



Ten Years of Multidimensional Poverty Measurement in Mexico: Challenges and Perspectives

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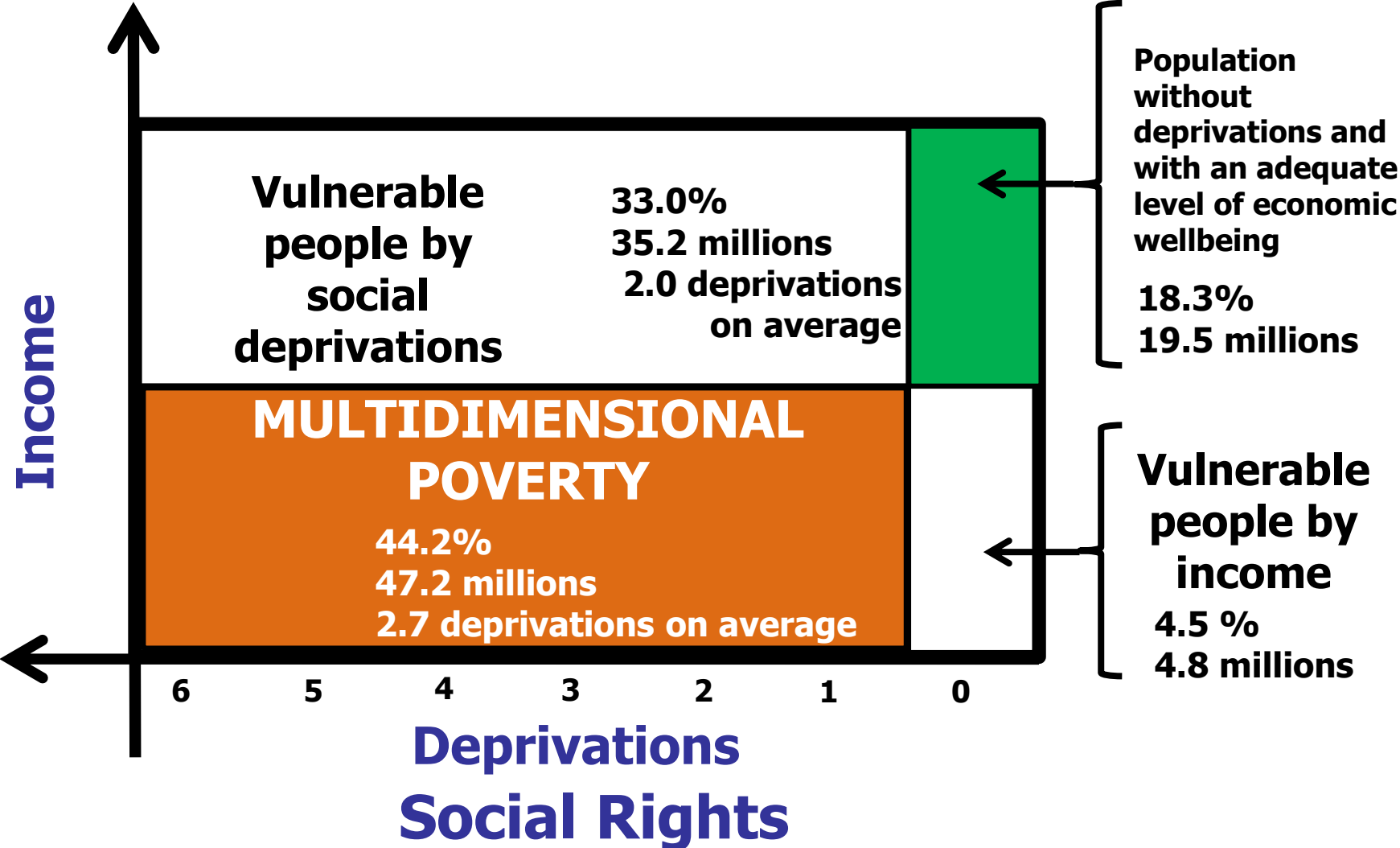
12th November 2019

Multidimensional Poverty in Mexico

General Law of Social Development (LGDS): Article 36 – An official Multidimensional Poverty Measure must be produced which includes at least the following eight dimensions;

1. Per capita current income
2. Average gap between compulsory education and actual education at the household level (educational gap) – in practice it is measured at the individual level
3. Access to Health Services
4. Access to Social Security
5. Dwelling characteristics, space and quality
6. Access to basic dwelling related services (water, sewerage, electricity, etc)
7. Access to food – now access to nutritious & quality food (2016)
8. Level of social cohesion
9. Access to paved roads (2013)

Total population 2008 (106,680,526)



The strengths of the Mexican Multidimensional Poverty Measure

The rights based framework for assessing multidimensional poverty under the General Law for Social Development

- 1) The LGDS is designed “*To guarantee the full exercise of the social rights stated in the Constitution*”.
- 2) The Mexican Constitution is the embodiment of the will of the people.
- 3) There is a well established and detailed philosophy which demonstrates the links between human rights and needs.
- 4) The Mexican government has freely signed many International conventions on human rights which embody the desires of the Mexican population.
- 5) Politicians and the public understand the concept and language of ‘rights’.

Poverty & Human Rights

The framework provided by the Mexican Constitution and international human rights conventions, such as the *Convention on the Rights of the Child* provides a helpful instrument for poverty research.

Firstly, the Mexican constitution represents the will of the Mexican people and human rights conventions have been signed by every country in the World and so can be considered to embody universal values and aspirations.

Secondly as Mary Robinson (former UN High Commissioner for Human Rights) has argued “*a human rights approach adds value because it provides a normative framework of obligations that has the legal power to render governments accountable*”.

Finally, a human rights approach shifts the emphasis in debates about poverty away from personal failure to a focus on the failure of macro-economic structures and policies created by nation states and international bodies (WTO, World Bank, IMF etc.). Hence, poverty in this context is no longer described as a ‘social problem’ but a ‘violation’ of rights.

Human Rights and Multidimensional Poverty

The full package of human rights provides a lens through which poverty is seen as multi-dimensional, encompassing not only a low income, but also other forms of deprivation and loss of dignity.

Donald and Mottershaw (2009) Poverty, Inequality and Human Rights
<http://www.jrf.org.uk/sites/files/jrf/poverty-human-rights-full.pdf>

Indicators of poverty

Income



Education Lag



Access to health services



Access to social security



Access to food



Housing quality and space



Access to basic housing services



Degree of social cohesion



Decennial Revision of the Multidimensional Poverty Measure

CONEVAL has argued that the multidimensional poverty measure should be revised and updated every ten years.

- 1) The **education** indicator does not measure education quality i.e. it is possible to complete basic education and still have literacy and numeracy difficulties, etc. The 'real' education gap is not about how many years a child attended school but is concerned with what they learned.
- 2) Access to **health services and social security** are largely the same indicator. Better measures concerning actual access to health care access and the quality of these services are needed.
- 3) Adopt socially realistic thresholds for housing quality and housing services. Current thresholds do not correspond well with the views of the Mexican people.
- 4) Include new Constitutional social rights – internet access
- 5) Develop child specific indicators to better reflect different needs of children and adults

Poverty Theory

Peter Townsend's concept of relative deprivation

Argues that poverty can only be measured:

*“objectively and applied consistently only in terms of the concept of relative deprivation..... The term is understood objectively rather than subjectively. Individuals, families and groups in the population can be said to be in poverty when they **lack the resources** to obtain the types of diet, participate in the activities and have the living conditions and amenities which are customary, or at least widely encouraged or approved, in the society to which they belong” (1979, p 31)*

Definitions of Poverty

Poverty can be defined as;

Command over insufficient resources over time

The result of poverty is *deprivation*

Definition of poverty



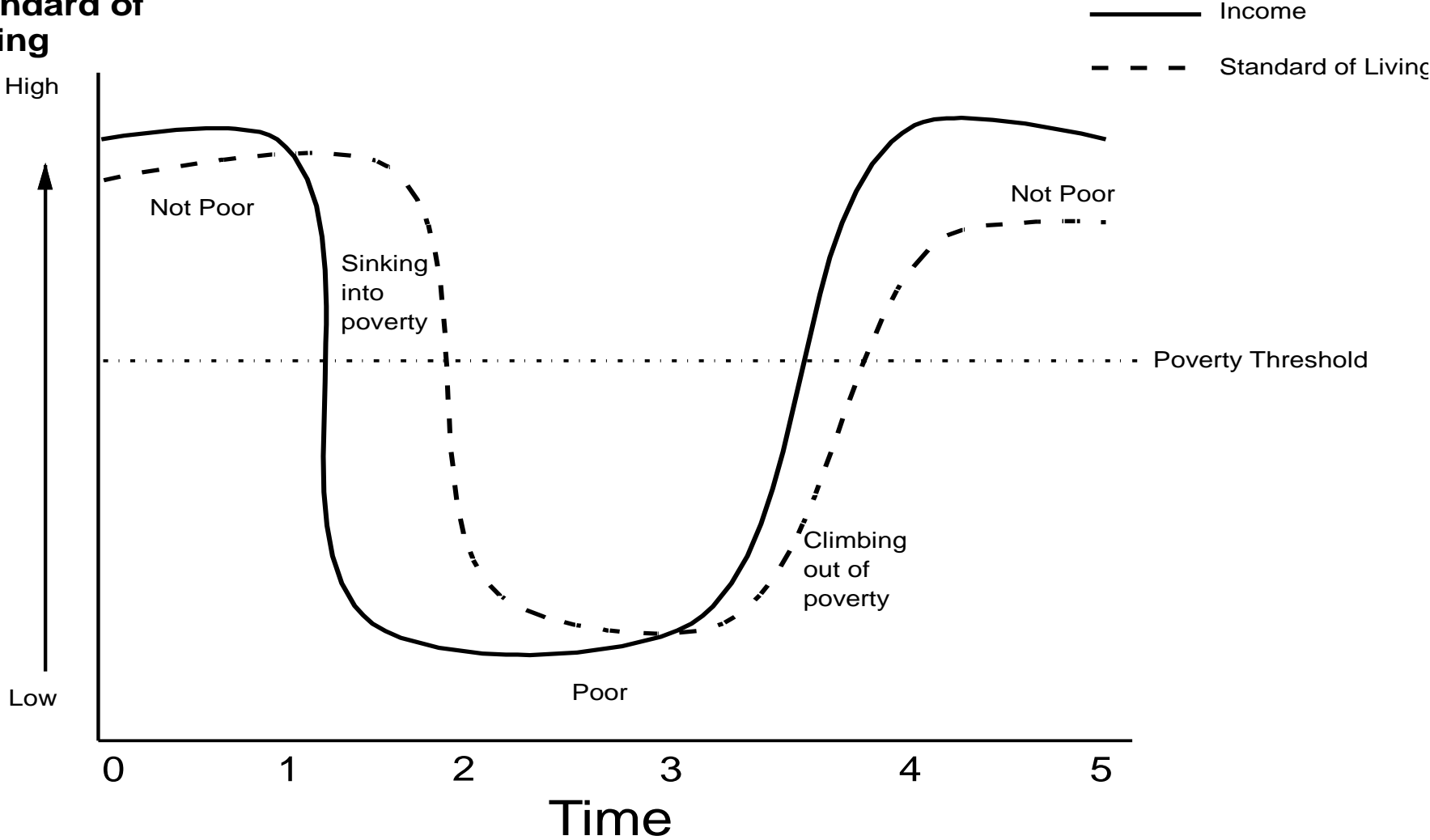
Peter Townsend's concept of dynamic poverty

