

Artículo de revista:

Esteve, Albert; Reher, David (2024). Trends in living arrangements around the world. *Population and Development Review*, 49(4) (ISSN 1728-4457) <https://doi.org/10.1111/padr.12603>

Trends in Living Arrangements Around the World

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Most people coreside with other kin in private households while others live alone. The incidence of coresidence with kin and solo living varies noticeably across societies. Scholars have long theorized about the role of modernization and cultural change for living arrangements, suggesting a trend toward the nuclearization of households (coresidence only with primary kin) or solo living as societies attain higher levels of development. There is little empirical evidence about global variations in living arrangements and about how such variations unfold at different levels of development. Here we address these fundamental questions. Using IPUMS census microdata for 279 samples and 90 countries, we develop a new metric for assessing the part of the lifetime a person can expect to reside with primary kin, nonprimary kin, or alone assuming exposure rates, from birth to death, to the living arrangements observed in a given year. Results show that coresidence patterns differ substantially across societies, with exposure to primary kin alone and to solo living substantially higher at higher levels of development (as measured with Human Development Index [HDI]). They also reveal a sustained decline in coresidence with nonprimary kin and/or with others nearly everywhere, supporting the idea of an increasing importance of nuclear living arrangements. This trend is most pronounced at medium levels of HDI. At very high levels of development, nuclear family coresidence tends to be stalling or is in decline in favor of more time spent living alone and, rather unexpectedly, to a modest increase in exposure to nonprimary kin within the household. We suggest different interpretations for these results.

Introduction

Universally most humans coreside with other kin or live alone. Coresidence with kin varies noticeably across societies. The nuclear household,

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This work was supported by the European Research Council under Grant 101052787; and Ministerio de Ciencia e Innovación under Grant PID2021-124267OB-I00.

consisting entirely of primary kin and a single-family nucleus, epitomizes the simplest form of kin-based coresidence. By contrast, extended or composite households involve the presence of nonprimary kin and/or non-family members (Laslett 1970). Scholars have long theorized about the role of development and cultural change for living arrangements, suggesting a trend toward the nuclearization of households as societies attain higher levels of development (Goode 1963; Le Play 1871; Parsons 1949). A similar argument can also be applied to the association between development and living alone (Reher and Requena 2018; Esteve et al. 2020). To date, however, there is little large-scale empirical evidence about cross-national variations in living arrangements, how they change over time or about how such variations and trends correlate with development.

Using uniquely harmonized individual global census microdata for 90 countries, spanning from 1960s to the present and representing more than 80 percent of today world's population, in this paper we provide a comprehensive analysis of patterns and trends in living arrangements in private households. First, we distinguish between living alone and living in multi-person households. Second, among the latter group, we distinguish between living only with primary kin (nuclear living arrangements) or living with at least one nonprimary kin and/or non-kin (extended, composite or non-kin living arrangements). We present a new metric for assessing the time a person can expect to coreside with various kin or alone assuming exposure rates to the living arrangements observed in a given year across different ages. Results underscore the existence of substantial differences across societies and changes over time. These shifts have important implications for the ability of the coresident family to address successfully the challenges of personal and societal aging related to the health, vulnerability and well-being of its members. We discuss different interpretations and implications derived from these results.

Background

Households are the most basic units of coresidence among humans. Households have many implications for the social, cultural, and economic reproduction of societies (Goode 1963; Bongaarts 2001; Therborn 2004; Laslett 1970; Becker 1998) and they also serve as the basic unit of enumeration for censuses and surveys (United Nations 2017). Despite differences in household definitions (e.g., *de jure* versus *de facto*), the use of households as units of analysis has been ubiquitous in social science research and informative of how societies organize and evolve over time (Ruggles 2012). In this paper, we focus on private households only, which cover more than 98 percent of the population and are systematically identified in population censuses and surveys.

Kinship is the key to understanding living arrangements. Parents and children constitute the basic family unit because having and raising children is the key function of families around the world. The presence of more distant kin within the household (for example, grandparents or others) is a function of need and willingness, working in both directions and involving both the core family unit and its more distant kin. A wide range of economic, cultural and demographic macrolevel factors have been used to explain existing disparities in kin coresidence around the world (Le Play 1871; Goode 1963; Goody 1996; Schulz et al. 2019; Therborn 2004; Hajnal 1965; Ruggles 1987; Laslett 1970). Early scholarship on coresidence was centered on its relationship with economic development. It was widely accepted that nuclear families had become dominant in the Northern America and Europe because they were functionally adapted to the needs of industrial society (Parsons 1949; Goode 1963). Goode argued that with economic development, the nuclear family would inevitably spread across the world: “wherever the economic system expands through industrialization [...] extended kinship ties weaken” (Goode 1963). Others emphasized that disparities in the kin-composition of households can be seen in historical contexts as early as the seventeenth or eighteenth centuries (Laslett 1970, 1965) and that the relatively stability of family norms and values would ensure the regional diversity for centuries to come (Hajnal 1965; Reher 1998). Demographic factors also shape the opportunities for living arrangements across societies (Ruggles 1987). The overall decline of fertility around the world coupled with improvements in adult health help explain shifts in living arrangements.

Less attention has been paid to the importance of the underlying values regarding family life that inform kin coresidence, as well as to the many mechanisms related directly or indirectly to development that inform fundamental trade-offs involved in kin coresidence (resource sharing, privacy, the abundance of available kin, individualism, attitudinal changes linked to development, and many others). Beyond the specific causes, however, it is clear that societies where the presence of nonprimary kin in the household is more pervasive are societies where the basic links of kinship are stronger, and societies where there is an identifiable trend toward a reduction in the presence of nonprimary kin in people’s lives are societies where the links of kinship are weakening.

The past half century of family history studied here takes place against a backdrop of major demographic, economic and social change. Initially, runaway population growth, an unintended consequence of the demographic transition, affected much of the developing world. At the same time, a small minority of developed countries experienced below-replacement fertility. This was accompanied by a complete rearrangement in the way the family and family life were viewed in society in a process often called the second demographic transition (Lesthaeghe 2010; Reher 2004). By

the outset of the present century, fertility and mortality had also declined dramatically in much of the developing world (United Nations 2020; World Health Organization 2022). The number of these societies affected by the postponement of marriage and childbearing grew substantially, though they continued to be a minority on the world stage (Lesthaeghe 2014). It was also a period characterized by leaps in levels of economic and social development affecting much of the world but seldom at the same pace or level (Sala-i-Martin 2006; Alvaredo and Gasparini 2015). Substantial gains in per capita income and education have taken place in most countries of the world (UNESCO 2022).

