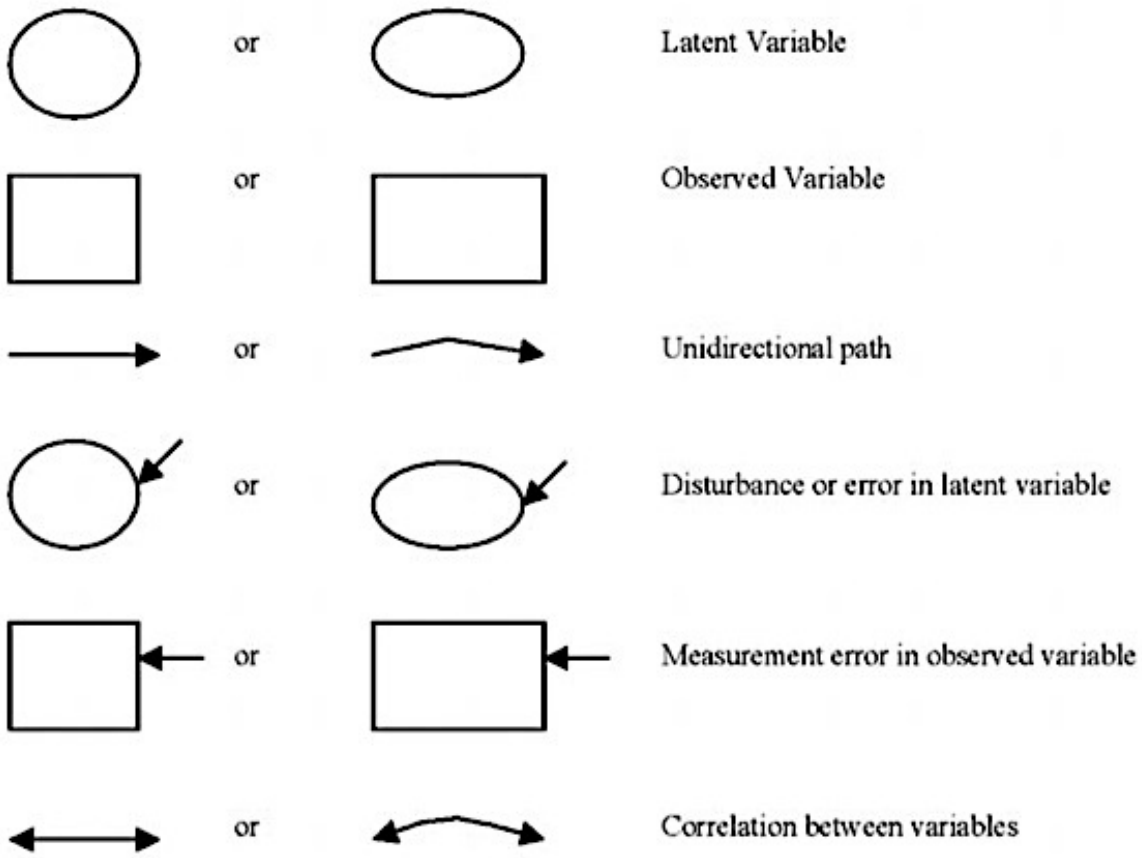
SEM includes a structural model and a measurement model:

- Variables (endogenous *dep.var*./exogenous *indep.var.*; observed/latent; mediator/moderator)
- Relationships between variables: causal/correlation; total/direct/indirect effects

Raykov & Marcoulides (2006)
Kline (2011)

