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Family structure, living arrangements and income inequality in Guatemala between 2000 and 2014*

Estructura familiar, arreglos de vivienda y la desigualdad del ingreso en Guatemala entre 2000 y 2014

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Abstract

This paper explores the role of changes in family structure and living arrangements on shaping income distribution in Guatemala using data from the National Survey of Living Conditions (ENCOVI, 2000 and 2014). Specifically, a 12 groups household typology including a gender dimension is proposed, which proved to be useful to illustrate the diversity of Guatemalan households, and how they have changed over these 14 years. We observe modest but relevant trends such as a decline of couples with children

Keywords

Family structure
Living arrangements
Income inequality
Guatemala

* Una versión preliminar de este artículo corresponde al primer capítulo de la tesis Dimensions of gender inequality in Central America: family, work, and income, la cual fue presentada por Ilya Espino para obtener el título de Doctor en Economía por la Universidad Federal de Minas Gerais en 2020.

under 15, an increase in three-generation families, and an increase in lone-person households and single-parent families. We employ a decomposition analysis. The results suggest that distance “within-groups” matter more on income household distribution. Therefore, trends in family structure and living arrangements associated with the decline of fertility rates and aging do not seem to have contributed to changes in income inequality experienced by Guatemala from 2000 to 2014.

Resumen

Este artículo explora el papel de los cambios en la estructura familiar y los arreglos de vivienda en la configuración de la distribución del ingreso en Guatemala utilizando datos de la Encuesta Nacional de Condiciones de Vida (ENCOVI), 2000 y 2014. Para tal fin, se propone una tipología de hogares de 12 grupos que incluye una dimensión de género, la cual resultó ser útil para mostrar la diversidad de los hogares guatemaltecos y cómo los mismos han cambiado durante estos 14 años. Se observan modestas pero relevantes tendencias, como una disminución de las parejas con hijos menores de 15 años, un aumento de las familias de tres generaciones y un aumento de los hogares unipersonales y las familias monoparentales. Los resultados sugieren que la distancia “dentro de los grupos” es más importante en la distribución del ingreso de los hogares. En consecuencia, las tendencias en la estructura familiar y los arreglos de vivienda asociados con la disminución de las tasas de fecundidad y el envejecimiento de la población, no parecen haber contribuido a los cambios en la desigualdad del ingreso experimentado por Guatemala durante el período 2000-2014.

Palabras Clave

Estructura familiar
Arreglos de vivienda
Desigualdad del
ingreso
Guatemala

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Introduction

Latin American countries, in general, have experienced important demographic shifts over the past decades. Fertility rates have dropped sharply concomitantly with lower mortality. Consequently, the average family size has fallen and life expectancy has increased—these changes are associated with the first demographic transition (FDT) (Lesthaeghe, 2014). Even with stronger heterogeneities among countries, the region has converged at the rates of the most developed countries, averagely (United Nations, 2017a). Historically, it has been reported in Guatemala, higher fertility rates than those observed in some neighboring Central American countries such

as El Salvador, Nicaragua, and Honduras and higher than the majority of South American countries. However, the Total Fertility Rate (TFR) has been declining in the last decades, it declined from 5.44 in 1990 to 3.09 recorded in 2014 (The World Bank, 2020). The reduction in fertility is associated with a rise in life expectancy, Smith et al. (2018) report that life expectancy at birth is 71.8 years in Guatemala. The authors also suggest that the window of opportunity for demographic dividend has already opened. “The child dependency ratio has begun its decline, and the old-age dependency ratio has not yet started to increase, resulting in a temporary dip in the total dependency ratio” (Smith et al. 2018, p. 11). In Guatemala, the share of the working age population is rising and the young cohort falling. While the proportion of the older cohort remains small. In fact, the work-force remains quite young (Instituto Nacional de Estadística [INE], 2014).

These demographic trends can be linked to the recent changes in the family sphere (Bianchi, 2014; Lesthaeghe, 2014). The average household size has fallen due to couples having fewer children; and in other cases, women deciding not to have any children at all. For instance, at least 20 percent of women aged 25-49 live in households with no children in European countries (Organisation for Economic Co-operation and Development [OECD], 2011). Consequently, the proportion of households with children is low (Jalovaara & Fasang, 2017; United Nations, 2017a). Furthermore, multigenerational family relationships become relevant. The concept of “generation” is typically captured by terms such as grandparent, parent, child, and grandchild (Gilligan, Karraker & Jasper, 2018; Mare, 2011). The so called “Skipped Generation” (households with children and grandparents but no parents) has also been emerging, which is prevalent in Asia countries (Ingersoll-Dayton et al., 2018; Knodel & Nguyen, 2015). The extended family (comprising different types of relative members and non-relatives or both) is also a particular trend in Latin America; on average, it continues to represent around twenty percent of all the family structures (Esteve, García Román, & Lesthaeghe, 2012).