These great processes define the playing field where the changes discussed here take place. To summarize such processes, we make use of the Human Development Index (HDI), a UN-based indicator that captures three main dimensions of development: per capita income, education and life expectancy (United Nations 2022). We examine how variations in living arrangements correlate with levels of HDI both across societies and over time. In so doing, we provide a systematic analysis of large-scale household transformations and differential intra-household exposure to kin in many world regions. Existing research tends to focus on single country studies or on partial coverage of world regions and predominantly takes the household as unit of analysis. The public availability of data on millions of individuals and households that makes up the Integrated Public Use Microdata Series (IPUMS) enables us to achieve our research goal (Minnesota Population Center 2020).

Analytical strategy and data

In studies of living arrangements, the household perspective has tended to dominate over the individual perspective. The standard approach has been to typify households based on existing kin relationships between members (Laslett 1970), specifically between coresidents and the household head. By contrast, here we have chosen to adopt an ego's perspective that portrays the exposure to different living arrangements at different ages (Ruggles 1988). In order to do this, we have estimated the specific kin and non-kin links between an ego with every other individual in the household over the entire life course. For individuals in multiple person households, we distinguish between coresidence with primary kin alone and coresidence with (at least one) nonprimary kin and/or with non-kin. This basic distinction enables us to visualize the internal structure of living arrangements and respond to the overarching research question of this paper; that is, whether or not there is an identifiable trend over time toward living arrangements made up exclusively of primary (or nuclear) kin or of people living alone. The resulting metric, based on the importance of these two coresidential situations over the entire life course, is not exactly the same as one

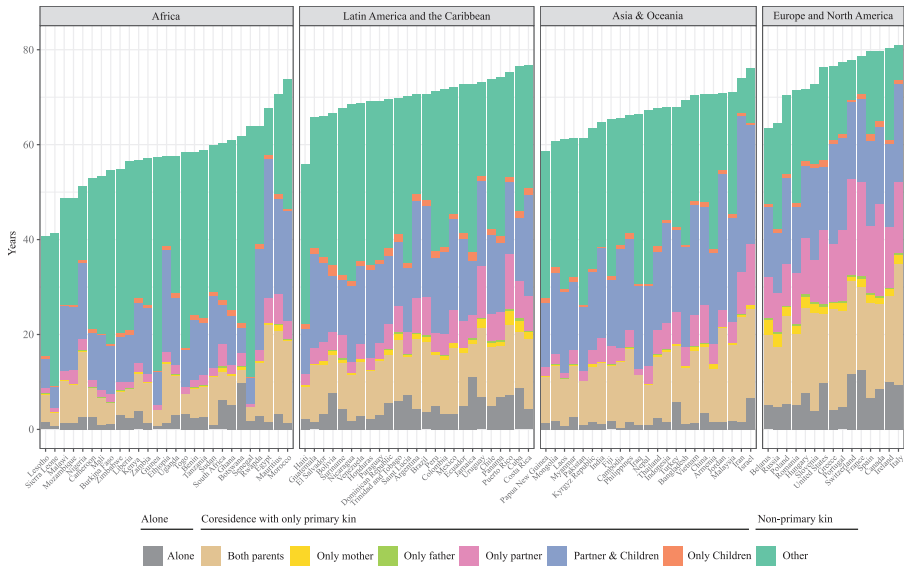
for household structure, invariably estimated from the standpoint of the household head, yet it enables us to participate in a meaningful way to the on-going nuclear/extended family debate. It also provides us with a unique and nuanced metric for estimating the shifts in kin-coresidence taking place over the life course and over time in societies around the world. In this paper, we make use of the global estimate of kin coresidence outlined above.

Addressing this issue is made possible by the revolution in census microdata provided within the IPUMS project (Minnesota Population Center 2020). Researchers now have access to vast amounts household level census data. The IPUMS international samples constitute a fully representative sample of world population. We use data from 90 countries and 279 samples. These data are structured in ways that facilitate the study of family change from an individual perspective (Sobek and Kennedy 2009). All samples included are based on individuals organized into households. IPUMS constructs family interrelationship variables and includes a set of pointer variables that identify the presence of the partner, father, mother and offspring in the household. Pointer variables are a reliable instrument for understanding the basic structures of coresidence from an ego's perspective.

For each ego we classify whether or not he or she lives alone, and for those who do not, we identify if ego lives with a partner, own child, own father, own mother, or with other more distant kin. Members who share the same father or mother are identified as siblings. For egos in multi-person households, we group them into two categories. The first group corresponds to those living only with primary kin. Primary or nuclear kin members are parents, partners, children, and siblings. The second group includes those living with nonprimary kin and/or with persons unrelated by kinship, independent of whether or not egos also live with primary kin. Here, for example, grandparents coresiding with grandchildren, or grandchildren coresiding with grandparents, are not considered primary kin. More distant kin ties, as well as ties with non-kin or where specific kin links have not been identified, are also included in our general estimate of nonprimary kin. The reason for this is that not all censuses offer detailed data on more distant (nonprimary) kin and non-kin present in households (see Appendix Supporting Information). Although not ideal, this last classification strategy is the only one possible with available data.

Once we have classified all individuals according to whom they live with, we combine this information into a new metric that synthesizes the part of a lifetime a person can expect to live in different living arrangements assuming exposure rates, from birth to death, to the living arrangements observed in a given country and year. The indicator has an interpretation analogous to life expectancy and has the merit of summarizing into a single and intuitive metric the importance of different living arrangements over the life span. We use the Sullivan method to estimate either the number of years of life expectancy or the percentage of the existing life span an

FIGURE 1 Lifetime spent in different living arrangements by country in years of life expectancy at birth. Most recent sample since 2000. Males



SOURCE: Own elaboration based on IPUMS international census microdata and United Nations mortality data.

individual can expect to be in different living arrangements (Sullivan 1971). Mortality data come from the United Nations world population prospects (United Nations 2019).