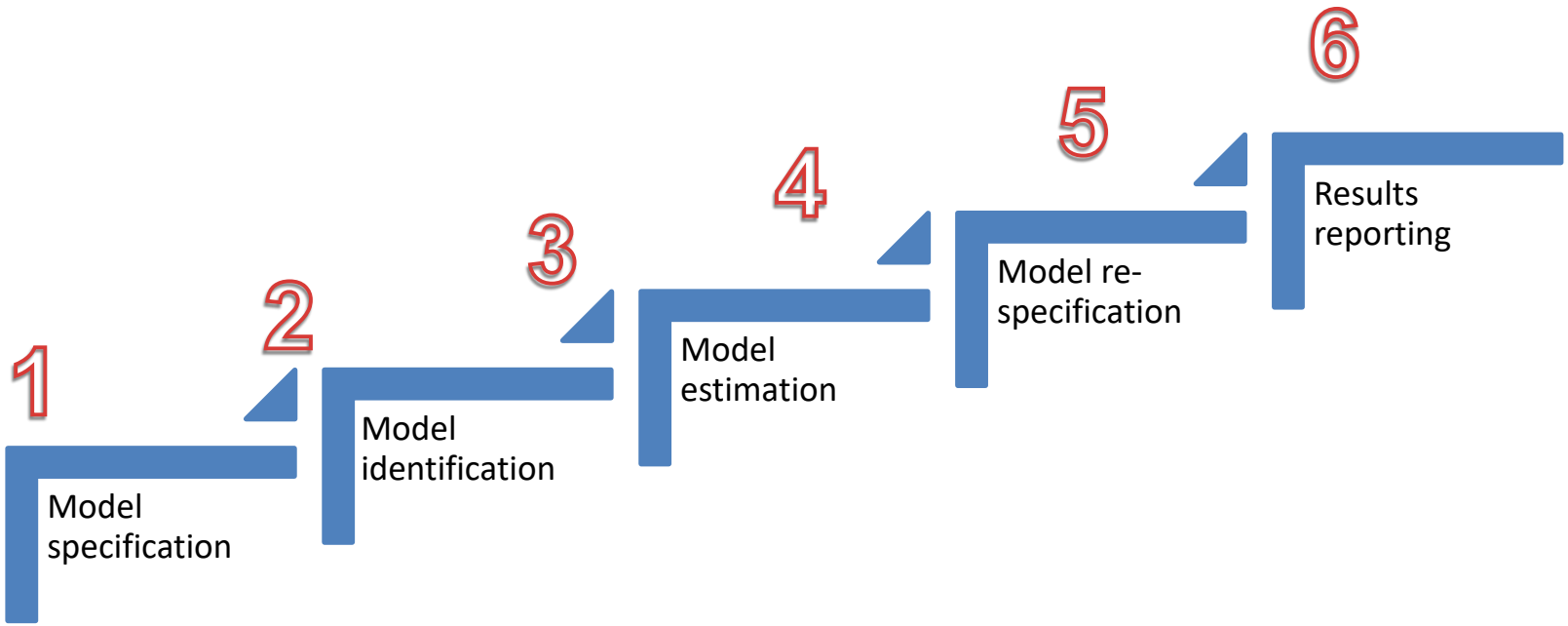
Schreiber, Nora, Stage, Barlow, & King (2006)

About SEM



Raykov & Marcoulides (2006)

About SEM



Kline (2011)

The dataset

The National Socioeconomic Characterization Survey (CASEN) is held every 2-3 years in Chile and it is used for social policy decision making in this country.

CASEN survey considers a representative sample of households at the national level and collects information on socioeconomic status (e.g. income, occupation, housing and education), in order to estimate the level of poverty and income distribution in Chile.

It also considers healthcare provision entitlement (has/has not healthcare entitlement) and other socio-demographic variables (age, sex, migration status, living in urban areas, household income).

CASEN 2013 total sample size= 218 491 individuals from 66 725 households, representing 17 273 117 people residing in Chile in 2013.

Multidimensional poverty is a binary (poor/not poor) variable obtained from 12 items organised into 4 dimensions: education, health, social security and housing. By definition, a household experiences multidimensional poverty when it has a deficiency in 25% or more (3/12) of the indicators.

4 Dimensions	12 ítems & poverty measurement
Education	1. No attendance (≥1child 4-18 years old not attending shool) 2. School lag (≥1 person ≥21 years old attending school) 3. Under-expected school achievement (≥1 person ≥18 years not finished school)
Health	1. Under/Overnourished (≥1 child 0-6 years old under or over nourished by IMC) 2. No healthcare provision (≥1 person with no healthcare provision entiltement) 3. No access to health services (≥1 person could not access last 12 months)
Work & Social security	1. Unemployment (≥1 person ≥18 years old willing to work but unemployed) 2. No social security (≥1 person ≥18 years old working but without social security) 3. No pension (≥1 person should but is not receiving pension (disability, retirement, etc)).
Housing	1. Overcrowding (≥2,5 persons per bedroom) 2. Poor quality household (transient camp or ceiling/floor/walls below aceptable standard) 3. No sanitization (no clean wáter; no sewage)

Parent-reported health status is a unique ordinal variable that ranges from 1 to 7 (1=the worst / 7=the best possible health). For under 18 years old this was reported by parents.