Living arrangements are also changing, lone-person households have increased dramatically in recent decades in modern societies. Although, this trend is also spreading to developing countries. According to Snell (2017), the dramatic rise across many countries in lone-person households during the twentieth century, notably since 1960, especially in Western countries (e.g. 31 percent in the United Kingdom [UK] in 2011). In East Asia, the number of one-person households has increased dramatically in recent decades, particularly among younger cohorts living in cities (Ronald, 2017). Nevertheless, it has also been reported in European countries higher rates

of elderly people (aged 60 or over) living alone, for example, 32.4 percent in the UK, and 29.2 percent in Switzerland (United Nations, 2017b). More recently, Ullman, Maldonado, & Rico (2014) observed that the diversification of family forms and household structures is a shared trend across Latin American countries. In all countries (regardless of their level of economic development and the stage of demographic transition) it is observed the decline of two-parent nuclear families, and the increase in lone-person households and single-parent families, especially the ones headed by women. For instance, they observe that on average the proportion of two-parent nuclear families has decreased by 10.2 points from 1990 to 2010. Consistent with the decline of two-parent nuclear families, the proportion of households with no children has increased by 2.6 points. Other important changes in Latin American families include more children born out of wedlock (Laplante et al., 2015), more unions unstable, and more female-headed households (Liu, Esteve, & Treviño, 2017).

Changes in income inequality have been accompanied by changes in families. But these changes have occurred with different intensities among population subgroups across regions. Thus, scholars have been paying attention and examining the changing demographic composition of households and its effects on income distribution. Previous studies found that demographic changes and family forms play an important role in the reproduction of socioeconomic inequalities across countries (McLanahan & Percheski, 2008; OECD, 2011). Several studies have focused on the following features: changes in demographic structure, for example, household size, age of household head (Brandolini & D'Alessio, 2003; Gray Molina & Yañez, 2010). For instance, a study documented by OECD (2008) found that a share of 88 percent of total (absolute) change in the Gini coefficient of disposable incomes in West Germany from 1985 to 2005 is explained by changes in demographic structure.

Studies have consistently found a positive link between the prevalence of single-mother families and income inequality, particularly in the United States (U.S.) (Breen & Salazar, 2011; Chevan & Stokes, 2000; Kollmeyer, 2013). For instance, Western, Bloome, & Percheski (2008) suggest that the rising share of single-parent families explains one-fifth of the growth in family income inequality between 1995 to 2005 in the U.S. The comparative study by Bradley et al. (2003) also finds the prevalence of single-mother families is positively associated with income inequality across 14 Western countries.

In this context, this paper contributes to the literature in several ways. First, it has been observed in Guatemala as well as in most Latin American

countries, a decline of two-parent nuclear families, and an increase in lone-person households and single-parent families, especially those headed by women (Ullman, Maldonado, & Rico, 2014). Thus, this is an attempt to provide a broad overview of changes in family structure and living arrangements experienced in Guatemala throughout 14 years (2000-2014). Indeed, this study proposes a household typology based on a variety of criteria: a) households structure with respect to family composition (single-headed and couples), b) parenthood (differentiating nuclear families and single-parents according to their children age), c) gender (female-headed), and d) type of generation (e.g., two-generation [couples], three-generation and skipped generation) including a gender dimension, which is useful to illustrate the diversity of Guatemalan households.

Second, Guatemala suffered a 36-year long civil war that ended in 1996, which severely affected the economy and caused social inequality (Chamarbagwala & Morán, 2011). Nonetheless, its economy has grown in the recent decade and, nowadays, Guatemala is the most prominent economy in Central America. The country has shown a decline in inequality during the period 2000-2014, however, it continues to be listed as one of the most unequal countries in Latin America (Centro de Estudios Distributivos, Laborales y Sociales [CEDLAS] & The World Bank, 2019). Third, this study can capture family patterns that may gather the attention of both policy makers and society. Finally, given the research on this topic is limited to Latin American countries and especially to Guatemala, the key findings represent challenges for new researches by exploring the role of the changes in the family structure and living arrangements in shaping income distribution.

By means of these contributions, we aim to answer two questions. Which family and living arrangements changed in Guatemala from 2000 to 2014? How did the changes in family structure and living arrangements contribute to changes in income inequality in Guatemala over these years? In order to answer these questions, first, we present a descriptive analysis of socio-demographic characteristics of the population and households and their changes over time. Second, we examine the effects of the changing family structure and living arrangements on income distribution in Guatemala between 2000 and 2014 using a decomposition of the distributional change by population subgroups (Jenkins, 2006; Shorrocks, 1980).

The paper is structured as follows. Section 2 provides previous literature. Section 3 illustrates the data. Section 4 describes the empirical strategy used in the analysis. Section 5 presents the results. Section 6 concludes.

Background

Family forms and living arrangements have been diversified in the past decades. In this regard, studies have paid attention to the role of changes in family composition and the distribution of household types on income inequality. Most of the studies have focused on the following features: changes in demographic structure (Jenkins, 1995); particularly, changes in the proportion of households headed by a single person with dependents (Breen & Salazar, 2011; Martin, 2006), and “diverging destinies” (McLanahan, 2004). Other scholars have investigated how population processes affect socioeconomic inequality through generations (Mare, 2011). Later, others have addressed the interplay between women’s earnings and household income (Harkness, 2013; Nieuwenhuis et al., 2017).