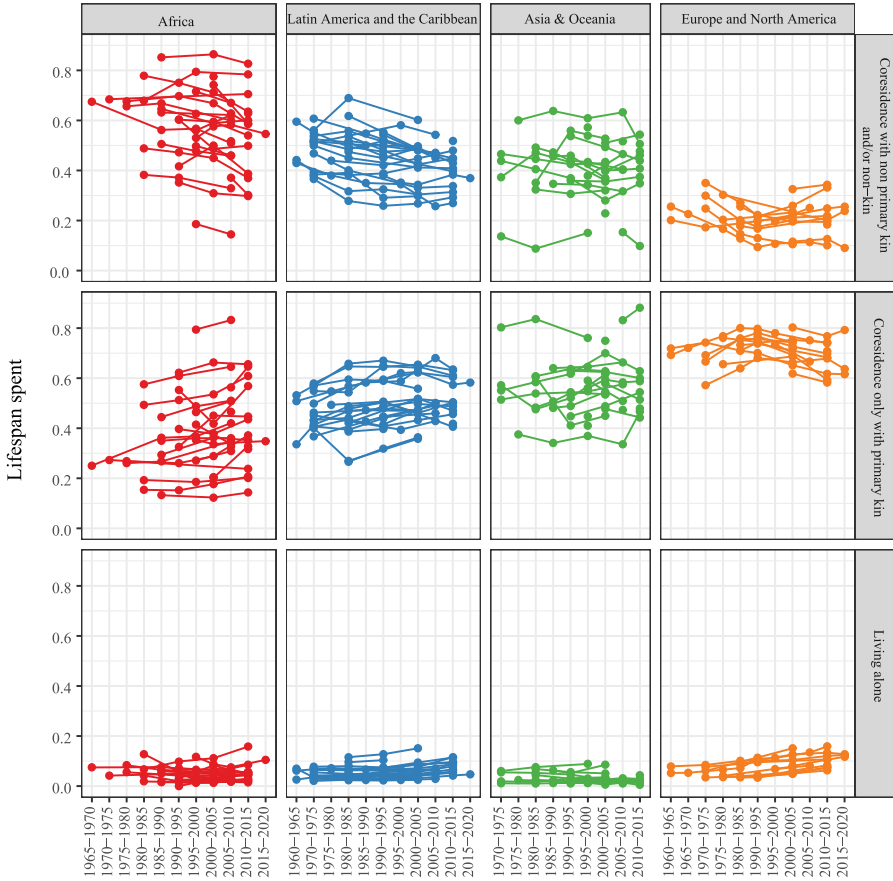
We have run separate analysis for men and women. Men and women exhibit the same trends over time. In Figures 2, 3, and 4, we display the results for both sexes to provide evidence of this. Unless specified otherwise, we refer to life expectancy at birth or, in some cases, to life expectancy at age 65. We provide data on absolute (in Figure 1) and relative (in Figures 2–5) lifetime exposures to different living arrangements. Relative measures are more appropriate to assess comparatively the degree of change in specific kin links holding in any given society independent of the prevailing levels of mortality. Data availability allow us to decompose the lifetime spent with primary kin alone into the following groups: only partner, only children, partner and children, both parents, only mother, and only father.

Results

Diversity

A rapid view of diversity around the world is presented in Figure 1. In this figure, we show data for males only. Figure 1 includes countries corresponding to the most recent census after 2000 (see Data Appendix in the Supporting Information for this figure). Gray bars represent the

FIGURE 2 (A) Trends in lifetime spent in different living arrangements by country and region relative to life expectancy at birth. Males. (B) Trends in lifetime spent in different living arrangements by country and region relative to life expectancy at birth. Females

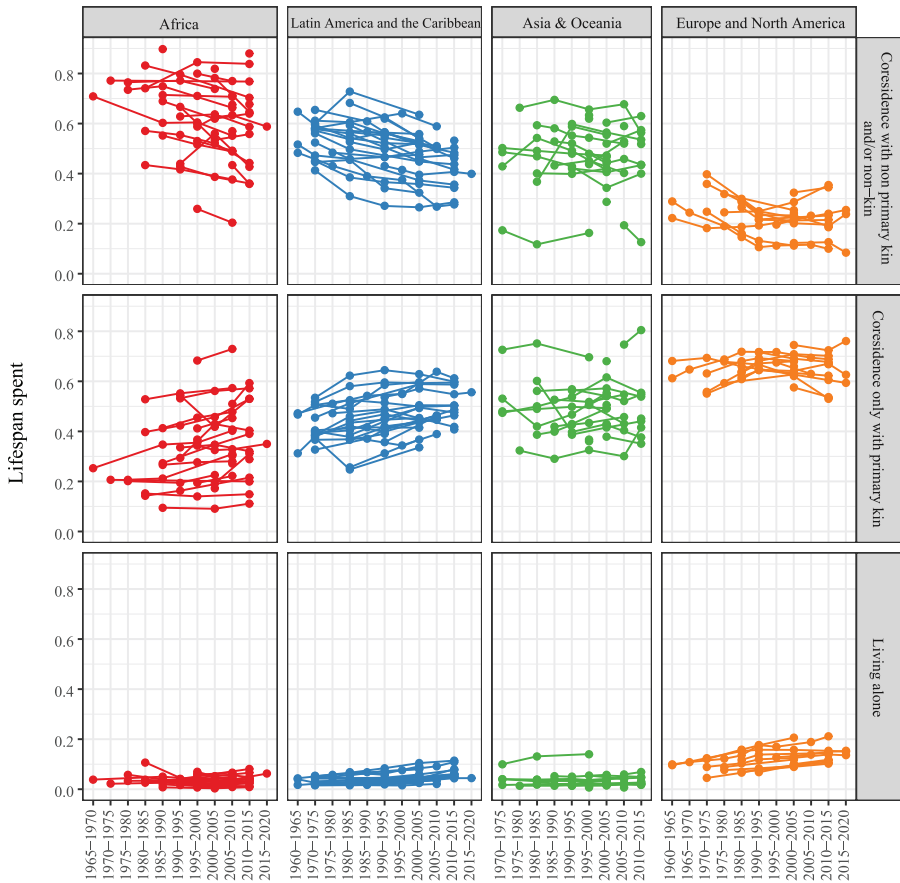


SOURCE: Own elaboration based on IPUMS international census microdata and United Nations mortality data.

importance of living alone in each country. Different pastel colors represent different types of nuclear (primary kin) living arrangements. Green bars represent living arrangements with the presence of nonprimary kin and/or others. The total height of each bar corresponds to the life expectancy at birth at the census date, and thus can be interpreted as the number of years a hypothetical ego will live in different living arrangements. We organize results by macro world region (Africa, Latin America and the Caribbean, Asia and Oceania, and Europe and North America) as well as by prevailing levels of life expectancy from low to high within each macro region.