“poverty is a dynamic, not a static concept...Our general theory, then, should be that individuals and families whose resources over time fall seriously short of the resources commanded by the average individual or family in the community in which they live . . . are in poverty.”

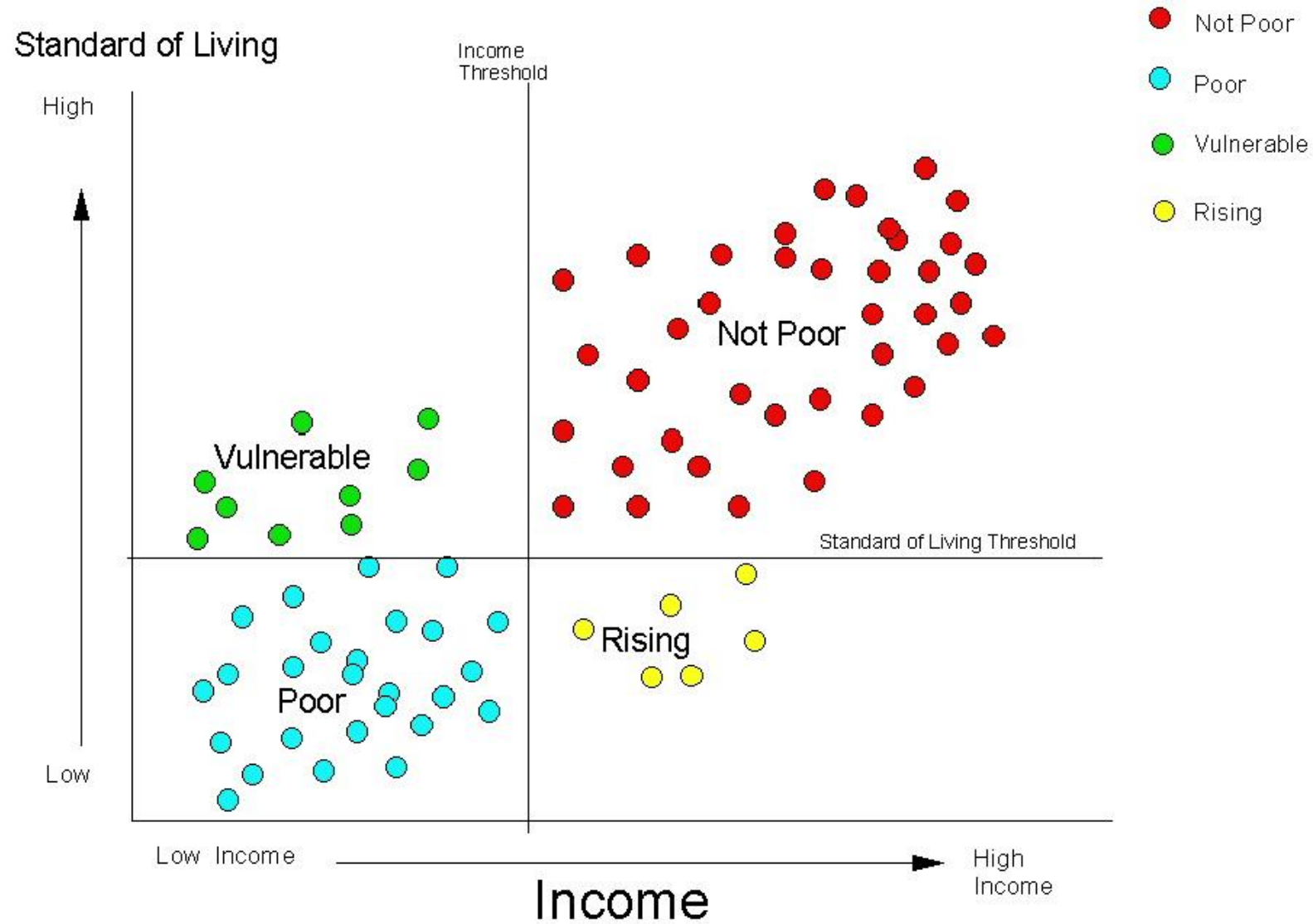
Townsend (1962, p 219)

Dynamics of poverty

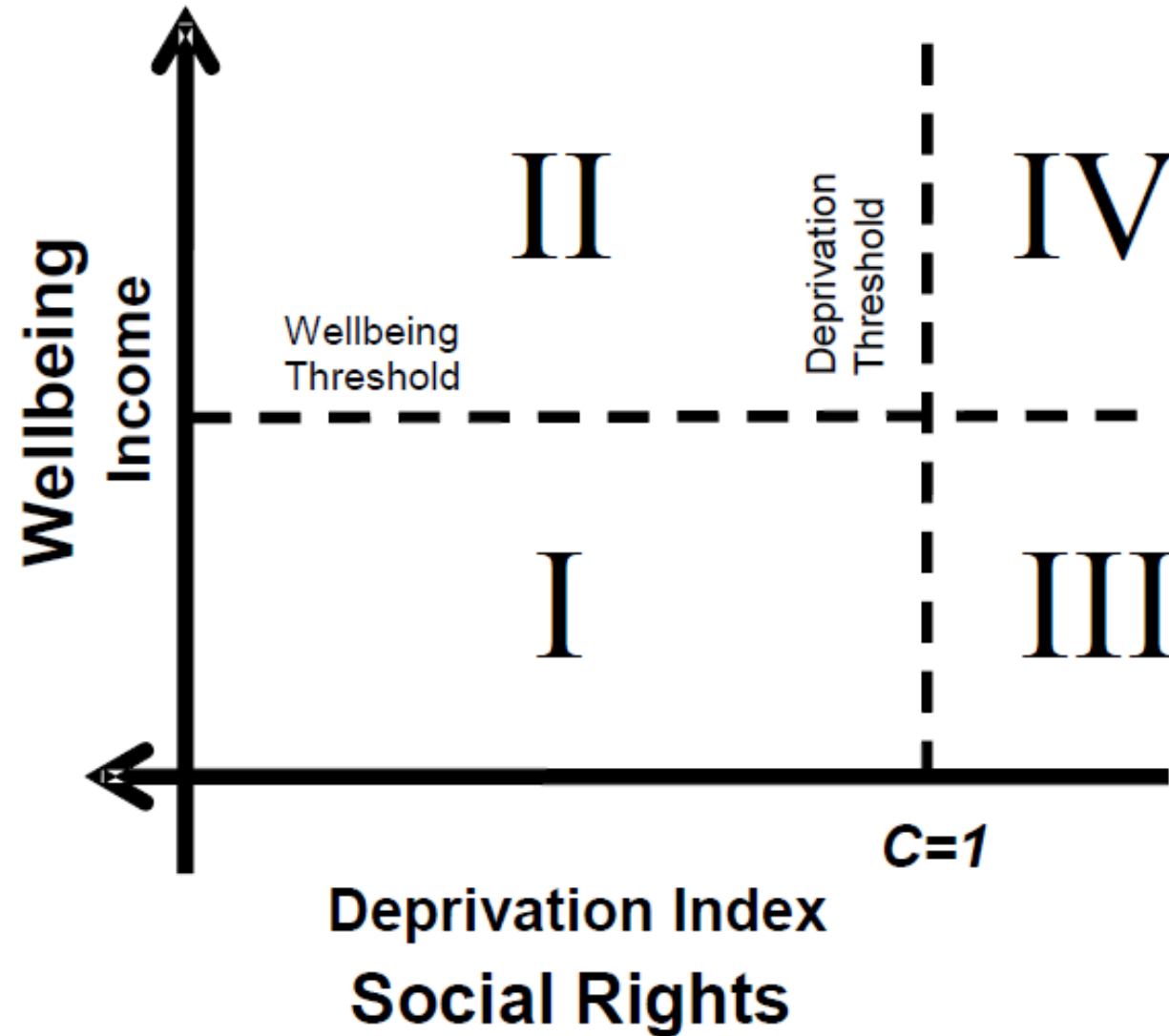
**Income and
Standard of
Living**



Poverty Groups



CONEVAL's Model of Multidimensional Poverty



The ‘best’ measures of ‘poverty’ depend on the policy purpose of the measurement

“The definition of the poverty indicator, of the poverty level, and of the unit of analysis are not purely technical matters. They involve judgements about the objectives of policy.” (Atkinson, 1990)

Does the Multidimensional Poverty Measure Need to be Updated and Revised?