The diversity of family structures may contribute to better understandings of the dynamics of income inequality across time or countries. For instance, Peichl, Pestel, & Schneider (2012) use decomposition techniques to analyze how the trends in household size and composition have affected the change in income distribution in Germany between 1991 and 2007. For that, they distinguish 14 population subgroups according to household features (e.g., the number of adult household members, the number of children living in the household). Their findings show that the growth of the income gap is partly (accounts for about 15 percent) related to changing household structure. However, the literature has also provided evidence that changes in family composition and household structure play a secondary role on income inequality. For example, Brandolini & D'Alessio (2003) used a decomposition method (of the mean logarithmic deviation) to show that it exists a limited association between household structure and income inequality in Italy during the period 1977 to 1995. Likewise, Albertini (2008) examined this issue during a longer period of time: 1977-2000. His results show that the equalizing power of families has diminished during the analyzed period and that the most recent changes in household composition do not have a clear impact on income distribution. Recently, Zagel & Breen’s comparative study (2019) used a counterfactual method to investigate how trends in family demography have influenced changes in income distribution in West Germany and the U.S. between 1990 and 2000. They found that shifts in family demography contribute to the inequality growth in West Germany. While in the U.S., the growth in women’s education and the change in men’s employment seem to explain inequality.

Latin America is considered the most unequal region in the world. However, over the last years, the region has achieved success in reducing

extreme poverty and inequality. Most of the empirical literature has investigated the effect of diverse factors on income inequality, e.g., a reduction in hourly labor income inequality (Azevedo, Inchaust & Sanfelice, 2013), and more progressive government transfers (López-Calva & Lustig, 2010). Nonetheless, a few scholars have explored the links between changes in family structure and income distribution. Gray Molina & Yañez (2010) examine the dynamics of inequality in Bolivia between 1997 and 2007 using a regression-based decomposition technique. Their results suggest that demographic changes and greater female labor force participation tend to explain much of the remaining income inequality. For Brazil, Wajnman, Turra, & Agostino (2006) simulated the impact of changes in the age-gender composition of adults on inequality levels between 2001 and 2005. They found a negative relationship between demographic variables and inequality; in particular, demographic changes slightly increased household income in inequality by 2 points of the total variation. Later, Maia & Sakomoto (2016) analyzed this issue using a longer period of time (1981-2011). They distinguished 12 groups of household types and used decomposition methods to show that demographic changes had an impact on income distribution in Brazil. Furthermore, their results reveal that changes in family structure are highly greater among the richest, which contributes to an increase in the income of the richest families and income inequality between the richest and poorest.

Demographic shifts and inequality in Guatemala

Guatemala is the most populous country in Central America, the estimated population was 15,923,237 in 2014 (The World Bank, 2020). The fertility rate continues higher than the rest of Central American countries (e.g. El Salvador, Nicaragua, and Honduras) and higher than most other South American countries (De Broe, Hinde, & Falkingham, 2004; Smith et al., 2018), although it has been declining over the last decades. Concerning the stages of demographic transition, Ullmann, Maldonado, & Rico (2014) suggest that Guatemala is within a “moderate transition”. These demographic changes are related to the diversification of family forms and household structures. It has been observed the decline in two-parent nuclear families, and the increase in lone-person households and single-parent families, especially headed by women. It reported an increase in the proportion of couples without children by 1.3 points and an increase in the proportion of lone-person households by 1.4 points from 2000 to 2010 (Ullman, Maldonado, & Rico, 2014). With regard to that, one-person households present a particular feature, their occupants usually aged 60 or older, around 13.4 percent for Guatemala (United Nations, 2017b).

It is noteworthy that changes in fertility and mortality in Guatemala are not accentuated compared to most Western countries in the same period. In this regard, migration, which may occur for a variety of reasons (economic causes, armed conflicts, among others) is another factor related to changing families (Arraigada, 2002). Particularly, the migration phenomenon has characterized Guatemala for generations (Giorguli, García-Guerrero & Masferrer, 2016; Malher & Ugrina, 2006).¹ International migration affects both household structures and their income through remittances, since remittances are explicitly considered as a relevant source of income. Scholars point out, migration standards in terms of age and family structure have not significantly changed in this period (Giorguli, García-Guerrero & Masferrer, 2016; Paredes Orozco, 2009). Landry (2011), suggests that economic, social, or political factors, international migrations in Guatemala have been changing the closest circle of the emigrant's family. She also analyses ambiguous social changes experienced by the family core—women and children—from the perspective of those who stay in the country. These changes are disclosed as a transformation, a disintegration or restructuring of the family, insecurity, shifts of male roles to new female roles. This phenomenon gives great importance to remittances and deconstructs the traditional family model, generally leaving female as heads of households. Women then face new responsibilities and manifestations of female empowerment, which is relevant in Guatemala where traditionally women can face situations of greater vulnerability, dependency, and even abandonment.