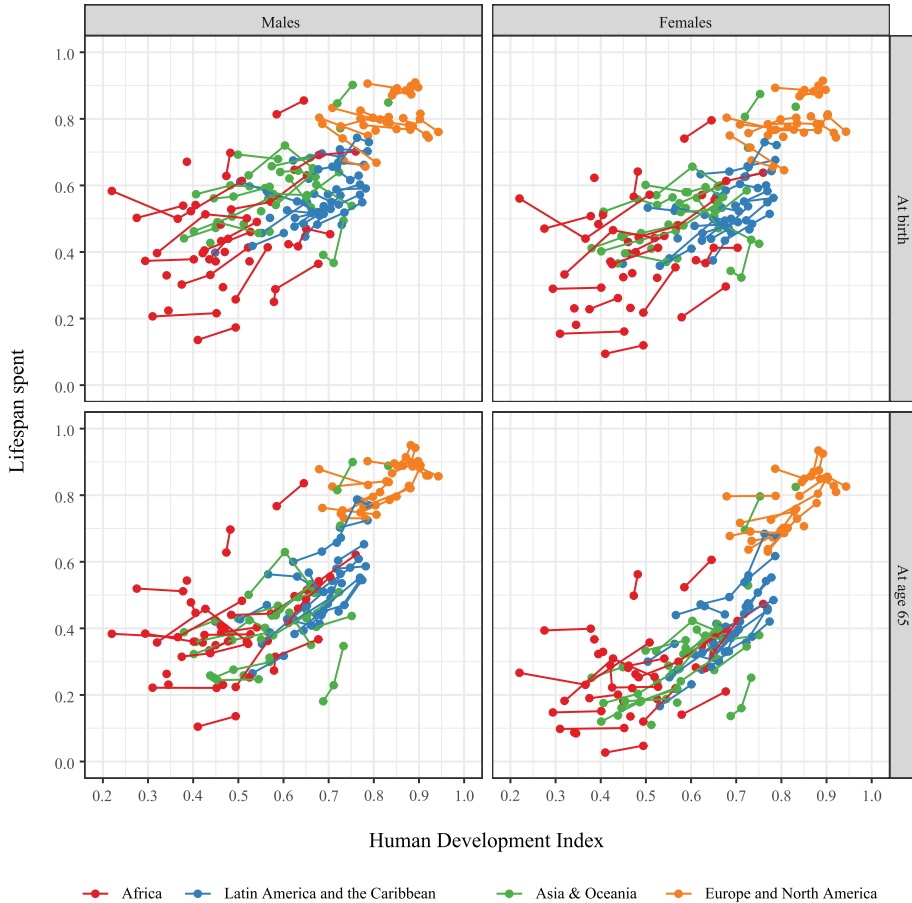
The results suggest that in most African countries the majority of people's lives are spent living with nonprimary kin, with mixed results showing for countries of Asia & Oceania and Latin America and the Caribbean, and

FIGURE 2 (continued)



the great majority of people's lives spent only with nuclear or primary kin for people in most developed countries. Living arrangements are radically different in some parts of the world in comparison with others. When combining living alone with living arrangements based only on primary kin, the importance of this grouping represents as much as 90 percent of people's life expectancy in some nations, especially those located in the developed world, and as little as 20 percent in a great number of countries, especially those located in the continent of Africa. Grouping by continents provides only an approximate representation of diversity because there are numerous exceptions. In Africa, for example, living arrangements based exclusively on primary kin are relatively more important in Northern Africa, Ethiopia, Nigeria and in Uganda, while coresidence with nonprimary kin is far more important in countries like Senegal, Togo, Guinea, Sierra Leone and Lesotho. In Latin America and the Caribbean, living arrangements based on primary kin alone are more frequent in

FIGURE 3 Relationship between the Human Development Index and the total life span spent living alone and/or coresiding only with primary kin in relative years of life expectancy at birth (Panel A) and at age 65 (Panel B). All samples



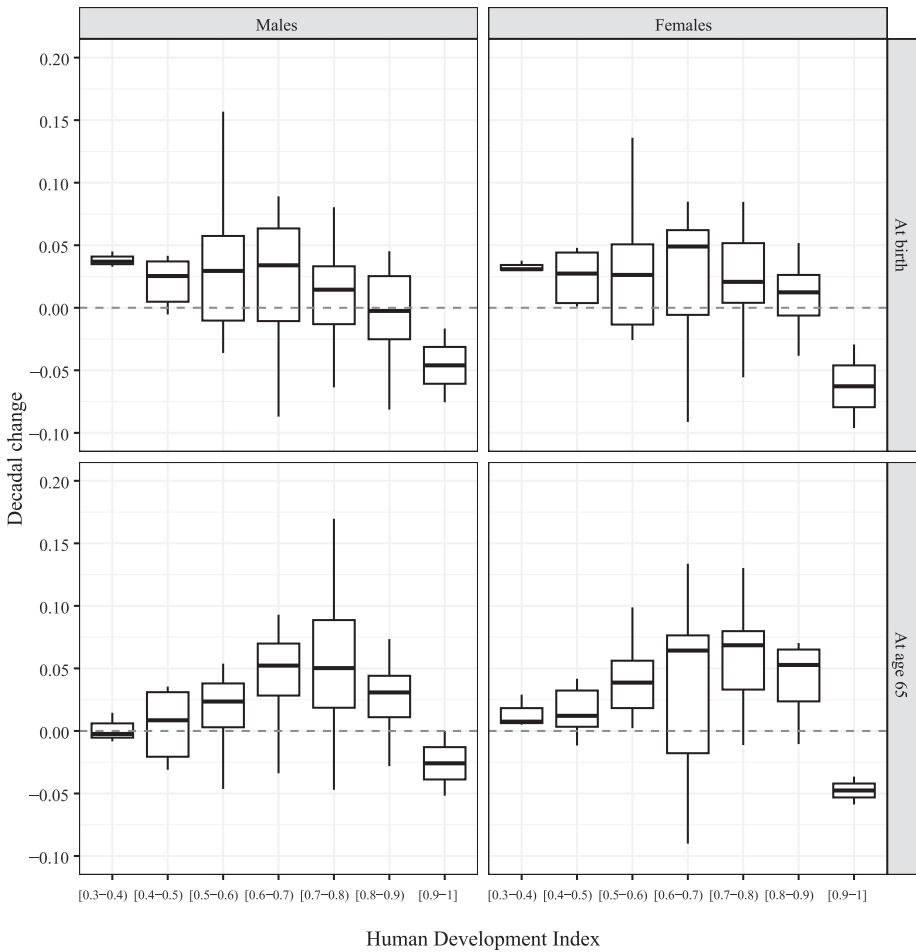
SOURCE: IPUMS-international census microdata. UN mortality and HDI data.