The methods

Using data from under 18 years old participants of CASEN 2013 (n=56,811, weighted N=4,413,728), two SEM models were adjusted:

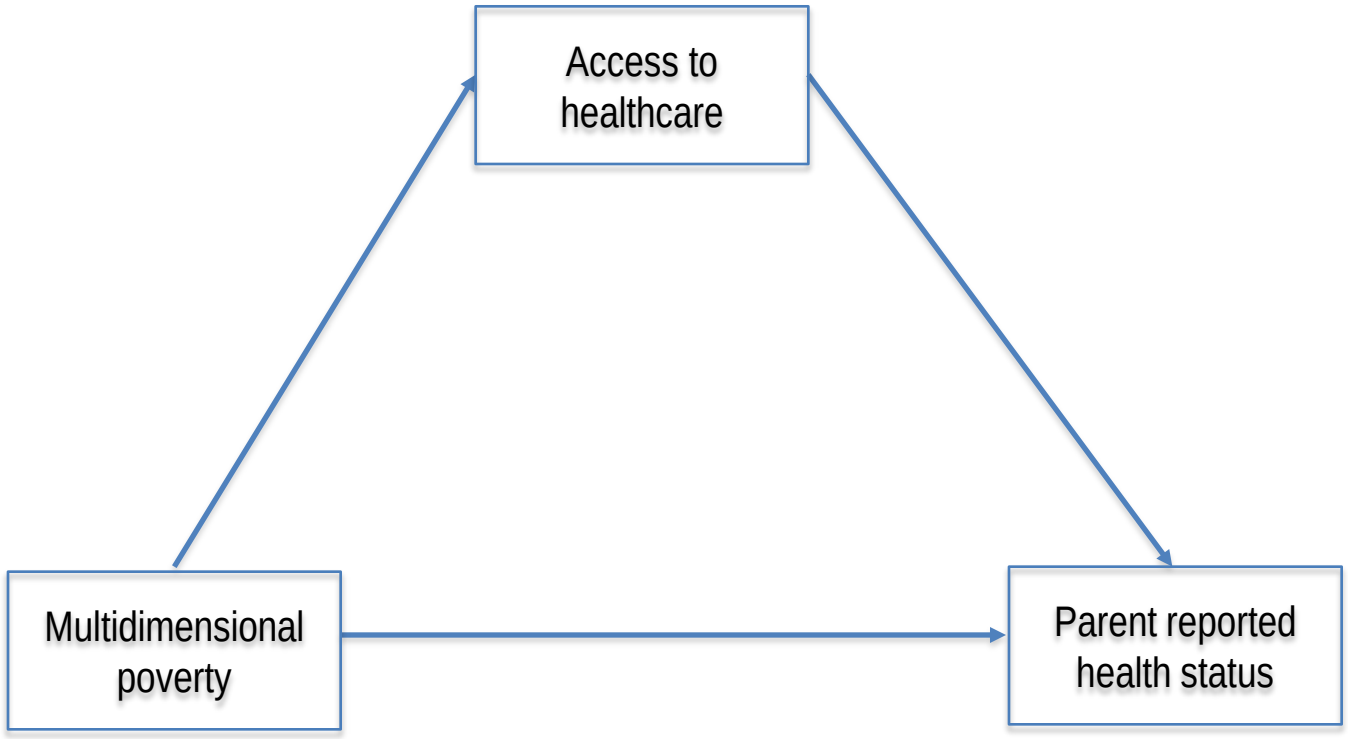
1. The first one (Model 1) considered the crude relationship between household multidimensional poverty (yes/no), parent-reported health status and access to health services (healthcare provision; yes/no) of the child.

2. In the second model (Model 2), we adjusted Model 1 by five covariates (sex, age, being an immigrant, household income and urban).

