# Demographic Analysis and Projection of PROSPERA's Beneficiary Population: Understanding the Demography of the Largest Cash-Transfer Program in Mexico

Víctor Manuel García Guerrero<sup>1</sup> Center for Demographic, Urban and Environmental Studies El Colegio de México

#### **Short Abstract**

The cash-transfer program PROSPERA (before known as *Solidaridad*, *Progresa*, and *Oportunidades*) has been subject to a large number of program evaluations and studies, but a demographic analysis of its past, current and prospective beneficiary population has never been carried out. The aim of this paper is to fill this gap in the literature by generating a prospective analysis of the demographic structure of its roster of beneficiaries. For this, we generated different scenarios in terms of coverage (considering entering and exiting the program), as well as the demographic evolution of who is currently enrolled in the program, using the Household Survey of Socioeconomic Characteristics (ENCASEH), the 2016 National Survey of Income and Expenditures (ENIGH 2016), and the roster of beneficiaries of PROSPERA. Findings show an increase of beneficiaries in older ages. The implications of a larger and older population in poverty, mainly the impact in health services, will be discussed.

### Introduction

Although the cash-transfer program PROSPERA (before known as *Solidaridad*, *Progresa*, and *Oportunidades*) has been subject to a large number of program evaluations and studies, a demographic analysis of its past, current and prospective beneficiary population has never been carried out. The aim of this paper is to fill in this gap by generating a prospective analysis of the demographic structure of the roster of beneficiaries of the program. For this, we generated different scenarios in terms of coverage (considering entering and exiting the program), as well as the demographic evolution of who is currently enrolled in the program.

### **Background**

The Social Inclusion Program (PROSPERA) developed and operated by the Mexican Social Development Ministry (SEDESOL) is a program with the aim of strengthening the effective fulfillment of social rights that empower people in poverty, through actions that expand their alimentary capacities, health and education, and improve their access to other dimensions of well-being. To achieve its objective, PROSPERA provides beneficiary households with monetary support in two assistance schemes:

<sup>&</sup>lt;sup>1</sup> Carretera Picacho Ajusco 20, Col. Ampliación Fuentes del Pedregal, Del. Tlalpan, C.P. 14110, CDMX. Email: vmgarcia@colmex.mx

- 1. Conditional cash transfers to the family when it fulfills its co-responsibilities about health and education components.
- 2. Non-conditional cash transfers, in which families receive only the support and benefits of the food and entailment components without any conditionality.

The predecessor programs to PROSPERA are: Solidaridad (prior to 1997), Progresa (from 1997 to 2002) and Oportunidades (from 2002 to 2014). PROSPERA is an inter-institutional program involving the Ministry of Public Education (SEP), the Ministry of Health (SS), the Mexican Institute of Social Security (IMSS), SEDESOL and State governments that operate the health and education services. The support from this program increased over time: whereas in 1997 it benefited nearly 300 thousand families in rural areas, it expanded to benefit today almost 7 million families throughout the country.

Various studies have highlighted the positive impacts of the program, not only in alleviating poverty, but in increasing access to health and education services that translate later in better well-being. For example, according to the results of the National Survey of Household Income and Expenditures in 2014 (ENIGH 2014), if the program did not exist, there would have been 5.6% more population in extreme poverty, and the intensity of the extreme poverty would have been 9.5% higher. However, after twenty years of existence, the implementation of the program has acquired a certain degree of complexity, and the profile of poverty in Mexico has changed. In this context, the National Coordination of PROSPERA put forward the need for studies and evaluation that take into account the twenty years of experience of the program. Thus, this research project fits in this context with the need of a deep understanding of the demographic past of the program, in order to develop a prospective view of the future composition of the roster of beneficiaries.

### **Data and Methods**

Two main data sources are used in the analysis: The Household Survey of Socioeconomic Characteristics (ENCASEH), and the roster of beneficiaries of the PROSPERA Program of Social inclusion. In addition to this data, we use data from the 2015 Intercensal Survey, a mid-decennial census, as well as data from the Demographic Conciliation of 1990-2015 and the 2016-2050 Population Projections generated by the National Population Council (CONAPO).

To project the roster of beneficiaries, we use an extended method of the basic demographic equation taking into account age cohort and rate of incorporation into the PROSPERA program by age and sex. Before this, we study the quality of the data from the roster comparing the age and sex composition from ENCASEH, the survey used for its impact evaluation, as well as the general Mexican population, using data from the 2015 Intercensal Survey. Next, using time series analysis, the incorporation and exit rates into/out of the program are forecasted from 2016 to 2026.

## **Preliminary results**

Figure 1 shows the age and sex distribution of the beneficiaries in 1997 and 2016. It illustrates the increase of adult beneficiaries and a reduction of very young children. An analysis of the age distribution of beneficiaries showed an unexpected number (XXXX) of centenaries, aged 110 and older (see Figure 2), that show problems with the roster and potential budget that has been paid to individuals that might no longer live. Results from the population projections are shown in Figures 3,4, 5, and 6. The projected number of beneficiaries is expected to grow, but at a slower rate than it has been growing in the last ten years, both among men and women. Overall, results suggest that the roster of beneficiaries will grow in adult ages, rather than among children and elder (Figure 4).

The aging process of the population that is beneficiary of PROSPERA brings several challenges and implications, specially associated with health problems that might have large impacts impoverishing an already poor population. Although this population is covered by this cash-transfer programs, other programs might be needed to address these issues.