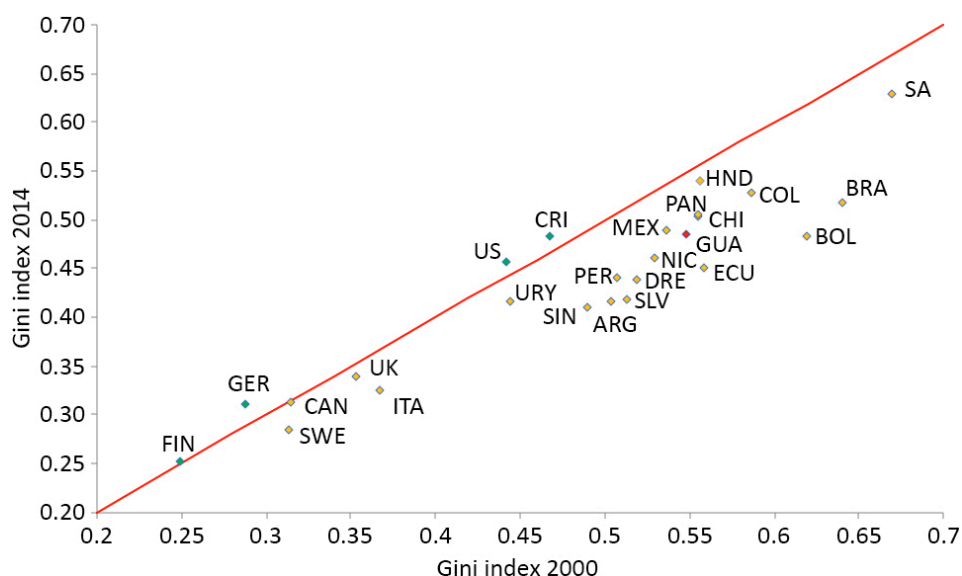
Beyond these demographic trends, Guatemala has experienced notable changes in their living conditions over the past years, however, it continues reporting higher levels of inequality and poverty. Despite the country has reduced its poverty rate from 56 percent to 51 percent between 2000 and 2006, this rate rose to 59.3 percent in 2014 (SEDLAC & The World Bank, 2019). Guatemala has also reported the most unequal distribution of education and health in Latin America (Sahn & Younger, 2006).

Guatemala is a lower middle-income country, with a Gross Domestic Product (GDP) of 58.7 billion United States Dollar (USD) and a GDP per capita of 3,687 USD (The World Bank, 2020), and it is the largest economy in Central America, but it is also considered one of the world's most unequal societies. This is clearly illustrated in Figure 1, which displays the evolution of the Gini for household income in Guatemala. Even though inequality

1 The migration phenomenon has affected Central American countries. In particular, Guatemala, El Salvador, and Nicaragua have reported a higher level of migration since 1980 due to armed conflict (Malher & Ugrina, 2006), and natural disasters (Giorguli, García-Guerrero & Masferrer, 2016).

has declined substantially from 0.55 in 2000 to 0.49 in 2014 (CELDAS & The World Bank, 2019), the level of income inequality has remained higher than most Latin American countries and Central American countries.² Figure 1 includes additional information, almost all Latin American countries showed a process of reduction in income inequality, but advanced economies experienced a rise in income inequality.³

Figure 1. Evolution of income inequality across countries (2000-2014)



Source: Own elaboration with data of CELDAS (Centro de Estudios Distributivos, Laborales y Sociales [CEDLAS] & The World Bank, 2019, 2020), OECD (2020).

Empirical research on income inequality is very scarce for Guatemala. Aguirre (2007) suggests that family structure is important to determine both wealth and poverty levels in Guatemala. Moreover, married couples can likely buy their own house, and other assets (savings and others), at the opposite extreme, single mothers, divorced and separated people suffer the most. Later, Instituto Centroamericano de Estudios Fiscales (2017) found that fiscal policy has a slight impact on reducing inequality through public spending, not through taxes. Government spending on education and health, as well as transfers, are the elements that most affect the reduction in inequality.

² Inequality remained stable over the period 2000 to 2006. The Gini is derived from the distribution of household equivalized income, data come from the ENCOVI (CELDAS & The World Bank, 2019).

³ All Latin American countries were not reported in Figure 1 due to data limitations. Furthermore, data from Chile was only available for 2000 and 2013, and for Honduras for 2001 and 2014.

Data

This paper uses microdata from the Encuesta Nacional de Condiciones de Vida (ENCOVI) carried out by the INE. The survey is representative of the Guatemalan population, at national level for rural and urban areas. Generally, ENCONVI collects demographic, social, and economic information about the household respondents, and a module of time use as well. Despite some minor divergences in the questionnaires, both surveys should be compatible and comparisons over time can be derived from them through the use of a set of harmonized variables. The analysis is at the level of the household, here a household is defined as a group of one or more persons who live in a home and sharing expenses. Boarders, domestic servants, households in which the individuals presented missing values in the variables used in the analysis, such as marital status or any relationship to the household head are not included. We restrict our analysis to households whose head is 20 years or over. The final sample for 2000 contains 7,098 households, and for 2014 it contains 11,374 households. In addition, sampling weights provided by the survey are applied.

We use gross income (pre-tax, post-transfers income), which is computed from five important sources: labor income, retirement pensions, social transfers, remittances, and other income.⁴ Then, household income is the sum of all income from all sources from all household members, zero income households are included in the analysis.⁵ In order to explore the role of the changes in the family structure and living arrangements on income inequality using two points in time (2000 and 2014). For that, income needs to be converted from nominal (current) values to constant values (base period=2000) using the national consumer price index (CPI) provided by the Central Bank of Guatemala.