countries like Costa Rica, Puerto Rico, and Uruguay and much less important in most of Central America and in countries like Haiti and the Dominican Republic. In Asia, living arrangements based only on primary kin are relatively more important in Israel, Iran and Jordan, and much less so elsewhere. Finally, in Europe and North America, nuclear-kin households are far more prevalent in Western and Southern Europe and in the United States, than in the Eastern part of the continent.

Change over time

Important changes in living arrangements take place during the relatively short period where empirical data are available (see Figure 2). This figure

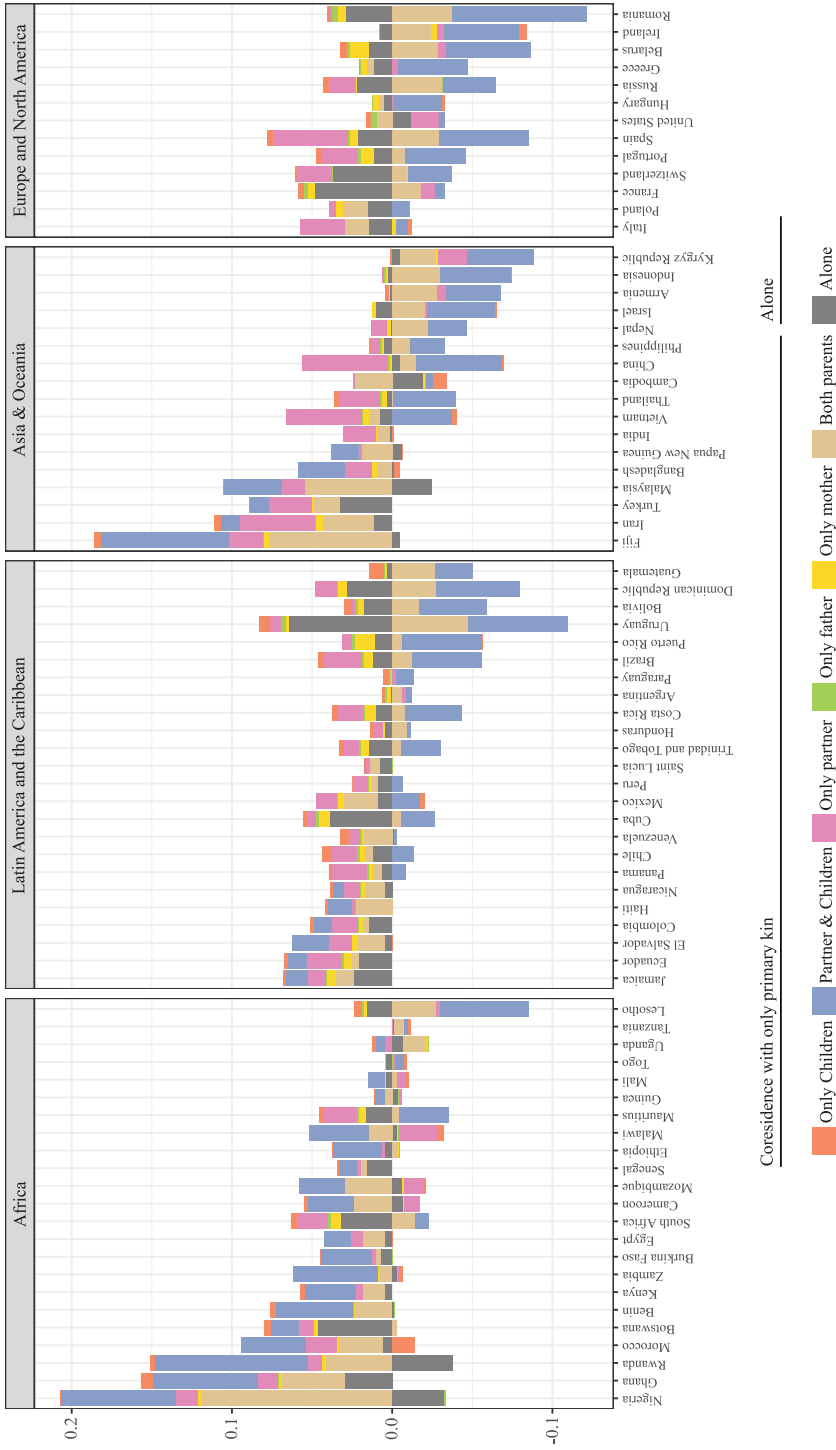
FIGURE 4 Cross-national variations in decadal change in proportion of life expectancy at birth and at age 65 living alone or only with primary kin by level of Human Development Index. Most recent change since year 2000



SOURCE: Own elaboration based on IPUMS international census microdata and United Nations mortality data.

has 12 different panels, and we have created it for both men (Figure 2A) and women (Figure 2B) with practically identical results. In the top row, we see time trends of the lifetime exposure to nonprimary kin and/or non-kin over time, organized by macro world region. The second row shows the relative importance of coresidence only with primary kin, and the third row shows the importance of living alone. Since the relative importance of given living arrangements has been used, for this figure the values shown do not include the influence of life expectancy. In this way, for example, a trend toward a decline in the importance of coresidence with nonprimary kin and/or non-kins implies, by definition, either an increase in coresidence

FIGURE 5 Decadal change in time spent in different living arrangements (in proportion of total life expectancy at birth) by country. Most recent change since year 2000. Males



SOURCE: Own elaboration based on IPUMS international census microdata and United Nations mortality data.

only with primary kin and/or an increase in living alone. It also means that for any given country and date, the sum of all three panels will be 1. We have preferred to use relative values here because for this period net increases in life expectancy hold for all countries and this could potentially translate into increasing time trends for all three living arrangements. The time trend is indicated by a line joining the dots corresponding to different census years (as many as six censuses for some countries, and only be one or two for others).