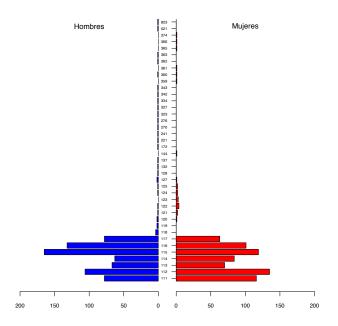
Hombres

Hom

Figure 1 Age and sex distribution of PROSPERA beneficiaries, 1997 and 2016

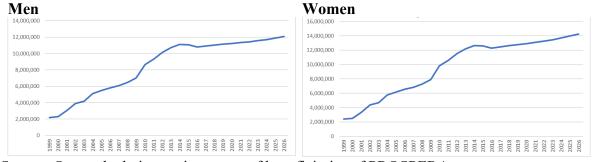
Source: Own calculations using roster of beneficiaries of PROSPERA

Figure 2. Age and sex distribution of PROSPERA beneficiaries of 110 years and older



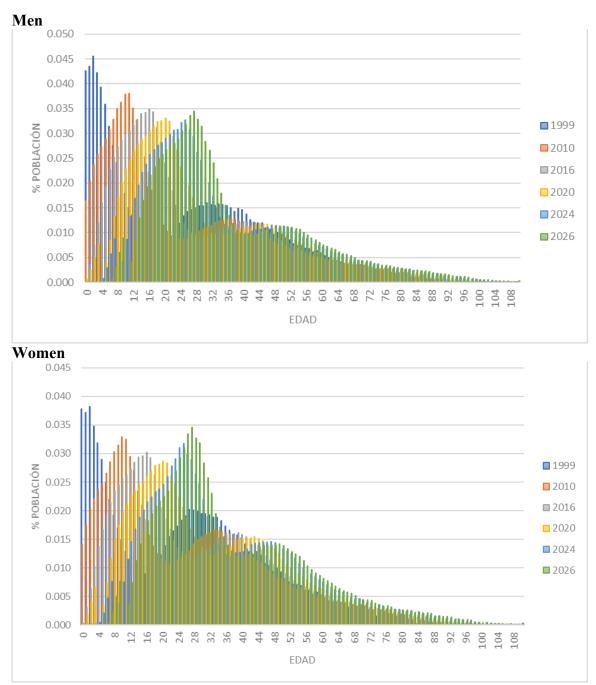
Source: Own calculations using roster of beneficiaries of PROSPERA

Figure 3. Previous and projected population of PROSPERA beneficiaries by sex



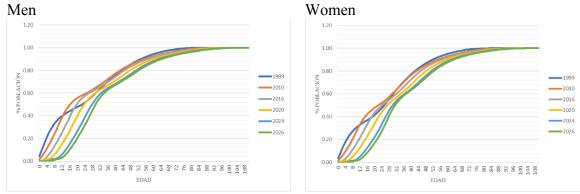
Source: Own calculations using roster of beneficiaries of PROSPERA

Figure 4. Previous and projected age distribution of PROSPERA beneficiaries by sex



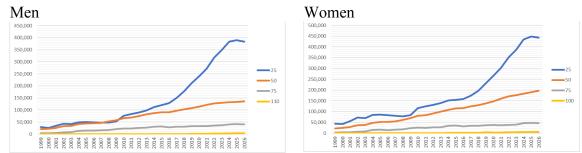
Source: Own calculations using roster of beneficiaries of PROSPERA

Figure 5. Cumulated distribution of beneficiaries by age



Source: Own calculations using roster of beneficiaries of PROSPERA

Figure 6. Population growth of beneficiaries by age



Source: Own calculations using roster of beneficiaries of PROSPERA

### References

Bennett, NG & S. Horiuchi (1981). "Estimating the Completeness of Death Registration in a Closed Population", Population Index, 47(2):207-21

García Guerrero, VM (2014). *Projections and Population Policies in Mexico*. Centro de Estudios Demográficos, Urbanos y Ambientales, El Colegio de México A.C., México.

Gómez, Cecilia (2018). Agent Based Models for estimating and forecasting the mortality of the pensions systems in Mexico, Master Thesis in Demography, Centro de Estudios Demográficos, Urbanos y Ambientales, El Colegio de México A.C.

INEGI (2016). Intercensal Survey 2015. Available at <a href="http://www.inegi.org.mx">http://www.inegi.org.mx</a>

INEGI (2017). National Survey of Incomes and Expenditures ENIGH-2016. Available at <a href="http://www.inegi.org.mx">http://www.inegi.org.mx</a>

- Maier H, Gampe J, Jeune B, Robine JM and Vaupel JW (2010). Supercentenarians Demographic Research Monographs 7
- Max Plank Institute for Demographic Research (2018). *International Database on Longevity*. Disponible en https://www.supercentenarians.org/
- Preston, S. & A. Coale (1982). "Age Structure, Growth, Attrition and Accession: A New Synthesis", Population Index 48(2):217-59
- Preston, S., P. Heuveline & M. Guillot (2001). Demography. Measuring and Modeling Population Processes, Blackwell, Pu., E.U.A.
- R Core Team (2017). *R: A language and environment for statistical computing*. R Foundation for Statistical Computing, Vienna, Austria. URL <a href="https://www.R-project.org/">https://www.R-project.org/</a>