Empirical Strategy

Our analysis aims to explore the role of the changes in the family structure and living arrangements in shaping income distribution in Guatemala from 2000 to 2014. For this task, we first present a descriptive analysis of the socio-demographic characteristics of the population, and households, as well

4 This definition of gross income is the same used by Cancian & Reed (1998). Additionally, labor income includes wages, salary, and self-employment. Other types of income include pensions, private transfers, alimony, and capital income.

5 Usually, survey respondents do not report the value or report a value of zero as their incomes. In this case, missing and zero incomes are considered as zero (this convention is also used by CEDLAS).

as changes in these characteristics over time. We then examine the effects of changes in family composition and living arrangements on the level of income inequality using a decomposition of the distributional changes by population subgroups (Jenkins, 2006; Shorrocks, 1980).

Equivalized Income

We use the OECD scale to compare levels of income between households of different size. An equivalence scale assigns a value to each household type in the population in proportion to its needs. Generally, the variables taken into account to assign these values are the household size and the age of its members. According to OECD (2005), the “modified scale” assigns a weight of 1 to the household head, of 0.5 to each additional adult (aged 15+), and of 0.3 to each child (aged 0-14) in the household. This first scale was proposed by Hagenaars, De Vos & Asghar Zaidi (1994), who have argued to employ the modified OECD scale due to its proximity to the average scales derived in the literature.

Population Subgroups

The definition of “household types” is based on a variety of criteria of household structure (Ullman, Maldonado, & Rico, 2014) with a gender dimension. Thus, the typology proposed here is structured according to the following criteria: a) structure of households with respect to family composition (single-headed and couples), b) parenthood (differentiating couples and singles according to the age of children), c) gender (female-headed), and d) type of generation (e.g. two-generation (couples), three-generation and skipped generation). To characterize “children” this study has taken into account the definition from the modified OECD equivalence scale, where a person is considered a child if his age does not exceed 14 years old (OECD, 2005).⁶ In addition, we classify as “couples” those people that reported being married or cohabitating. As a result, eleven different household types are distinguished (plus the “residual” category other): lone-person/women, lone-person/men, single mother with children under 15 years old, single father with children under 15 years old, single mother with children aged 15 years old or more, single father

6 It is also noted that the minimum age for employment established by the Ministry of Labor of Guatemala is 15 years old.

with children aged 15 years old or over, couples with children under 15 years old, couples with children aged 15 or more, couples without children, three-generation, skipped generation, and “other”.⁷

The Inequality Decomposition

We focus on the decomposition analysis, which is very important when one is interested in explaining the level and change of inequality by population subgroups. For that, the population is divided into various subgroups, considering that total inequality is expressed as the sum of a within-group and between-group inequalities (Shorrocks, 1980, 1984). With respect to this method, Cowell and Fiorio (2011) suggest that “A coherent approach to subgroup decomposition essentially requires (1) the specification of a collection of admissible partitions ways of dividing up the population into mutually exclusive and exhaustive subsets and (2) a concept of representative income for each group” (Cowell & Fiorio, 2011, p. 1). The class of Generalized Entropy (GE) has been proposed as a measure of inequality. This index can be decomposed in a way such that the total inequality results as the sum of inequalities within and between population subgroups (Shorrocks, 1980).

The general formula of GE is given by:

$$GE(\alpha) = \frac{1}{\alpha(\alpha-1)} \left[\frac{1}{N} \sum_{i=1}^N \left(\frac{y_i}{\bar{y}} \right)^\alpha - 1 \right] \quad (1)$$

The mean income is \bar{y} . “The values of GE measures vary between 0 and ∞ , with zero representing an equal distribution and higher value representing a higher level of inequality. The parameter α in the GE class represents the weight given to distances between incomes at different parts of the income distribution and can take any real value” (Litchfield, 1999).

Following to Shorrocks (1984) and Cowell (1980), the new inequality measures decomposable by population subgroups:

$$\sigma = \sum_j w_j \sigma_i + \frac{\lambda}{\beta} e^{\beta(\delta_0 - \delta)} \sum_j w_j \ln \left[\frac{1 + e^{\beta(\delta - u_j)}}{1 + e^{\beta(\delta - u)}} \right] \quad (2)$$

7 This study defines as lone-person household a private dwelling, with only one person aged 15 or older. While the category “other” can be complex since the household size, family relations and living arrangements are strongly diverse. The category “other” likely includes non-nuclear households—i.e., “without a conjugal nucleus or parent-child relationship, although other kinship ties may exist” (Arriagada, 2002, p. 143)—and non-family households (consist of two or more people who share a home and some expenses, but do not constitute a family, see Ullmann, Maldonado, & Rico, 2014). The household typology proposed is based on the age of the youngest child.