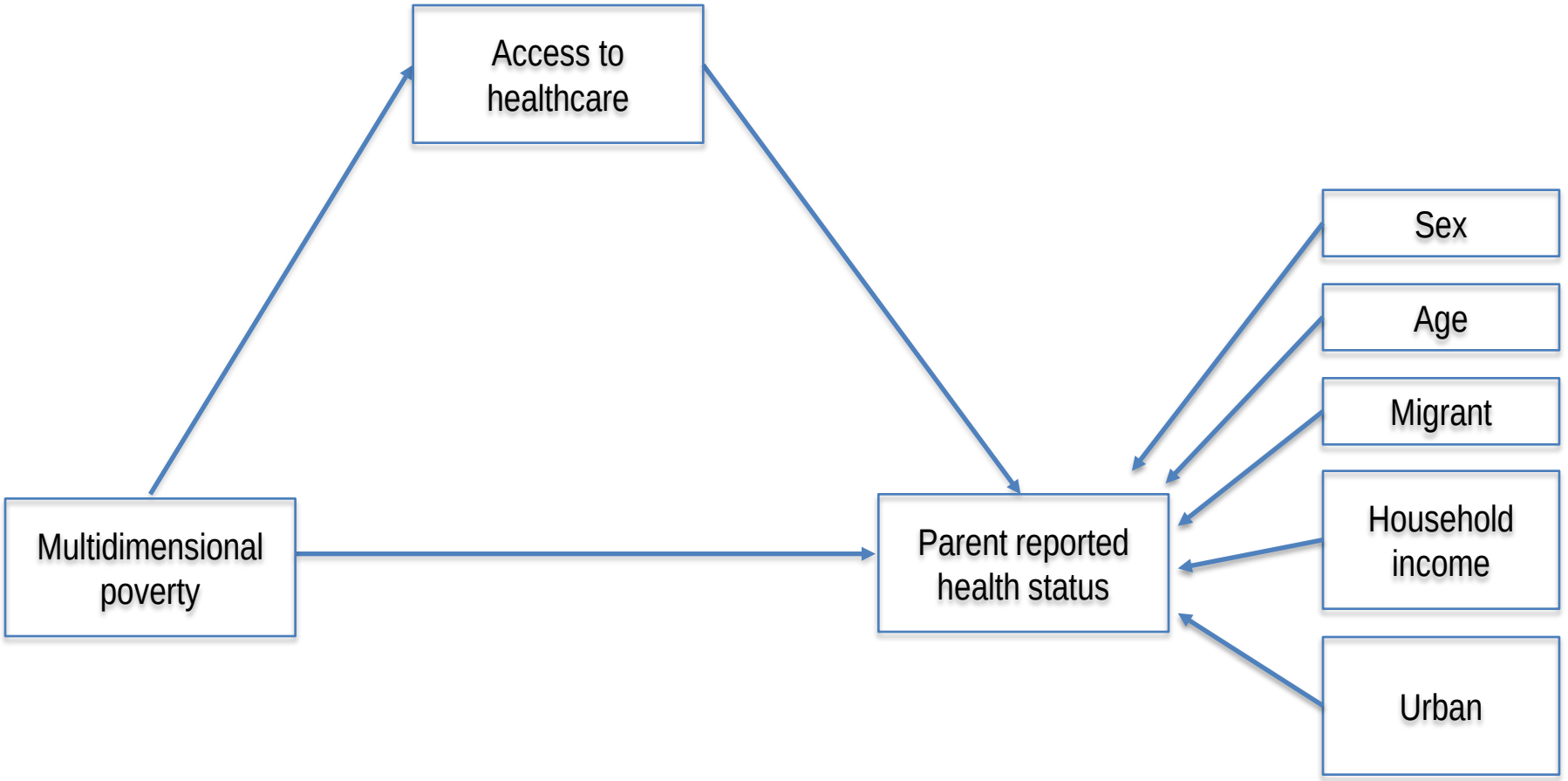
Both models were assessed using the Mean Root Square Error Approximation (RMSEA<0.05) and the Comparative Fit Index (CFI>0.95).

Analysis conducted in Mplus 7.