In African countries, where the starting point shows the highest values of exposure to nonprimary kin of the entire sample, with many countries indicating that people spent a large part of their lives living with nonprimary kin and/or non-kin, the trend toward a decrease is often very strong, especially in more recent years (see Data Appendix in the Supporting Information). For example, in Botswana during the early part of the 1980s, nearly 80 percent of people's lives were spent living with nonprimary kin and/or non-kin, while by 2010–2015 this percentage had declined to around 63 percent. A similar downward trend in exposure is shared by many countries in Africa. In Latin America and the Caribbean, starting levels of coresidence with nonprimary kin are much lower than in Africa, but the downward trend is just as noticeable. In Brazil, for example, in the mid-1970s, people spent just under 40 percent of their life span coresiding with nonprimary kin and/or non-kin, but close to 30 percent by 2010–2015. In Asia and Oceania, some nations show very little change, while in others there is also pronounced decline, with countries like Indonesia and Bangladesh showing declines from 40 percent around 1980 to 30 percent by 2010–2015. The decline in coresidence with nonprimary kin and/or non-kin, as well as the generalized process of increasing nuclear coresidence in this part of the world (see the second row of data in this figure) are fully corroborated by these data. Finally, in Europe and North America, where the starting levels of living arrangements based on nonprimary kin and/or non-kin are by far the lowest, initially there also appears to be a widespread decline in its importance lasting until approximately 1990, followed by a modest yet evident rebound after that date. In sum, the decrease in Europe and in other developed nations appears comes to a halt around 1990, with no trend or even modest increases in coresidence with nonprimary kin characterizing most of the countries in this region after the turn of this century, despite the overall persistence of generally low levels in comparison to the rest of the world.

In the two bottom panels part of Figure 2, trends in coresidence in world regions are organized according (a) to living arrangements exclusively with nuclear kin, and (b) to living alone. Here our interest is mainly in how these time trends affect the most developed world. When looking specifically at strictly nuclear coresidence, the downward shift for the most part also dates from 1990, but appears to be much stronger than the trend

in the reverse direction appearing in the top panel of Figure 2, where living with nonprimary kin and/or non-kin is shown. In many countries, during this rather brief lapse of time, coresidence only with nuclear kin goes from representing more than 75 percent of the life experience of people to levels near 65 percent in many countries. In the United States, for example, where the downward trend change starts earlier (the decade of the 1970s), the importance of nuclear coresidence declines from about 75 percent to close to 63 percent. In the most developed world, the long-term trend toward an increasing importance of nuclear living appears to have completely reversed. The third factor in play here is living alone (the third panel of this figure) that shows important increases in the Americas, especially after 1995, and spectacular increases throughout Europe and the United States dating from the onset of the period under study (going from 5 to nearly 15 percent of people's life spans).

These results, themselves of great interest, suggest that during this brief period in this corner of the world more and more people were living alone while, at the same time, the importance of strictly nuclear coresidence was in pronounced decline and that of living arrangements with nonprimary kin and/or non-kin either level or increasing modestly. In the United States, where detailed data are available for this last category, data suggest that the resulting trends were more the result of modestly increasing coresidence specifically with nonprimary kin, than they were of residence with non-kin. In sum, we are confronted by a complete reversal of the basic historical pattern toward increasing importance of nuclear living arrangements coupled with decreasing levels of coresidence involving nonprimary kin and non-kin holding since the mid-twentieth century in many world regions shown in Figure 2. It constitutes a shift that warrants further examination.

The importance of development

Despite the evident limitations of such a brief time perspective, a goal of this paper is to ascertain the extent to which living arrangements and their change over time are linked to shifts in development as expressed by the HDI. In Figure 3, development (HDI) (horizontal axis) is shown in terms of the time lived either with primary kin or alone over the entire life course (vertical axis) for both males and females. It offers conclusive evidence that everywhere higher levels of development are associated with a greater importance of living arrangements with primary kin or living alone. When tracking change over time in specific countries, however, there is also some indication that growth in HDI is correlated with growth in nuclear living. This pattern, however, is not uniform. In many countries, but not in all, increases in development appear to lead to an increase in the importance of living with nuclear kin or living alone, but not in others. The links between both indicators appear to be stronger in lower and middle-income

countries, and weaker in the most developed societies. These results provide some support for the idea that higher levels of development lead to an increasing importance of primary-kin households in specific countries. They may be, at least in part, the product of using relatively short time trends for both indicators.

This portrayal comes into somewhat sharper focus if we look at the number of years lived exclusively in nuclear-kin households and alone among people 65 years of age and older (Figure 3, bottom panels). Here the time trend is quite clear for many countries, as is the fact that countries with higher levels of HDI invariably have much higher levels of nuclear living (highest in the most developed countries, followed by Latin America and the Caribbean, then Asia and finally lowest in Africa where the time trend is much less clear). Only countries with at least two data points are included in this analysis. We are showing change spanning a decade. When the two data points are separated for more or less than a decade, the observed change has been adjusted using simple extrapolation or interpolation. Estimates of change over time have been adjusted to a decade of change (see Data Appendix in the Supporting Information). The length of the individual country-based time trends is by far the greatest in the developed world where modest increases in development lead to vast increases in the time lived in primary-kin households or alone. France, Italy, Spain, Ireland are standouts on this count. The role of development and of increasing longevity, associated with better underlying health, and the way they affect the living arrangements of the most elderly members of society emerge as a key issue for understanding recent change around the world.

A number of these issues come into sharper focus if the links between growth in nuclear family living plus solo living are grouped by prevailing levels of development. Figure 4 shows all countries included in our sample, though the end box plots have very few countries. The top panels refer to growth in nuclear living among the entire population, and the bottom panels show the situation holding for males (right) and females (left) over 65 years of age. As before, the results for the elderly are sharper than for the entire population. In both cases, countries with medium levels of development are those where changes in living arrangements are greatest, while those on the extremes are countries where change is lowest. For the box-plots on the top, in countries where development is highest, there is no indication of increasing nuclearization and even some signs of decline (in Ireland and the United States, specifically).