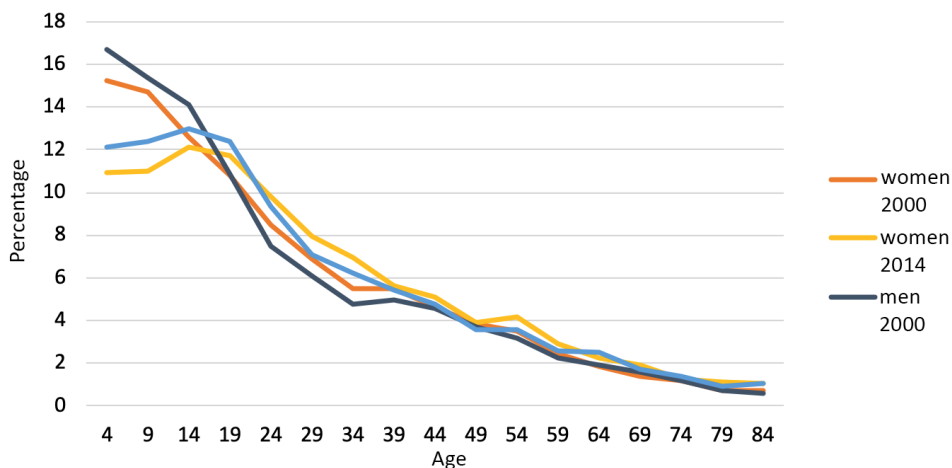
Then, the subscript j represents to the J mutually exclusive subgroups of the population, and w_j is the population share of subgroup j . The first term on the right side of equation (2) refers to the population-weighted average of inequalities of within-group. While the second term denotes between-group inequality, it is estimated after assigning the group mean income to each member in a population group. The commonest values of α used are 0,1 and 2. GE (1) is Theil's T index, and GE (0), also known as Theil's L. Sometimes, this indicator refers to the mean log deviation measure (Haughton & Khandker, 2009, p. 99). We use the GE (2) as a measure of income dispersion, it is half the squared coefficient of variation (Jenkins, 2006).

Results

Descriptive Analysis

Despite our study has focused on a short period of time, important demographic trends can be observed in Guatemala. The country has still a large rural population, in 2000, the rural population concentrated 61.9 percent of the total, but this ratio decreased to 50.7 percent in 2014.⁸ With a median age of 17.7 in 2000 and 21.2 in 2014, the population structure remains quite young, people under 30 years of age represent approximately 60 percent of the total population in both years. Nevertheless, it is also possible to observe that the population is aging slowly (Figure 2).

Figure 2. Guatemalan population by gender and age, 2000-2014

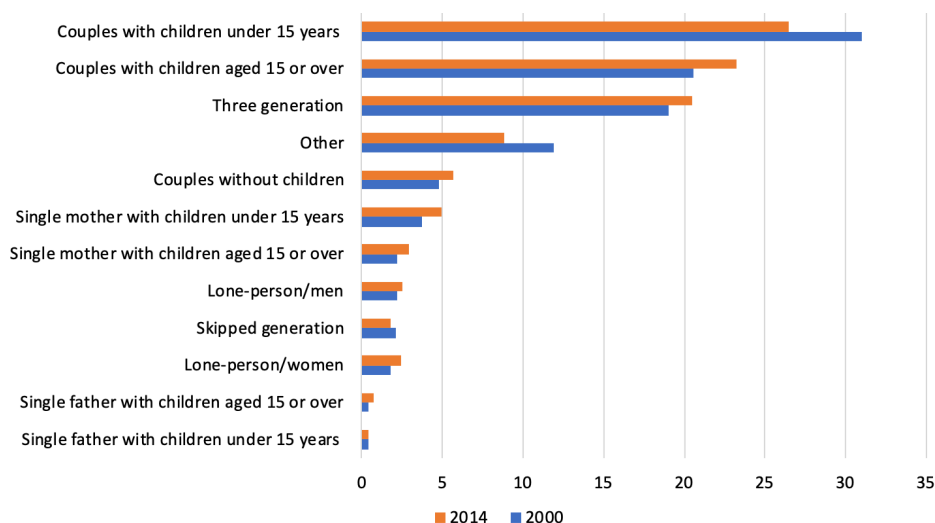


Source: Authors' calculation based on ENCOVI 2000 and 2014.

8 The reduction in rural population can be explained by two factors. First, it is an accelerated process of urbanization. Second, a new urban/rural classification was implemented by the National Statistical Institute after the 2002 census (World Bank, 2009, p. 13).

In order to describe the role of family composition and living arrangements on income distribution across households twelve groups are identified. Figure 3 shows the percentage of households, concerning that, the most common types are couples with children and three-generation families (each one accounting between 20-31 percent of the total). This result confirms that two parents-nuclear families are an important Guatemalan feature, and it is also the most common family form across Latin American countries. Although this type of household tends to decline over time (Ullman, Maldonado, & Rico, 2014).

Figure 3. Distribution by Household Types in Guatemala (percentage), 2000-2014



Source: Authors' calculation based on ENCOVI 2000 and 2014.

The most important change in family structure and living arrangements was the decline in the number of couples with children under 15 (years old), from 31 percent of all households in 2000 to 26.5 percent in 2014. This change is in correspondence with the increase in couples with children aged 15 or over, which can be linked to two reasons. This change corresponds to the increase in couples with children aged 15 or over, which may be linked to two reasons. First, the fertility rate has fallen, and second, trends in young adults living with their parents have led to an increase in the group of couples with children 15 years of age or over. Also, the rise in life expectancy has conducted to the growth of the number of elderly two-person households. With respect to age structure, at least 46 percent of the total household head living in households without children are concentrated in the older group (see Table 4 in the appendix).