The usefulness of a poverty measure (or the measurement of anything) depends on its;

- 1) **Suitability** – are the indicators of poverty socially and culturally appropriate?
- 2) **Validity** – do the indicators measure poverty or something else? i.e. does the measure suffer from large amounts of systematic error
- 3) **Reliability** – will you obtain the same result if you repeat the measurement, will the same groups of people be identified as being 'poor'? i.e. does the measure suffer from large amounts of random error

Validity of Social Deprivation and low income measures in Mexico

Social deprivations	Low socioeconomic stratum	Ethnicity (indigenous) or rurality	High level of Dependency ratio
1. Low income	7.6	2.6	2.4
2. Access to information	10.4	2.6	2.0
3. Access to basic services in the dwelling	6.9	3.4	1.2
4. Educational gap	6.5	1.8	1.0
5. Quality and living space of the dwelling	6.3	2.5	1.5
6. Access to food	4.4	1.5	1.4
7. Social security	3.0	1.8	0.8
8. Health care	1.1	1.0	0.8

Source: Yedith Guillén-Fernández (2017) *Multidimensional poverty measurement from a relative deprivation approach*, PhD thesis, analyses of the EDUMP 2007 survey

Declining Reliability of the Multidimensional Poverty Measure

Analysis	Years of the Survey / Statistics				
	2008	2010	2012	2014	2016
N of cases	235,066	235,423	212,674	216,209	257,647
Alpha	0.62	0.63	0.58	0.58	0.53
N of Items	7	7	7	7	7

Source: Yedith Guillén-Fernández (2017) *Multidimensional poverty measurement from a relative deprivation approach*, calculations based on the CONEVAL's (2017) indicators of multidimensional poverty, using the MCS of the ENIGH survey

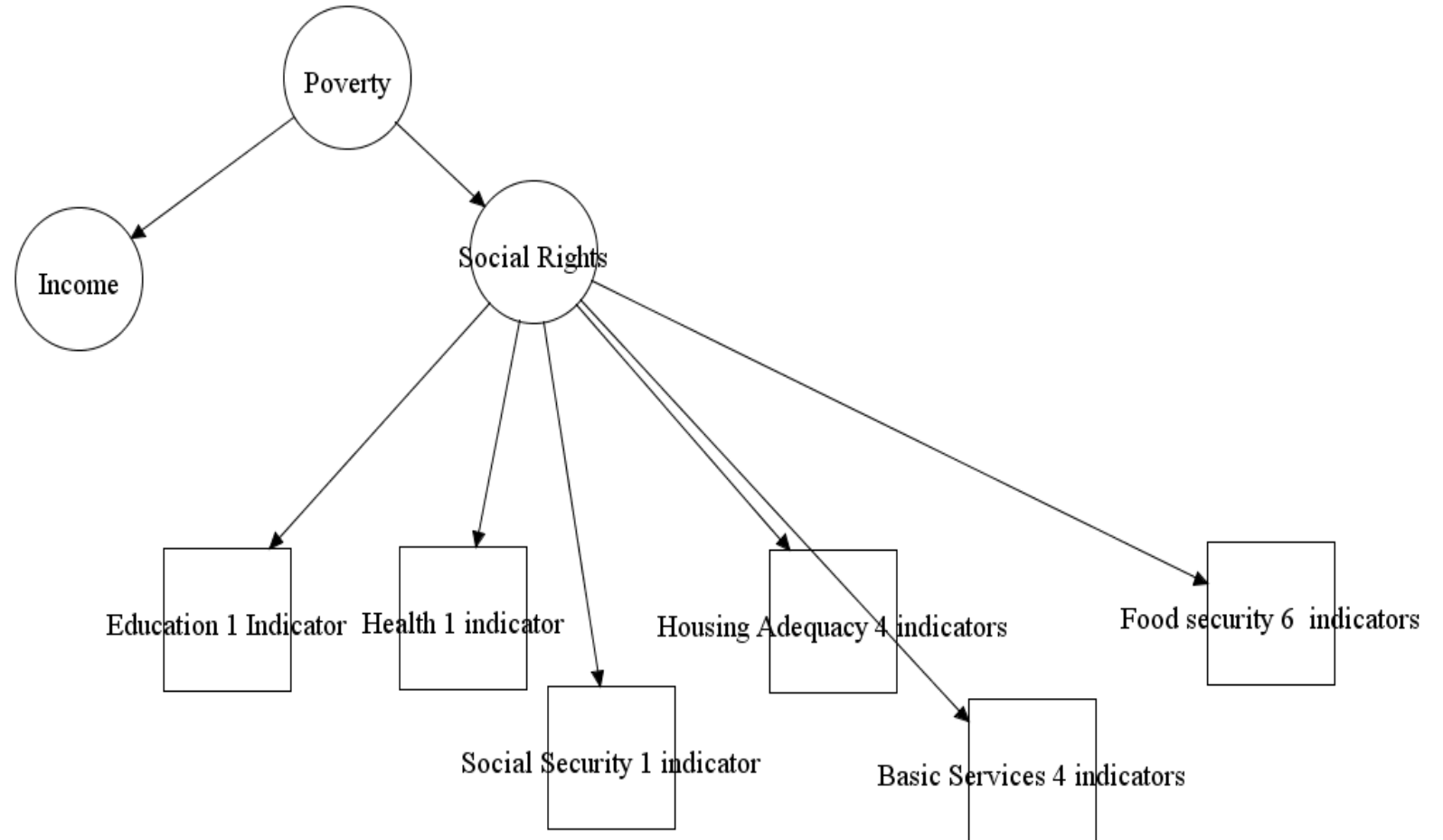
The CONEVAL Model of Multidimensional Poverty

This model aims to use as much information as possible

But not all dimensions are identified.

We could assume a higher order factor > **Social Rights**

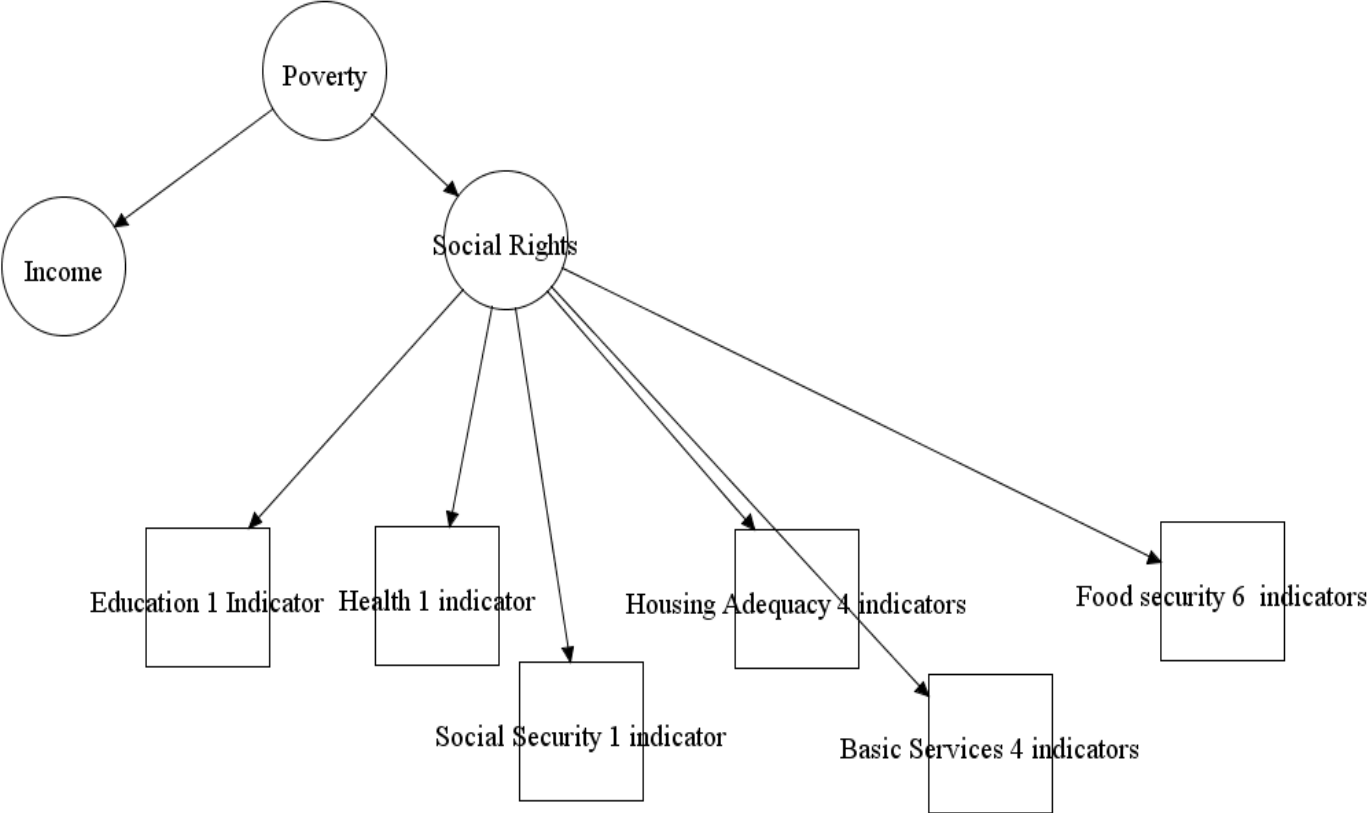
We estimate the model with the household indicators for food security



Methods

- Confirmatory Factor Analysis (CFA) is a Reflective Measurement Model where the indicators are causally related to the latent variable, i.e. when the latent variable changes (e.g. poverty gets better or worse) then the indicators will change (Brown, 2006). This approach has many useful properties, for example, the indicators are substitutable, it is not necessary to include all possible indicators to achieve a good measure of poverty and you do not need to use an identical set of indicators in each country/context, i.e. you can use the most appropriate set of indicators in each country and still achieve a comparable measurement of poverty
- Reliability statistics: Omega total, Hierarchical Omega
- Omega decomposition: Omega for each dimension and the contribution of each dimension to Omega total
- Item response theory

Results Model 1



If the indicators were not aggregated across the six dimensions. The upper bound reliability would be