The components of recent change

The components of change between the two most recent census counts show a world in the throes of important transitions (Figure 5). The structure of this figure is similar to others in this paper where countries are ordered

within macro regions by the combined relative gain in exposure to different kinds of primary kin and to solo living over time. We only show results for males. Bars above the 0.0 line include different types of primary kin coresidence and living alone where yearly growth rates are positive, while bars beneath this line reflect declines. Due to the nature of the indicator, the sum of different bars amounts to the total growth or decline of the overall indicator for living with primary kin and living alone in any given country. There are two ways to read the results from this figure: one with a global perspective and the other focusing on country specific variations.

Since the indicator used here is based on changes in relative values of different types of coresidence involving only primary kin or living alone, whenever the sum of the upward bars (indicating growth) is greater than that of the downward bars, the result indicates a net growth in coresidence based on primary kin or on living alone (Appendix 5 in the Supporting Information). A net decline, however, indicates, by definition, growth in coresidence involving nonprimary kin and/or non-kin. This result refers to changes taking place between the two most recent censuses (after 2000) in each country. In line with much of the rest of this paper, our result shows a generalized pattern of growth in nuclear living arrangements in practically all of Africa and in the majority of Latin America and the Caribbean (with the exception of Puerto Rico, Bolivia, the Dominican Republic, and Guatemala). In Asia, the process of nuclearization is strong in just over half the countries, but also clearly negative in others (Philippines, Nepal, Israel, Armenia, Indonesia, and the Kyrgyz Republic). In Europe, it is mostly negative in Hungary, Russia, Greece, Belarus, Ireland, Romania, and the United States. The importance of these negative cases points to a pattern of some growth in coresidence with nonprimary kin and/or non-kin that also appeared in the results shown earlier in Figure 2.

In nearly all African nations, in much of Latin America and the Caribbean and in Asia and Oceania it is clear that all or nearly all of the components of coresidence with primary kin are on the rise, leading to relatively higher levels of growth in our indicator of the years lived with nuclear kin or alone. In much of Africa and in a large part of Asia this situation is very clear. In Latin America and the Caribbean, growth in living with primary kin or alone is also clear, though the rate of growth appears to be lower. All of these are societies where a substantial decline in fertility is only relatively recent and where kinship networks are strong and continue to grow. In other parts of the world, there is abundant evidence of an incipient decline in different types of coresidence based only on primary kin coupled, at times, with important increases in the number of people living alone. These are societies where fertility is often very low and has been so for some time. They are also societies with rapidly shrinking kin networks. In a number of them, there is some indication of an incipient transformation of households

related to the direct or indirect effects of the postponement of marriage and childbearing together with higher union dissolution. The modest increases and even declines in the relative importance of children living with both parents is an example of this. Equally evident is a decline in the number of people living with partners/spouses and offspring, where growth rates are often highly negative, especially in many parts of Europe and in a significant number of countries in Asia and Oceania and Latin America and the Caribbean. The overall rise in the prevalence of living with only a mother, only a father or only with a partner also tends to reflect marital instability.

In sum, the relatively recent past provides some evidence of a rebound in the presence of nonnuclear kin in households, points to a substantial growth in many other countries in the importance of nuclear kin links and offers some indication that nuclear living is being reduced to a bare minimum in a small but growing number of developed countries. The extent to which this last point is a result of a progressive fragmentation of the nuclear family in some areas of the world warrants further consideration. This could be in consonance with behaviors related to the spread of values associated with the second demographic transition.

Discussion

Based on international census microdata for 90 countries around the world and making use of innovative estimation techniques, this paper has provided empirical proof for a number of key findings. (a) At the outset of the twenty-first century, there continued to be a wide diversity of family forms around the world, including some regions where a large part of people's life span was spent living in large families with an abundant presence of nonprimary kin and/or non-kin (e.g., many African countries) and others where the vast majority of peoples' lives took place in households with only nuclear kin (e.g., most European countries). (b) The growth in the importance of living arrangements based only on primary kin around the world over the past half century is especially strong in countries where starting levels were lower. (c) Links between this growth and indicators of development are fairly weak but come into sharper focus when looking at the growth of years lived with primary kin among people above 65 years of age. (d) Between the two most recent censuses, in much of the world growth in all of the components of primary-kin households has been significant. (e) There has also been an important slowing or even reversal of this growth in areas where their importance is highest, accompanied by indications of incipient declines in components linked closely to the presence of offspring and partners in society. (f) Starting toward the end of the twentieth century, there is evidence of an important shift in the living arrangements holding in the most developed world characterized by an apparent end to the long-term decline in coresidence involving nonprimary kin and/or non-kin,

together with declines in the importance of nuclear living arrangements and significant growth of people living on their own. This last result is surprising, especially in Europe, and has only recently started to get recognized by scholars (Burgess and Muir 2020; Esteve and Reher 2021; Fry and Passel 2014; Glaser et al. 2018; Pew Research Center 2010, 2022b, 2022a; Pilkauskas et al. 2020). Shrinking household size in much of the world provides the backdrop for these key changes in kin-based coresidence.

Should current trends continue, in the relatively near future we can expect a continued growth of nuclear living arrangements in much of the world. We can also expect, however, slow or negative growth, coupled with a continuing trend toward a fragmentation of the components of kinship, in societies where living with nuclear kin is highest. Quite possibly, this will take place together with increases in the importance of living arrangements either alone or those involving persons unrelated by kinship. These trends will have important implications for policy, for society, and for the meaning itself of the family and of family life in different parts of the world. In these aging societies, the capacity of families to establish this kind of (traditional) support networks for the health and well-being of their vulnerable members raises significant concerns (Furstenberg et al. 2015; Mason et al. 2022).

It is often held that development is a major determinant of the importance of the nuclear family because it enables family groups to live in small units and, when the need arises, to avail themselves of institutional supports such as day care that tend to be widespread in societies that can afford them. This study does not offer conclusive proof or disproof of this premise. It does point, however, to the major role potentially played by fertility and mortality in shaping kin networks and their needs and invites further research on the re-emerging demography of kinship (Caswell 2019; Albrez-Gutierrez et al. 2022). Where networks are dense in human and social capital, kin available for co-residence are abundant and will be in demand. As these networks shrink, these kin will be increasingly concentrated in living arrangements based only on primary kin, and the presence of nonprimary kin in households around the world will tend to decrease in importance. Mortality also plays a role, especially because of its implications for health and longevity as well as the way it affects the number of available kin.