Furthermore, single parenthood is therefore strongly gendered. Indeed, the proportion of single mothers with children also slightly increased in 2014 compared to 2000. Lone-person households are not a strong feature in Guatemala; however, it is important to note that the share of lone occupant households headed by women has risen slowly over the analyzed period. Another interesting result is that the proportion of three-generation households has risen by 1.5 points, while the proportion of skipped generation households has decreased by 0.3 points from 2000 to 2014. These small shifts would correspond to the share of children living with their parents and grandparents' tendency to rise, while the share of children living in skipped generation household tendency to slightly decrease over time.

Regarding the characteristics of the head of the household, it is possible to observe that the process of ageing has involved the population as a whole, for instance, there is a rise in the share of household heads aged 60 or more across the majority of household groups. The rise of lone-person households mentioned previously concerns, especially, older women. At least 67.9 percent of women living in lone-person households were aged 60 or more in 2000, additionally, the share of this group grew by 1.4 points (see Table 4 in the appendix).

Decomposition Results

As it is expected, equivalent household income and the share of income vary among the analyzed groups. From 2000 to 2014, in relative terms, the mean equivalent income has barely increased for three groups: couples with children under 15, skipped generations, and couples without children. While single-mother with children under 15 and lone-person households suffered a worsening of their economic position. When compared to other household types, the equivalent household income shows lower values in these groups. These results are consistent with the literature. Single mothers are generally at more disadvantage than other household types (Kollmeyer, 2013; Maia & Sakamoto, 2016; Martin, 2006). In addition, couples with children and three generation-families account for the bulk of total income in both periods, but looking at the evolution of income share, the age structure becomes relevant (Table 1).

Table 1. Relative mean of equivalized income (in real Quetzal) and income share by Household type, Guatemala, 2000-2014

Household Structure	Relative mean		Income share	
	2000	2014	2000	2014
Couples with children under 15 years	0.9480	1.0282	27.73	24.84
Couples with children aged 15 and over	1.0669	1.0533	25.95	28.95
Three-generation	0.9259	0.8836	24.38	25.66
Skipped generation	0.5931	0.7003	0.87	0.94
Lone-person/women	1.0315	0.8430	0.35	0.42
Lone-person/men	1.8985	1.4600	0.81	0.75
Couples without children	1.0644	1.4782	1.95	3.51
Single mother with children under 15 years	0.8280	0.8682	2.49	3.39
Single father with children under 15 years	0.9706	0.9327	0.29	0.32
Single mother with children aged 15 and over	1.7145	1.1712	1.93	1.92
Single father with children aged 15 and over	2.5609	0.8013	0.54	0.29
Other	1.1162	1.0804	12.69	9.02

Source: Authors' calculation based on ENCOVI 2000 and 2014.

Table 2 reports the measures of inequality computed in each group, for the GE (2) index. Differences in the levels of inequality can be observed among groups. From a gender perspective, interesting results emerge, for example, single mothers with children under 15 are associated with higher levels of inequality as compared to single fathers in 2000. For women living alone income inequality has increased by 4.9 points between 2000 and 2014. It is also possible to observe that some patterns remain stable for the analyzed period. For instance, couples without children, lone-person, and single-mother with children under 15 years old households are likely to report higher income inequality than the rest of the household types.

Table 2. Inequality index, according to Household type, Guatemala, 2000-2014

	Household Structure	
	Within group GE (2)	Between group GE (2)
2000	1.3210	0.0113
2014	1.1912	0.0073

Source: Authors' calculation based on ENCOVI 2000 and 2014.

The decomposition results are reported in Table 3. In Guatemala, inequality within groups and inequality between groups declined, nonetheless, differences “within-groups” tend to be greater than those “between-groups”. Therefore, changes in the distribution of household types, particularly changes in family structure and living arrangements seem to play a secondary role in the decline of income inequality experienced by Guatemala during the period from 2000 to 2014. In that regard, several studies show similar results, for example, for the UK (Jenkins, 1995), for Italy (Brandolini & D’Alessio, 2003). Recently, for the U.S. (Zagel & Breen, 2019). Although, most of these countries experienced a rise in income inequality during the period of analysis.

Table 3. Decomposition of income inequality
(GE) 2, Guatemala, 2000-2014

Household Structure	GE (2)	
	2000	2014
Couples with children under 15 years	1.5002	1.6158
Couples with children aged 15 and over	1.1144	0.8155
Three-generation	1.2373	0.4333
Skipped generation	0.5269	1.1924
Lone-person/women	1.1577	6.0215
Lone-person/men	1.9456	1.5038
Couples without children	2.1543	5.0160
Single mother with children under 15 years	5.0854	1.2204
Single father with children under 15 years	0.2950	0.5770
Single mother with children aged 15 and over	0.5088	0.5510
Single father with children aged 15 and over	0.5591	0.7381
Other	0.8951	0.7619

Source: Authors' calculation based on ENCOVI 2000 and 2014.

Household types that represent a large share of the total population experienced a decrease in income inequality, which can affect the distribution of income throughout time. Nevertheless, the findings show that distance “within-groups” included in the analysis is more relevant to income household distribution in Guatemala. Thus, this may indicate that groups considered initially homogeneous still need to be explored (Brandolini & D’Alessio, 2003). In addition, as Guatemala is within a “moderate transition” (Ullmann, Maldonado, & Rico, 2014), it is possible that more remarkable changes in family structure are occurring among the richest families. These aspects, therefore, open the opportunity to explore the diversity of living arrangements within household types selected by this study.