Theoretical Model 1



Theoretical Model 2



Main results

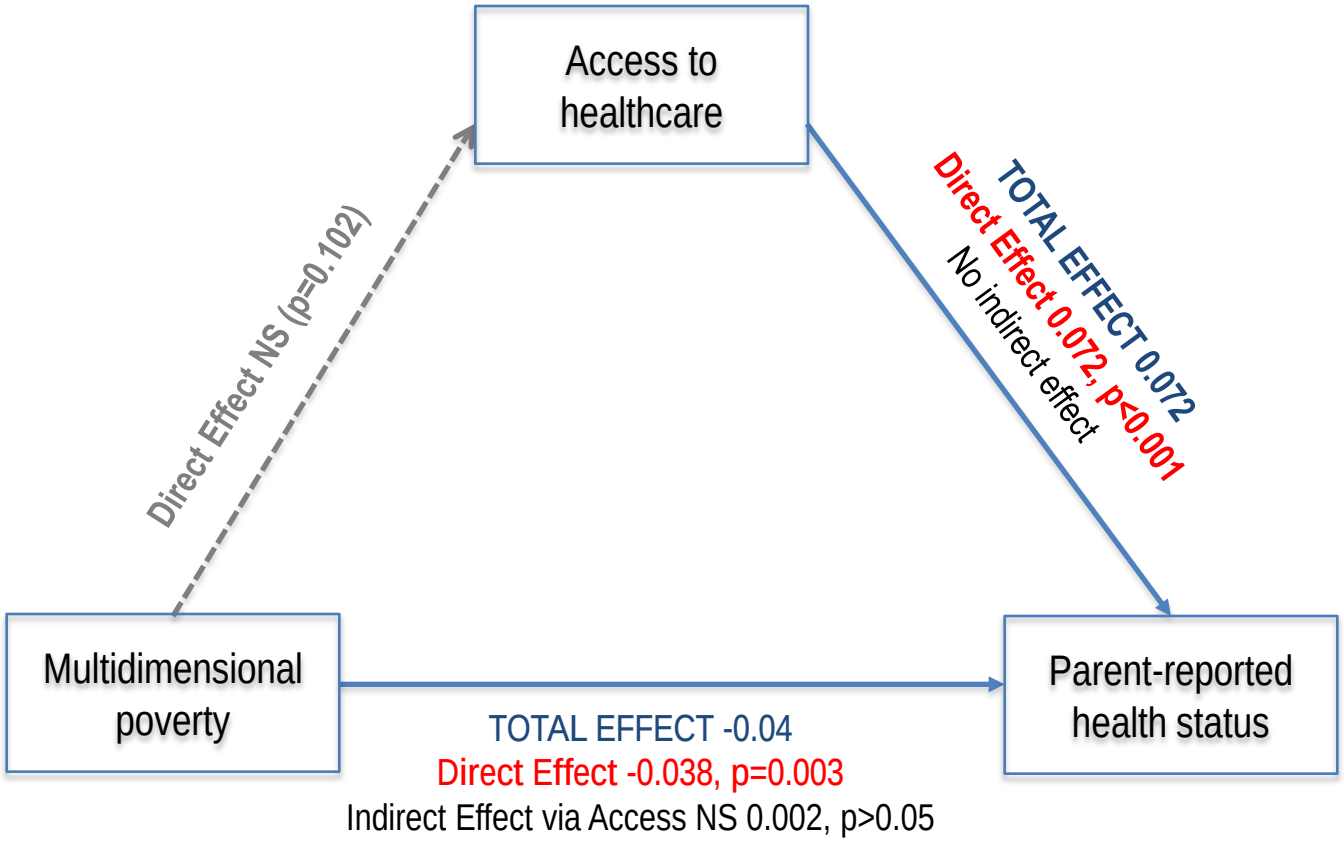
Models 1 and 2 fitted the data appropriately (Model 1: RMSEA=0.0, CFI=1; Model 2: RMSEA=0.02, CFI=0.95).

In Model 1 a significant direct effect was observed between MDP and PRHS of the children (Bstd=-0.04, p-value=0.003). That is, children living in MDP had lower PRHS.

Access to healthcare also had a direct and significant effect on parent-reported health (Bstd=0.072, p-value<0.001).

However, no mediator effect was found for access to healthcare in the relationship between poverty and children´s health status (p-value=0.102).