Omega 2008: .92

Omega 2018: .88

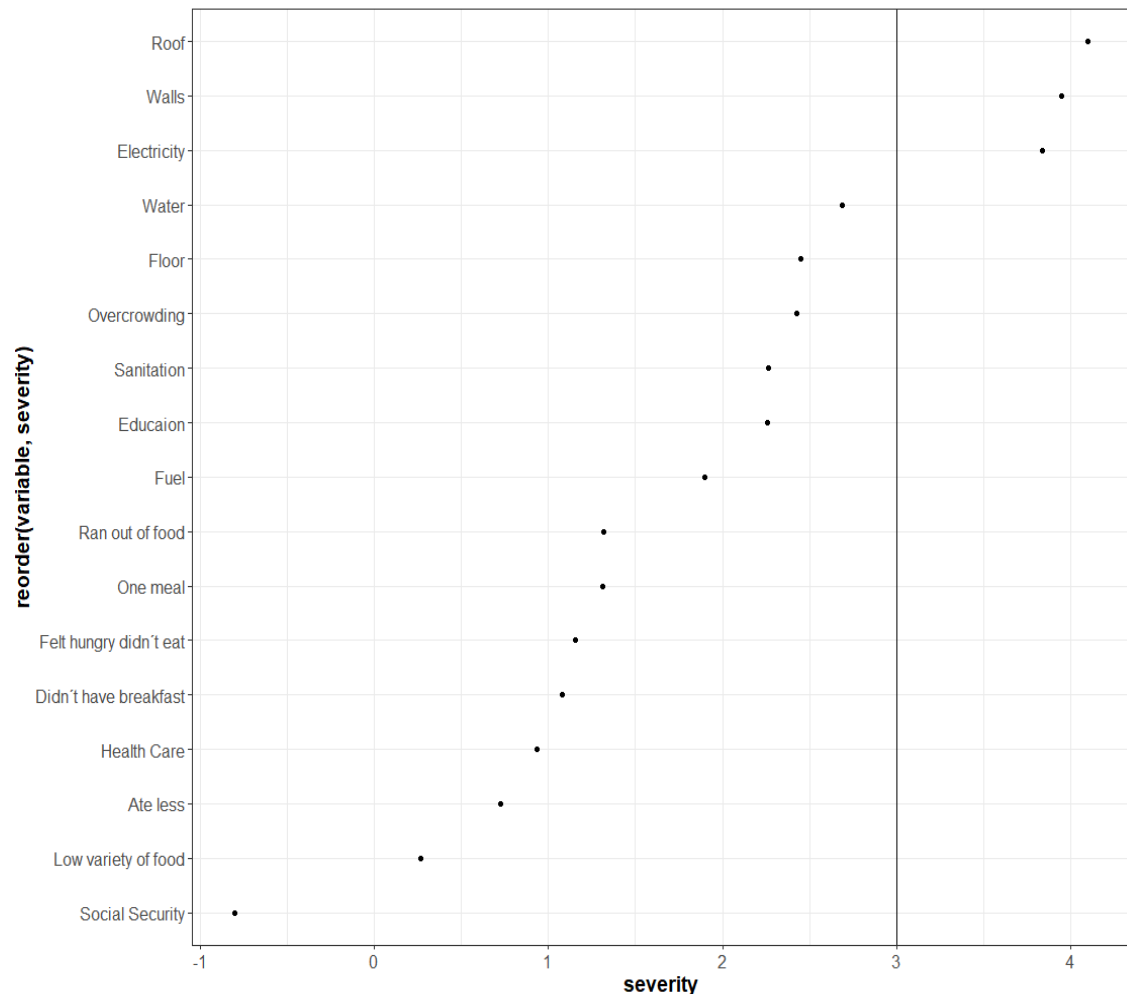
However, the food security indicators account by for most of the variance:

Omega explained by food security 2008: 71%

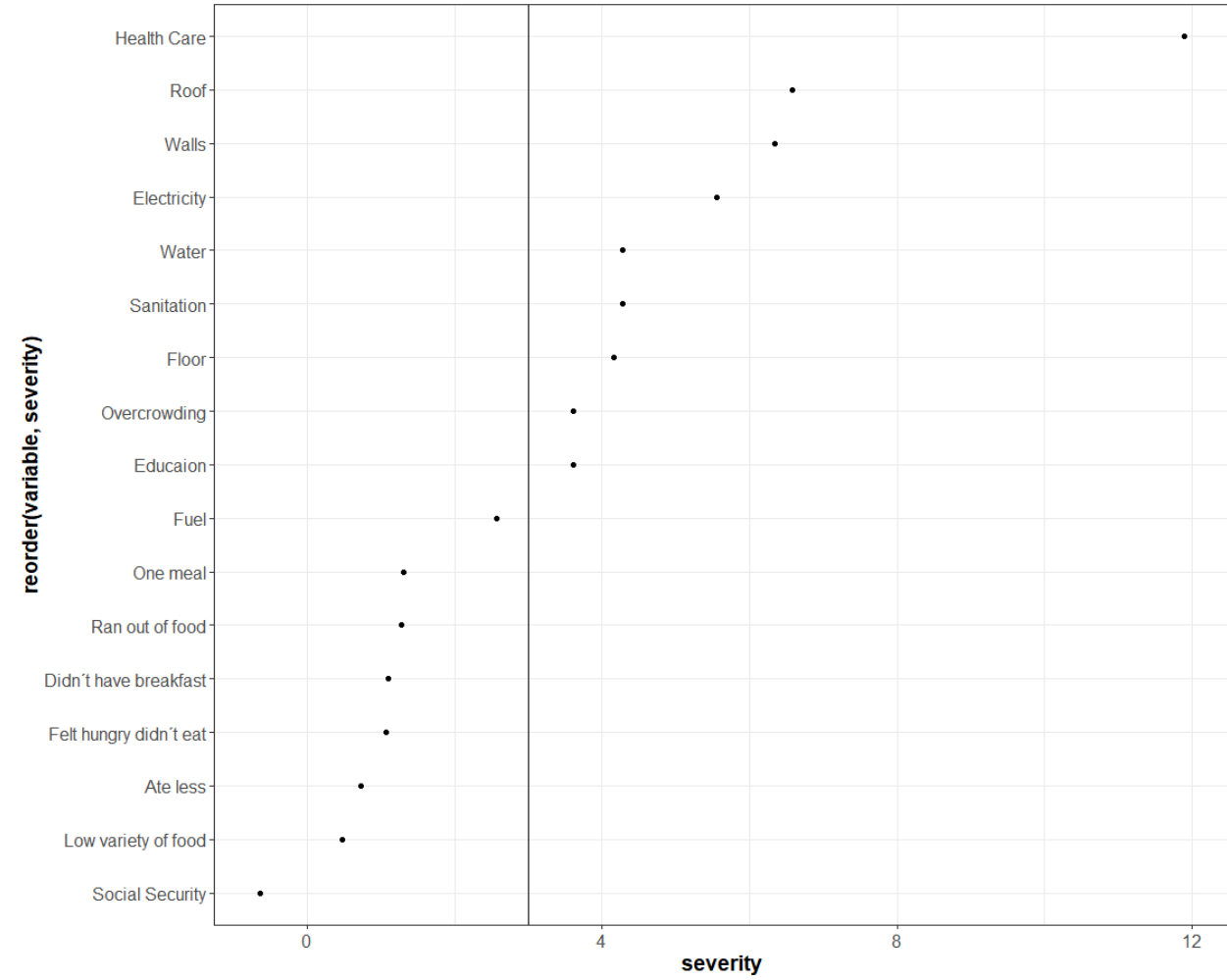
Omega explained by food security 2008: 75%