Conclusions

This paper explores the role of the changes in the family structure and living arrangements on shaping income distribution in Guatemala using data from the national survey ENCOVI (2000 and 2014). We observe modest but important demographic trends shaping Guatemala. The population structure remains quite young, people under 30 years of age represent approximately 60 percent of the total population in both years, nevertheless, the population is ageing slowly. These changes are likely a result of a decline in fertility rates experienced by Guatemala in the past decades, a similar trend across Latin American countries (Lesthaeghe, 2014). Additionally, the typology proposed by this study evidences the diversification of Guatemalan households. Family structure and living arrangements are changing; although the most common household type continues to be “two-parent nuclear families”, its importance is deteriorating over time. Thus, the most remarkable change is the decline in the number of couples with children under 15, from 31 percent of all households in 2000 to 26.5 percent in 2014. Looking at the diversity of households with a gender dimension; single-parent households are likely headed by women. Moreover, the proportion of single mothers with children increased slightly in 2014 compared to 2000, it is a phenomenon widely analyzed in the Latin American region (Liu, Esteve, & Treviño, 2017; Villarreal & Shin, 2008).

Beyond these changes in household distribution, income inequality at national level experienced a decline over the analyzed period. But changes in household income inequality did not account for the same magnitude or, on the other hand, moved to the opposite magnitude across household groups. For instance, for couples with children aged 15 and over and three-generation families income inequality decreased, while for couples without children it increased for the analyzed period. We find that changes in “within-groups” inequality matter more on income household distribution. In sum, the trends in family structure and living arrangements mainly associated with the decline in fertility rates and demographic aging do not seem to have contributed to changes in income inequality experienced by Guatemala for the period from 2000 to 2014. Thus, it is important to note that our findings do not state a causal relationship between changes in family living arrangements and income inequality. Nonetheless, these results help to understand the dynamics of family structure and living arrangements in Guatemala. Also, the method used by this study is considered a first step in explaining changes in income distribution (Bourguignon & Ferreira, 2005).

This paper contributes to the existing literature by examining changes in household composition in Guatemala and its link to income inequality. Accordingly, the results presented here lead to three main remarks, first, the aging population implies the rise in the proportion of people over 65 in the total population and shapes the demand for unpaid care activities within households. Second, the most important change observed is the decline in the number of couples with children under 15. Other changes that deserve more attention are the rise of single mothers with children households and three-generation households. Third, single-mother with children under 15 and lone-person households headed by women suffered a worsening of their economic position over the analyzed period. Single mothers are more likely to face economic disadvantages in relation to single fathers. Therefore, our findings show the importance of promoting the implementation of work-family policies. Certain policies focusing on work-life balance (e.g., paid parental leave and public care services) positively affect women's employment and earnings (Olivetti & Petrongolo, 2017), consequently the well-being of their families.

Finally, our study also represents challenges for future research; in particular, it should explore other characteristics related to household head such as work status or age, which would be relevant to older "retired" couples without resident children or single-mothers with children living at home. Further, since individuals receive income from different sources (e.g. labor, transfers, remittances, and pensions), extending the analysis to different sources of income and how it influences overall income inequality across households would be interesting.

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Appendix

Table 4. Distribution of heads of household by age group (percentage), Guatemala 2000-2014

Household Structure	Age of head household												Total								
	20-29				30-39				40-49					50-59				60 or older			
	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014	2000	2014		2000	2014	2000	2014				
Lone-person/women	9.5	3.0	3.8	6.5	6.4	5.4	13.2	15.8	67.0	69.3	100										
Lone-person/men	15.6	6.8	13.9	16.0	13.3	13.3	17.7	14.5	39.4	49.4	100										
Single mother with children under 15 years	9.6	16.6	49.0	40.5	32.8	31.2	8.5	11.5	-	0.2	100										
Single father with children under 15 years	4.2	7.3	23.5	19.3	47.6	34.0	15.4	30.1	9.3	9.3	100										
Single mother with children aged 15 and over	-	-	2.1	5.7	24.6	27.9	43.0	30.5	30.4	35.8	100										
Single father with children aged 15 and over	-	-	-	2.6	10.0	7.2	21.1	17.5	69.0	72.7	100										
Couples with children under 15 years	36.7	34.9	43.6	48.2	15.2	11.4	3.2	4.1	1.4	1.4	100										
Couples with children aged 15 and over	0.2	0.4	15.3	16.3	44.5	39.9	24.9	25.9	15.1	17.4	100										
Couples without children	17.3	19.0	7.1	12.1	7.8	8.0	21.5	13.4	46.3	47.5	100										
Three-generation	5.3	3.8	13.5	11.7	23.9	23.0	27.2	27.0	30.3	28.0	100										
Skipped generation	-	-	-	-	2.5	3.0	24.7	13.0	72.8	84.0	100										
Other	16.2	12.6	21.4	21.8	25.8	24.5	21.5	21.0	15.0	20.2	100										

Source: Authors' calculation based on ENCOVI 2000 and 2014.