Main results Model 1 crude



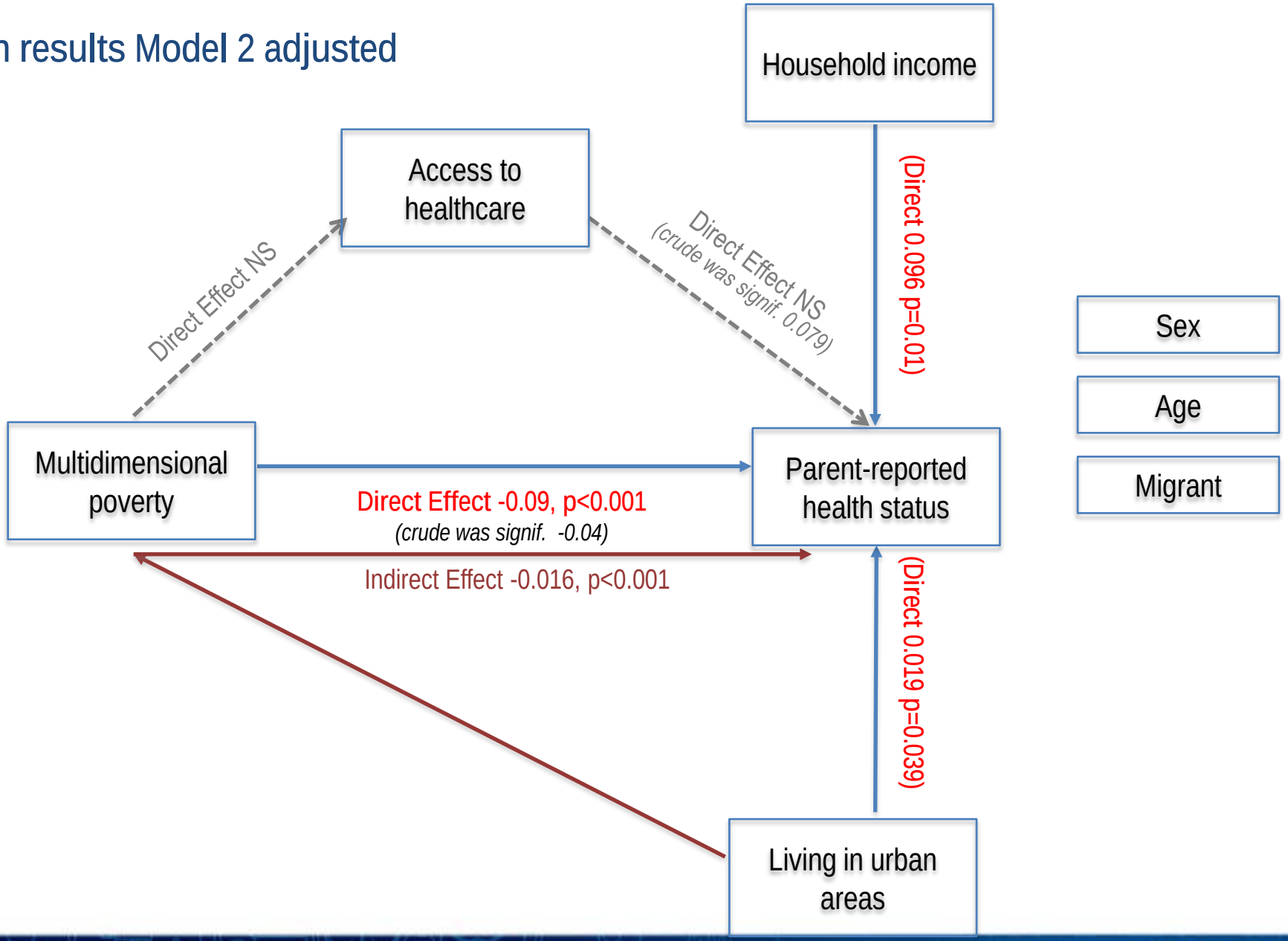
Main results

In the adjusted Model 2, the direct effect of MDP on PRHS of the children was maintained, but the effect of access to healthcare on children´s health status disappeared (p-value=0.77).

The variables age, sex and migration did not show significant direct or indirect relationships with parent-reported health.

Nevertheless, both household income (Bstd=0.096 p-value=0.01) and rurality (Bstd=0.019 p-value=0.039) showed significant direct relationships with PRHS of the children. That is, children from higher household income and from urban households presented better levels of parent-reported health.

Main results Model 2 adjusted



Some study Limitations

Theoretical model.

Binary variables.

Cross-sectional data.

Parent-reported measures.

Selection bias (e.g. institutionalised children not included).

Final thoughts

This is the first study in Chile to assess the relationship between multidimensional poverty and parent-reported health status of children.

Using SEM as a strength.

Findings support the strong relationship between household poverty and health status in children.

In Chile, a country that aims for universal access to healthcare, being entitled to a health system is not enough to mediate such relationship.

BUT! Further analysis should explore type of healthcare provision and effective use/barriers as potential mediators; as well as improve the theoretical model.

THANK YOU

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