Results Model 1: 2P-IRT. Severity

2008

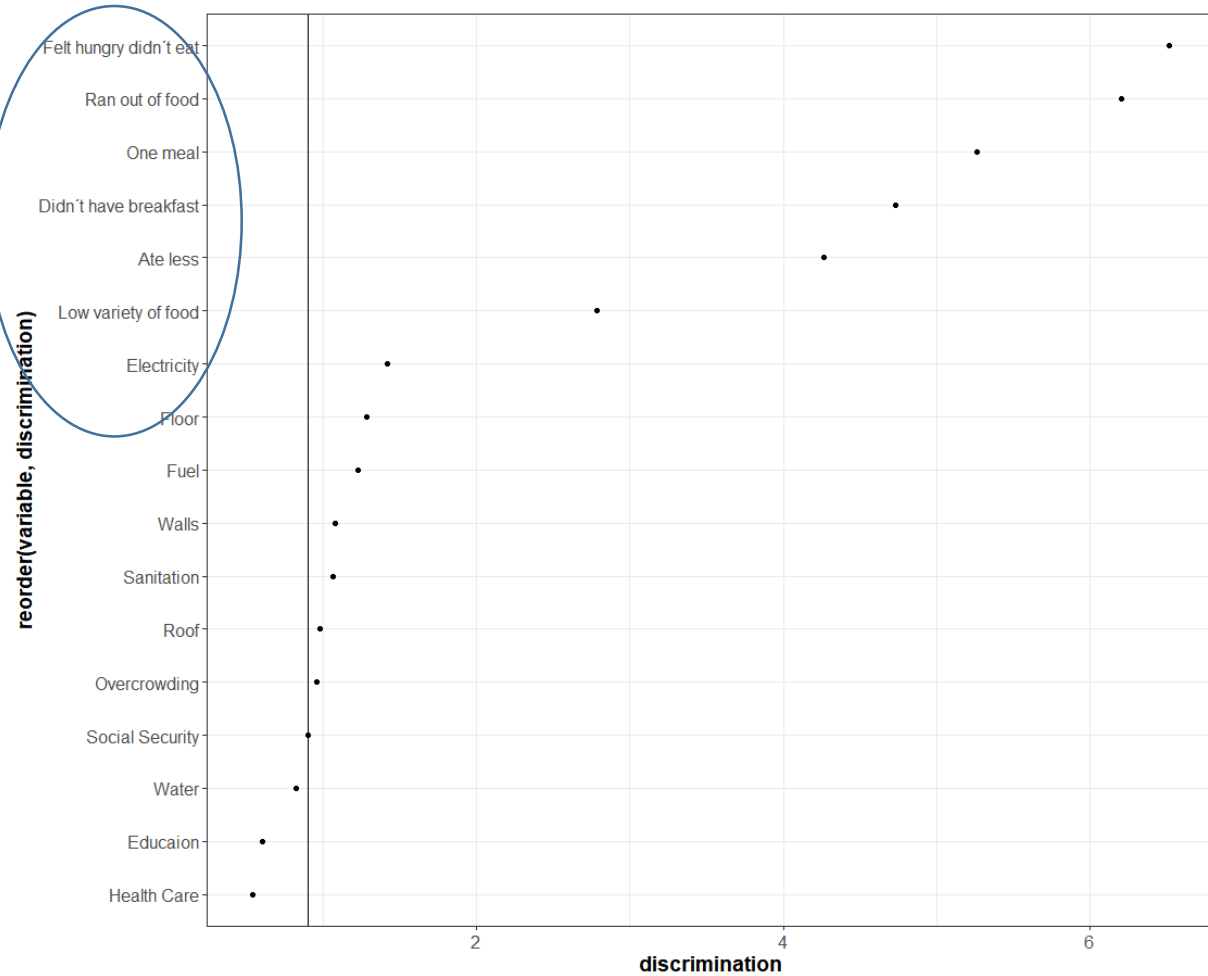


2018

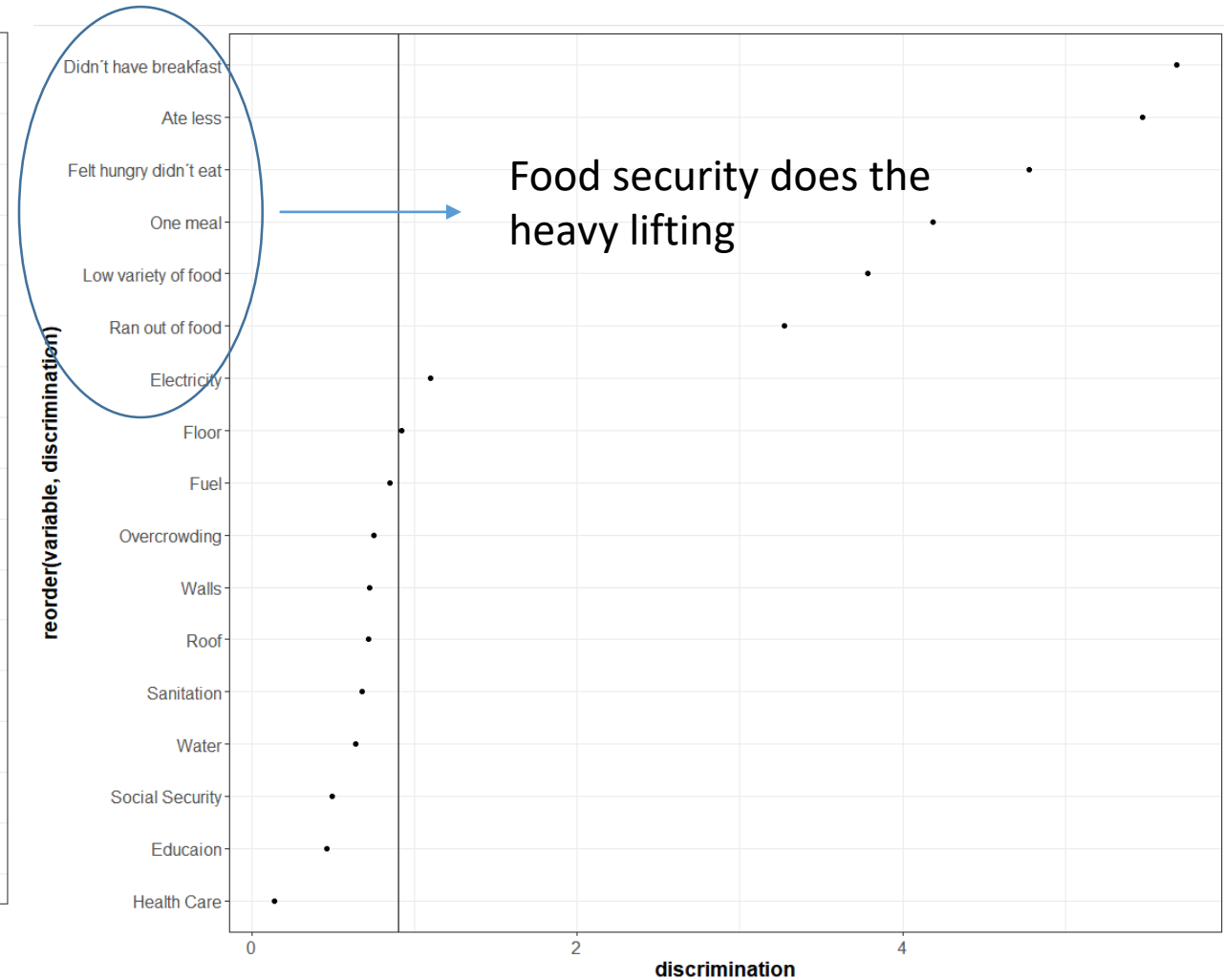


Results Model 1: 2P-IRT. Discrimination

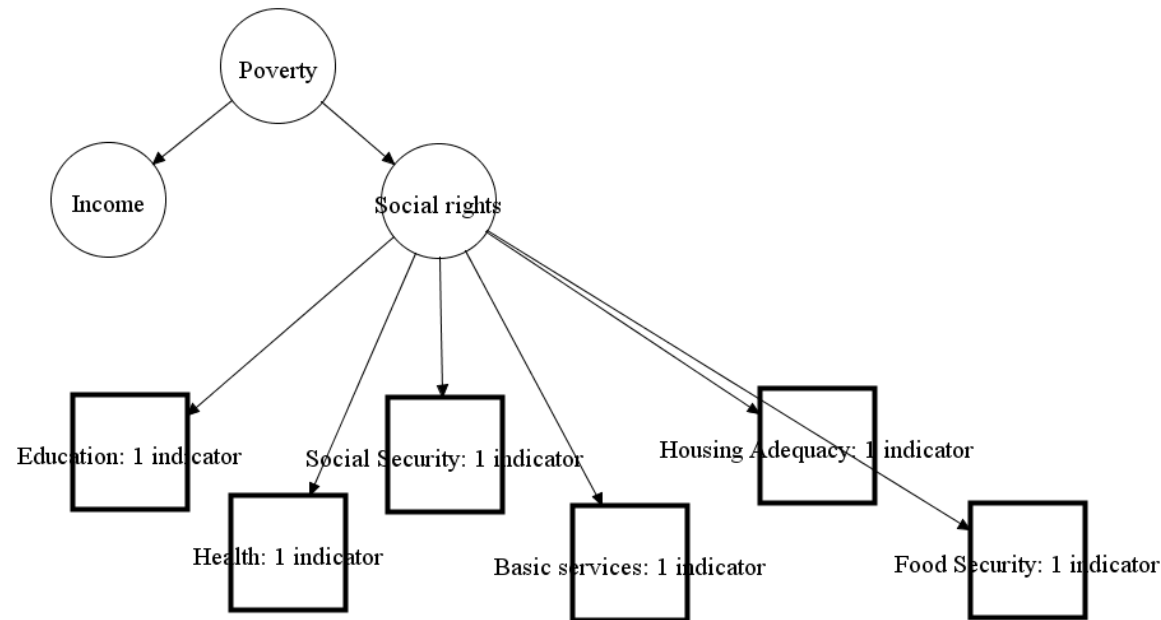
2008



2018



Reliability Results: CONEVAL Method



This model looks at reliability when aggregating the items into dimensions

This is the method used to calculate the current multidimensional poverty measure.

There is a decrease in reliability overtime and in 2018 it was a long way below the critical reliability thresholds ($\sim .8$).

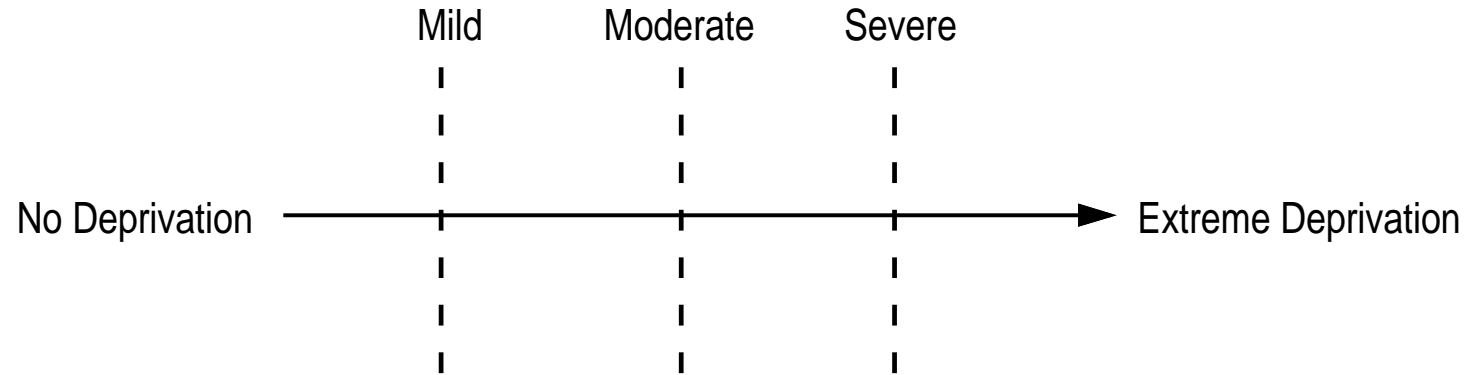
Omega 2008: .75

Omega 2018: .68

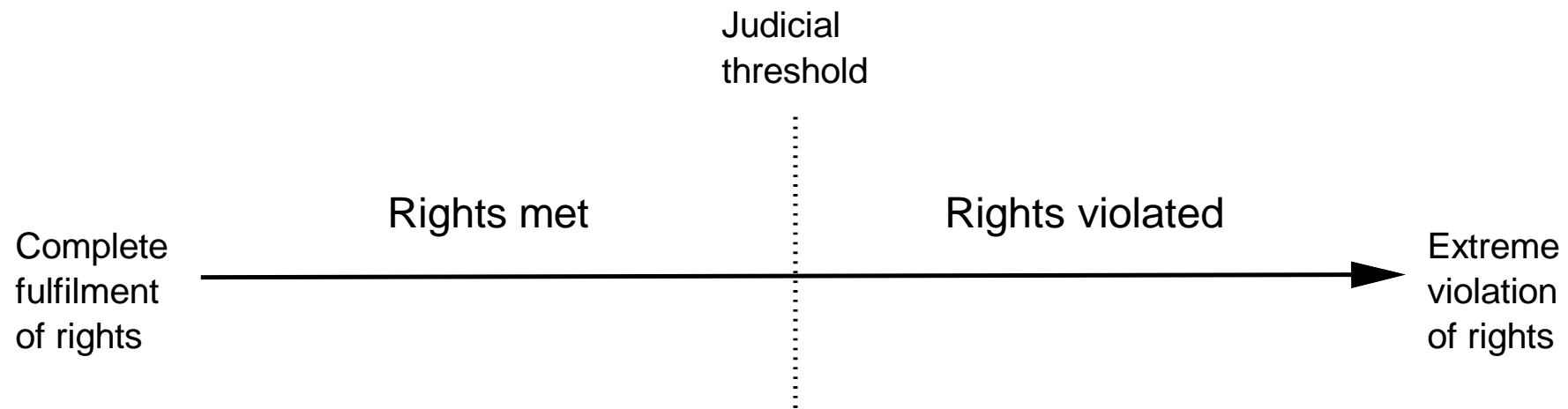
Because we aggregate food security its contribution to reliability diminishes

THRESHOLDS

Continuum of deprivation

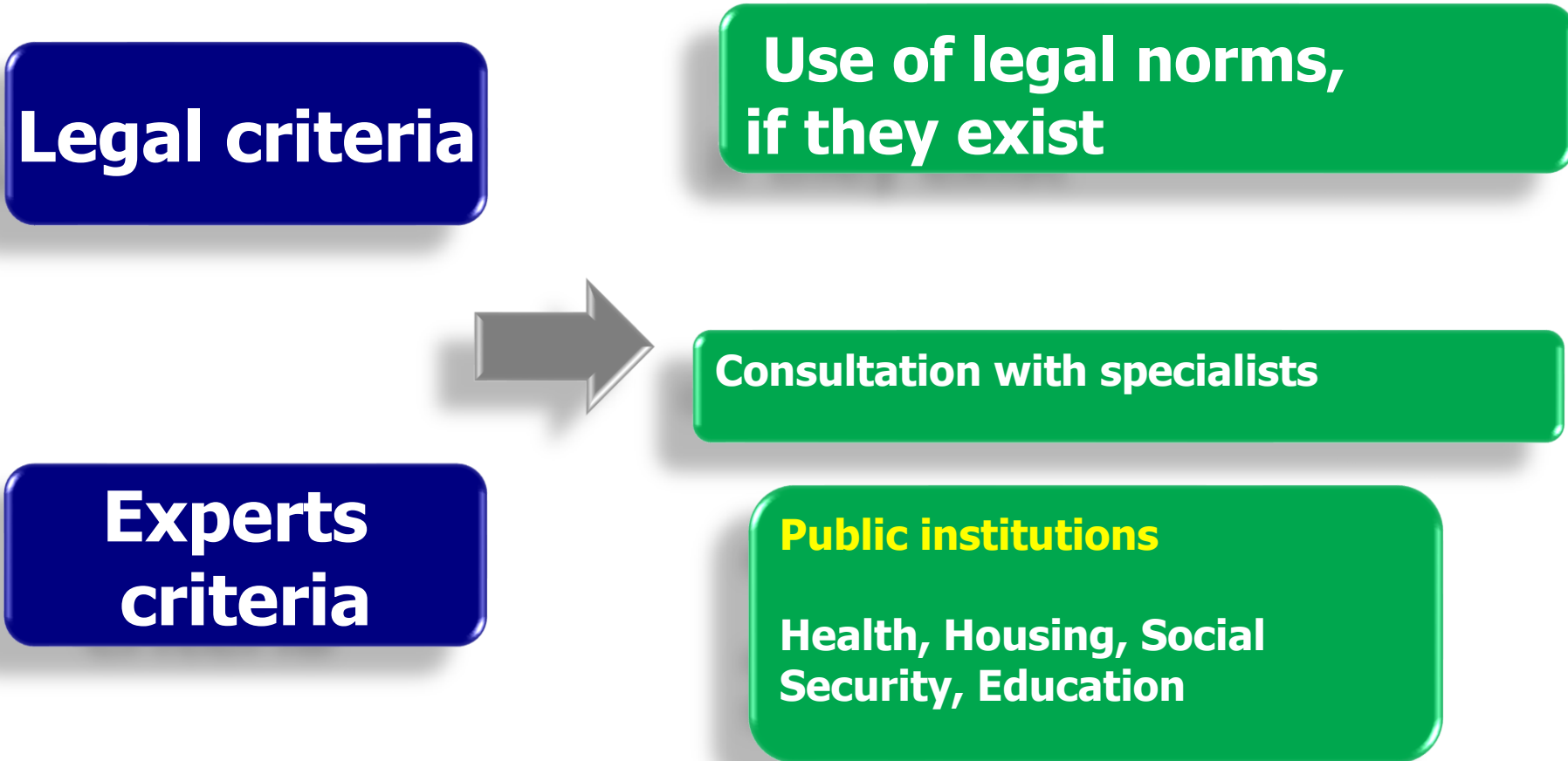


Continuum of Rights

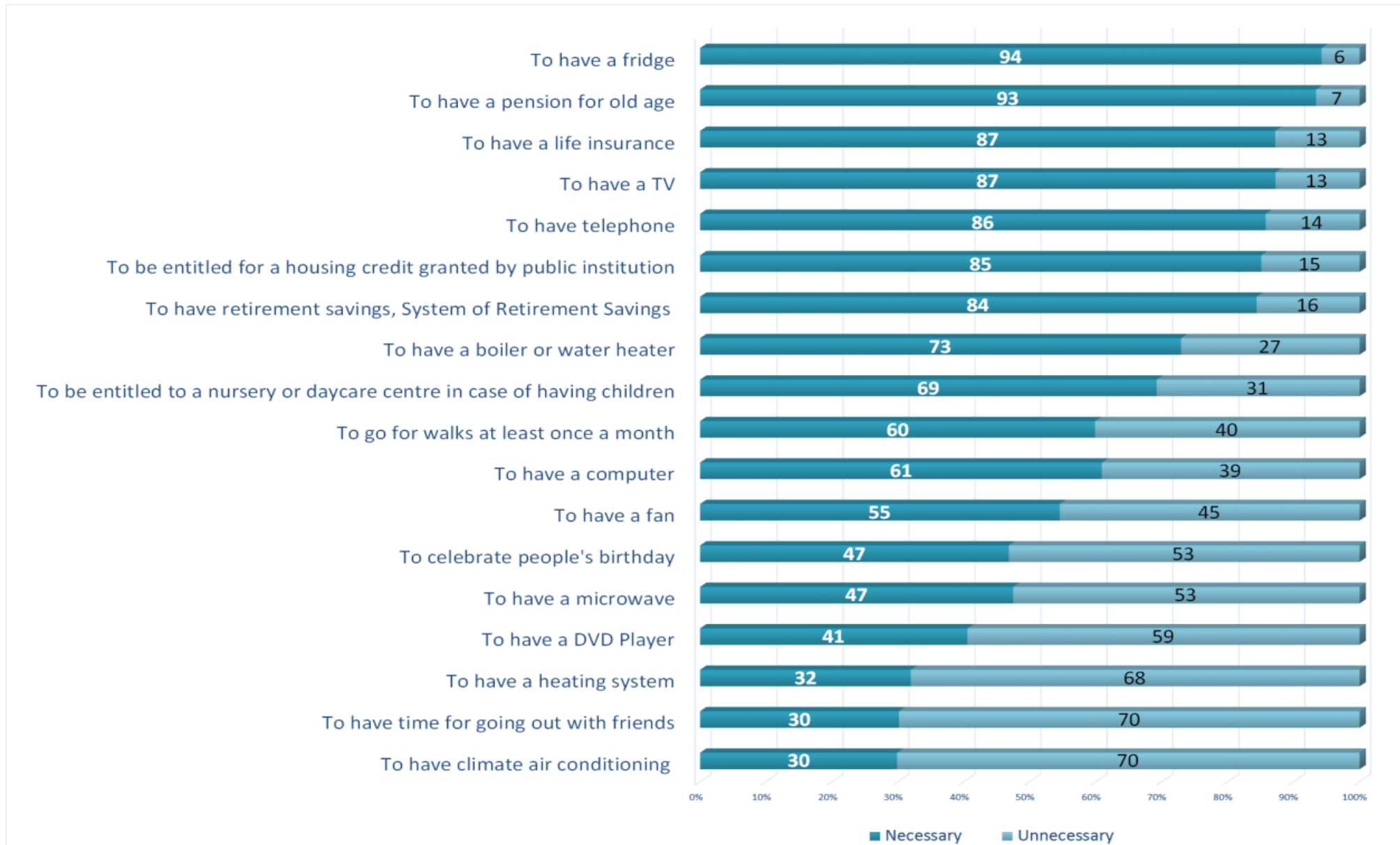


How to determine thresholds?

Social rights

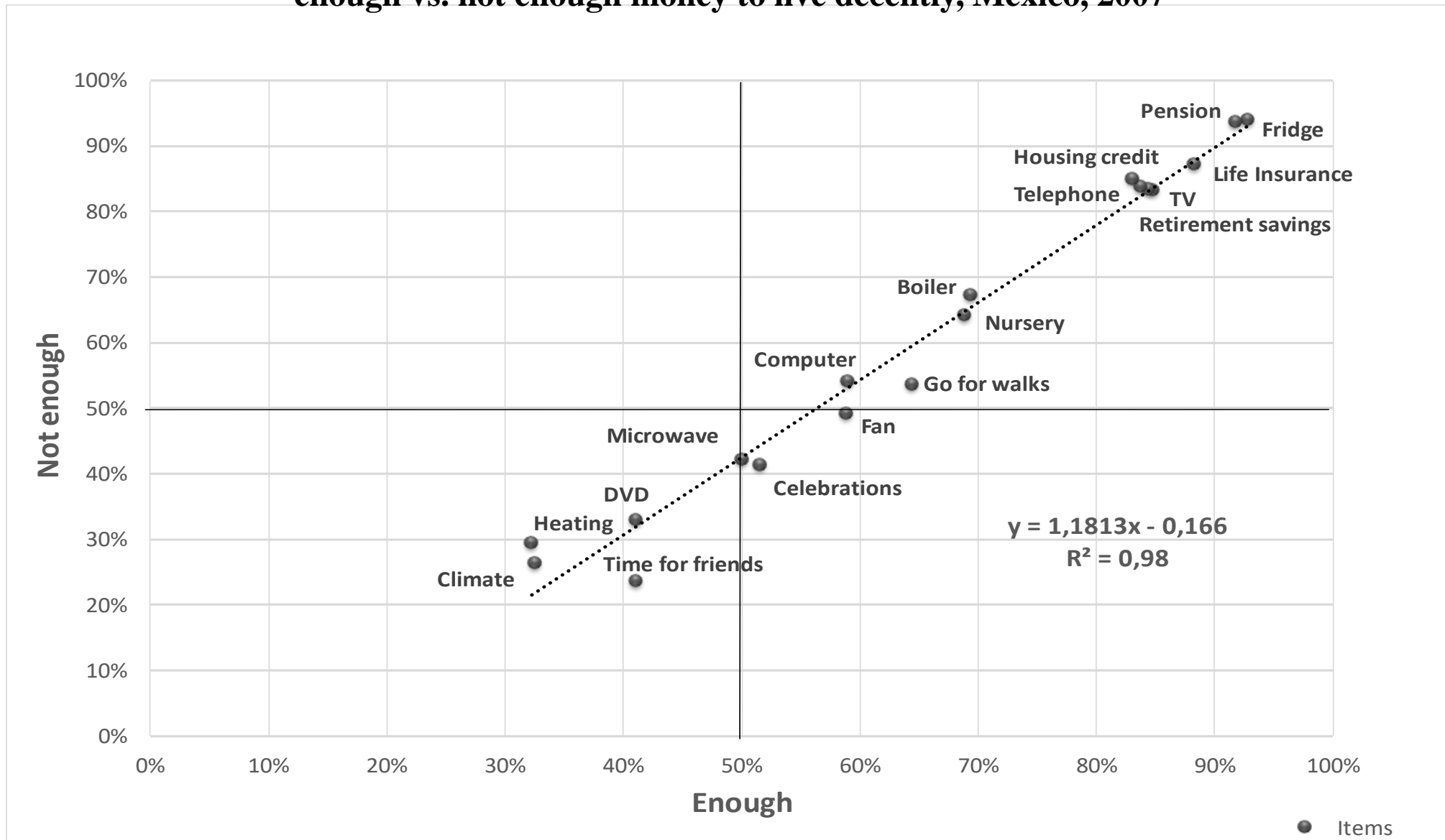


The Necessities of Life in Mexico in 2007

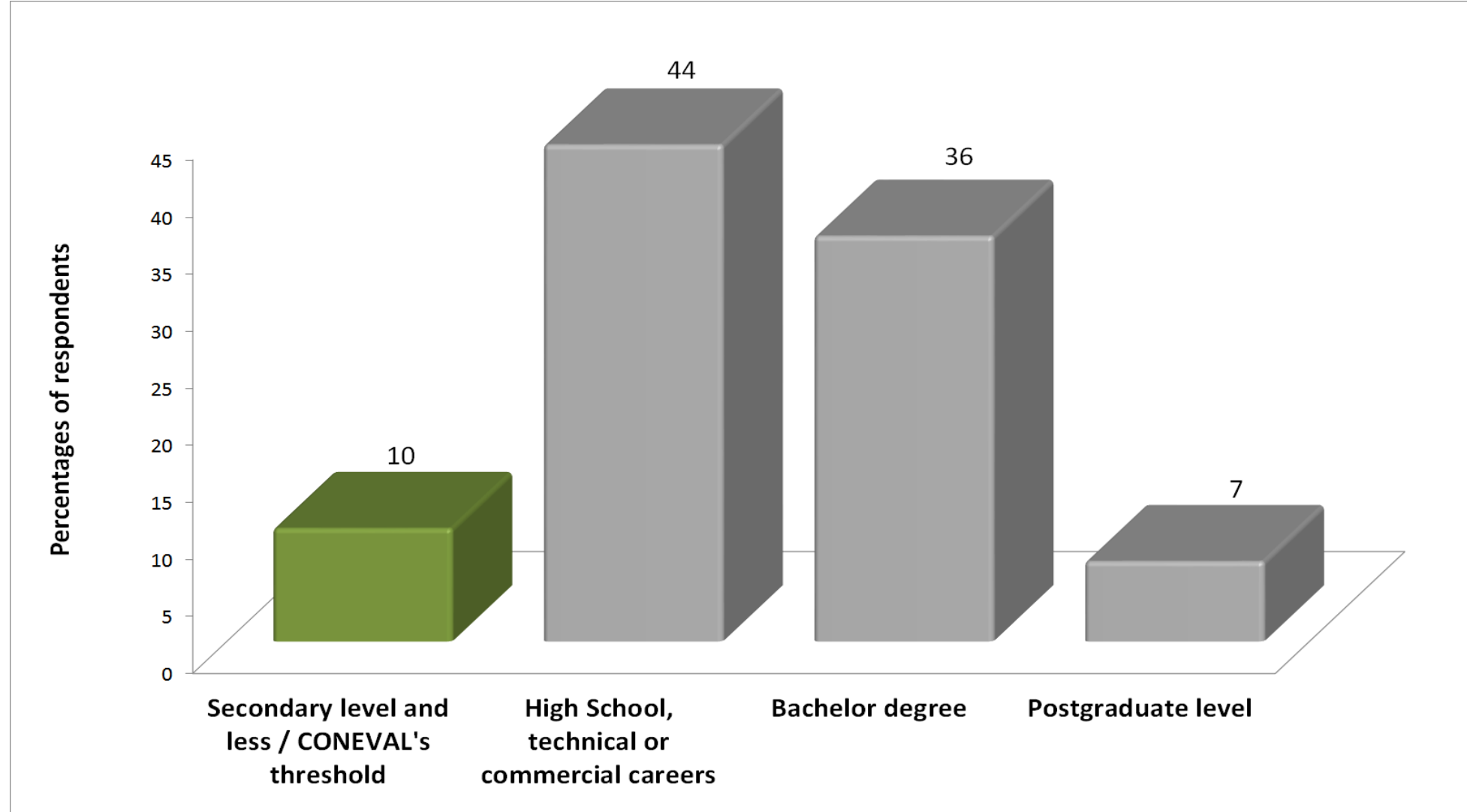


Source: Yedith Guillén-Fernández (2017) *Multidimensional poverty measurement from a relative deprivation approach*, PhD thesis, University of Bristol, analyses of the EDUMP 2007 survey.

Perceptions of social necessities by comparing households' with enough vs. not enough money to live decently, Mexico, 2007

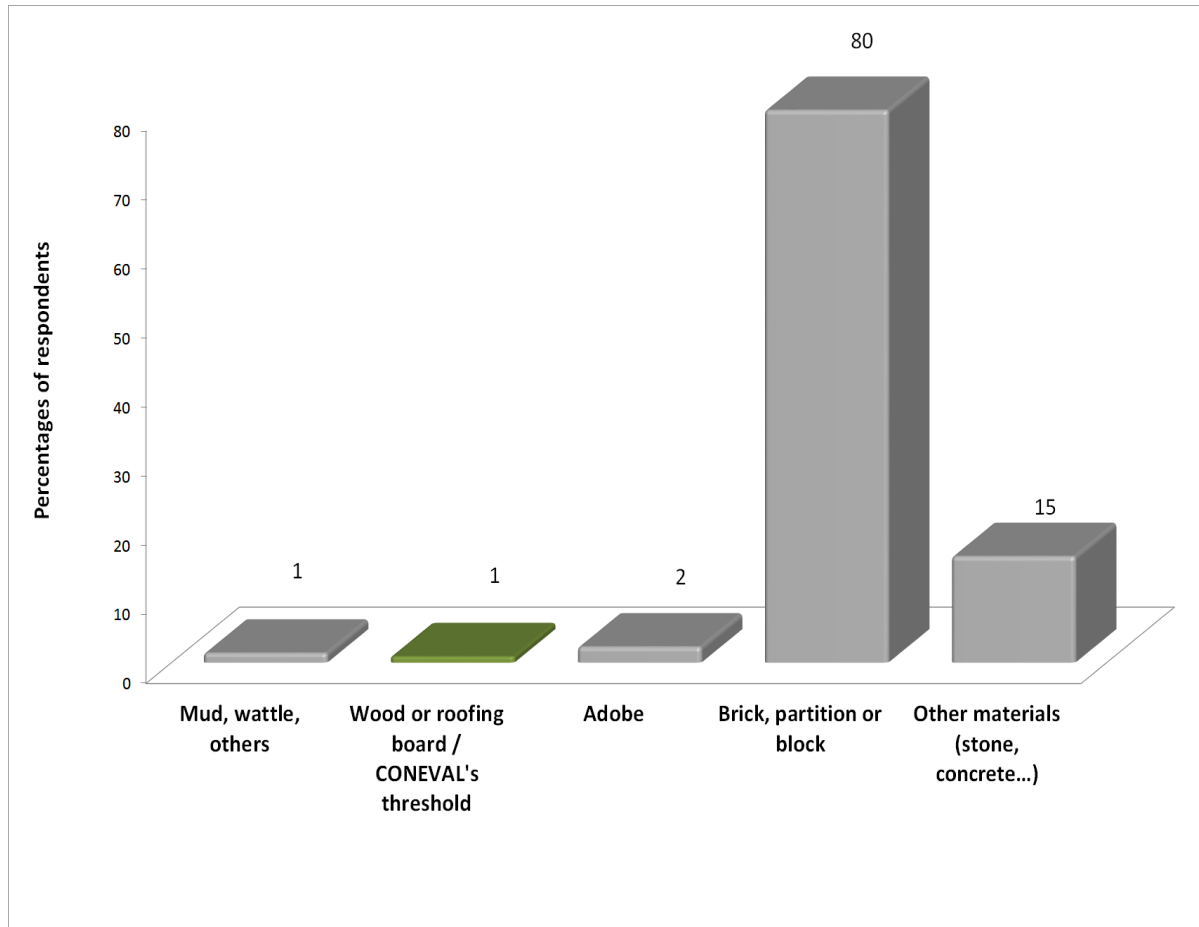


What is the minimum educational attainment that a person should have nowadays, to be able to live decently?

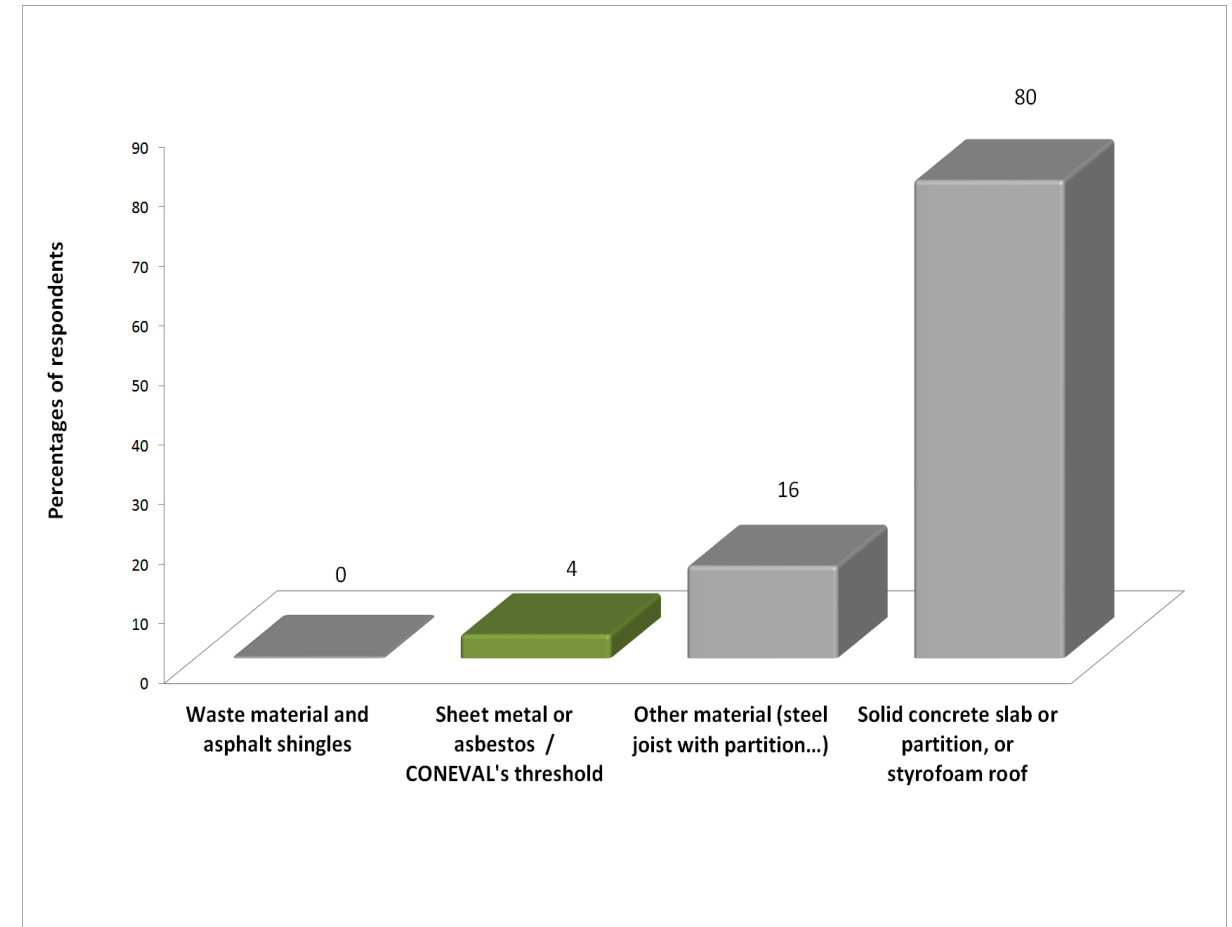


What are the necessary flooring, walls and roofing materials in order to live decently?

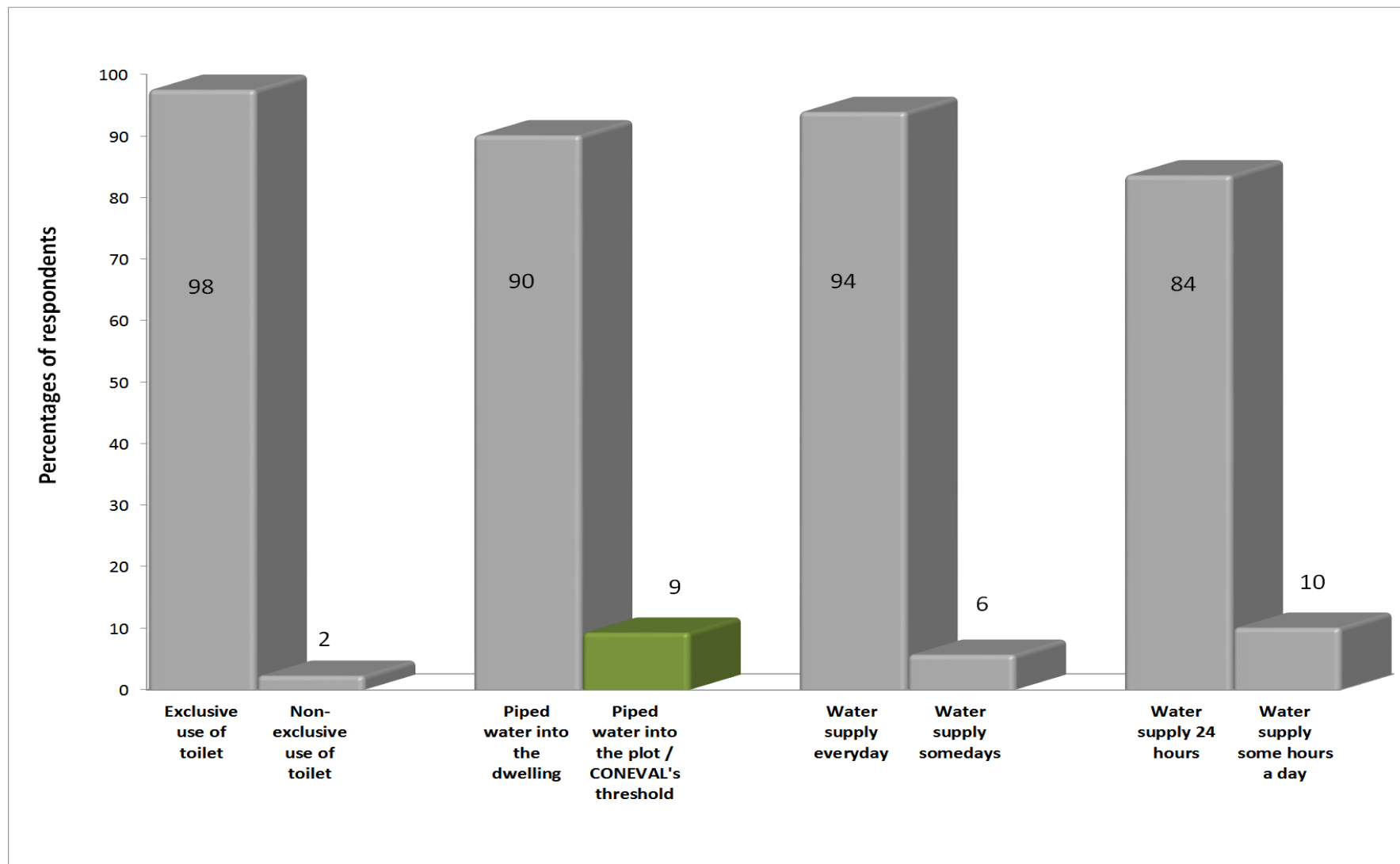
Wall



Roof



What are the necessary drainage and water supply services, in the dwelling, for people to live decently?



Source: Yedith Guillén-Fernández (2017) *Multidimensional poverty measurement from a relative deprivation approach*, PhD thesis, University of Bristol analyses of the EDUMP 2007 survey

**Percentage of people that experience social deprivation in Mexico, in 2012.
Consensual approach vs. CONEVAL's official estimates**

Social deprivation indicators	CONEVAL's estimates (%)	Consensual approach
1. Educational gap	19	21
2. Access to health care services	22	22
3. Access to social security	61	65
4. Quality and living space of the dwelling	14	35
5. Access to basic services in the dwelling	21	52
6. Access to food	23	23
7. Access to information	n/a	68

Source: Yedith Guillén-Fernández (2017) *Multidimensional poverty measurement from a relative deprivation approach*, PhD thesis, analyses of the EDUMP 2007 survey

Najera's Recommendations for changes to the Multidimensional Poverty Measure

1. Use a minimum social protection floor measure (legal access to social security + health care).
2. Use less severe thresholds for measuring deprivation of adequate roofing materials.
3. Use less severe thresholds for measuring wall material deprivation
4. Use of a less severe threshold for water deprivation e.g. access to water inside the house every day.
5. Drop the access to electricity indicator as it is an unreliable measure of poverty in Mexico
6. Include additional indicators of housing services e.g. garbage collection and sanitation (availability of a flush toilet in the home).
7. Use a less severe threshold for food deprivation.

Conclusions

- The reliability of the official measure of multidimensional poverty has decreased since 2008
- The decline in reliability is predicted by the theory of relative deprivation as societies progress and living conditions improve
- The housing and basic services indicators have been affected the most
- The increasingly low reliability of these dimensions affects the overall reliability of the multidimensional poverty measure
- Deprivation thresholds are likely to be more adequate when they correspond with the views of the majority of the Mexican people i.e. improved suitability
- The food security dimension is the most reliable
- There is an increasing need to update the multidimensional poverty measure

Conclusions

- 1) Develop improved measures of education deprivation which include the quality of education The 'real' education gap is not about how many years a child attended school but is concerned with what they learned.
- 2) Access to health services and social security are largely the same indicator. Better measures concerning actual health care access and the quality of these services are needed.
- 3) The access to Social Security indicator should be updated to measure access to the Minimum Social Protection Floor as per the ILO treaty
- 4) Adopt socially realistic thresholds for housing quality and housing services. Current thresholds are both unreliable and do not correspond well with the views of the Mexican people
- 5) Include new Constitutional social rights e.g. internet access
- 6) Develop child specific indicators to better reflect different needs of children and adults