Once again, the timing and pace of the demographic transition emerges as a key factor in explaining the long-term trends of major social indicators (Reher 2004, 2011). This supply-based emphasis on kin availability does not negate the importance of culturally constrained preferences and values for family development over time, but it does appear to be a key marker for the timing and intensity of change. Development is, of course, important, but cannot be considered the sole factor. When kin networks shrink to their bare minimum, the realm of conscious choice tends to emerge as a key element in shaping family life. The influence of the second demographic transition on family structures in North America and Europe

and, potentially in many other societies around the world in the future, serves as a pertinent example (Lesthaeghe 2010). The current surge in international migration may alleviate some of the importance of kin networks for coresidence because of the way it spreads sources of family income and diminishes the density of local kin networks.

Moving a bit further back in time, these findings suggest that the importance of extended family life in much of the developing world may have peaked in the 1950s or 1960s, when fertility remained exceptionally high and mortality was already in sharp decline in many parts of the world. At the same time in the more developed world, the demographic transition was nearly complete, the impacts of the baby boom were relatively less important and kin networks were relatively small in scale. It was during this period that kin networks must have been largest in one part of the world at a time when ideas of change were, at best, limited. By contrast, in the developed world, fertility and mortality were already relatively low and, by implication, kin networks were relatively small, nuclear living was the norm, and ideas of change were pervasive. In fact, in the developed world where the entire demographic transition was characterized by closely aligned patterns of fertility and mortality and relatively low levels of population growth, it can be inferred that kin networks were consistently modest in size and nuclear living was widespread well before the onset of the twentieth century.

A key, albeit surprising, finding of this paper is the evidence it provides of a recent trend reversal currently taking place much of the most developed world involving important declines in coresidence only with primary kin, important increases in living alone, and modest increases in coresidence with nonprimary kin and/or non-kin. This recent trend is likely related to the spreading effects of the second demographic transition, to increasing longevity, to shrinking kin networks and to the increasing difficulties experienced by families in much of the world (Esteve and Reher 2021). Could it constitute the most recent stage of a fundamental pattern of family development over time outlined, at least in part, in this paper? Possibly. Although speculative, this viewpoint warrants further investigation.

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Appendix 1: Strategy to classify living arrangements from an individual perspective using IPUMS family interrelationship variables

A) IPUMS source variables considered :

PERSONS = Number of person records in the households

FAMSIZE = Number of own family members in household

FAMSIZE counts the number of the person's own family members living in the household with her/him, including the person her/himself. These include all persons related to the person by blood, adoption, or marriage as indicated by the census forms or inferred from them.

FAMSIZE is calculated from the units identified in the IPUMS constructed variable FAMUNIT (family unit membership). The primary family is defined as all persons related to the head in the RELATE variable. Secondary families are individuals or groups of persons linked together by the IPUMS constructed pointer variables SPLOC, MOMLOC, and POPLOC (location of spouse, mother, and father).

MOMLOC = Mother's location in household

POPLOC = Father's location in household

SPLOC = Spouse's location in household

NCHILD = Number of own children in household

NCHILD_MOM = for each child, this corresponds to the number of own children of the mother located in the household

NCHILD_POP = for each child, this corresponds to the number of own children of the father located in the household

B) Coding for individual level dummies for dyads of coresidence

Step 1. Total number of coresident persons (T)

$$T = \text{PERSONS} - 1$$

Step 2. Total number of nonfamily coresident persons (O)

$$O = \text{PERSONS} - (\text{FAMSIZE} - 1)$$

Step 3. Coresidence with father (F)

if POPLOC > 0, then F = 1; if POPLOC = 0 then F = 0

Step 4. Coresidence with mother (M)

if MOMLOC > 0 then, M = 1; if MOMLOC = 0, then M = 0

Step 5. Coresidence with mother only (oM)

if F = 0 and M = 1 then, oM = 1; else oM = 0

Step 6. Coresidence with father only (oF)

if F = 1 and M = 0 then, oF = 1; else oF = 0

Step 7. Coresidence with both parents (MF)

if F = 1 and M = 1, then MF = 1; else MF = 0

Step 8. Coresidence with own children (C)

if NCHILD > 0, then C = 1; else C = 0

Step 9. Coresidence with spouse (S)

if SPLOC > 0 then S = 1; else S = 0

Step 10. Coresidence with siblings (Sib)

If NCHILD_MOM > 0 and (NCHILD_MOM = NCHILD_POP or NCHILD_MOM > NCHILD_POP), then Sib = NCHILD_MOM - 1;

If NCHILD_POP > NCHILD_MOM; then Sib = NCHILD_POP - 1

Step 11. Total number non- primary kin coresident persons (NPK)

$NPK = T - O - F - M - C - S - Sib$

Step 12. *Coresidence with non-primary kin (N)*

If $NPK > 0$, then $N = 1$; else $N = 0$

C) Coding for typology (T) of individual arrangements (N)

Create $N = 30$ (Living with non-primary kin and or non-kin)**

If $T = 0$; then $N = 10$ (Living alone)

If $MF = 1$ and $NPK = 0$ and $O = 0$; then $N = 21$ (Living with father or mother)

If $oM = 1$ and $NPK = 0$ and $O = 0$; then $N = 22$ (Living with mother only)

If $oF = 1$ and $NPK = 0$ and $O = 0$; then $N = 23$ (Living with father only)

If $S = 1$ and $C = 0$ and $NPK = 0$ and $O = 0$; then $N = 24$ (Living with partner and no children)

If $S = 1$ and $C > 0$ and $NPK = 0$ and $O = 0$; then $N = 25$ (Living with partner and children)

If $S = 0$ and $C > 0$ and $NPK = 0$ and $O = 0$; then $N = 26$ (Living with children and no partner)

** The order of this set of coding lines matter. The latest instruction overwrites de previous one.

If $N = 10$; $T = 1 =$ Living alone

If $N = 21$ or 22 or 23 or 24 or 25 or 26 ; then $T = 2 =$ Living with primary kin only

If $N = 30$; then $T = 3 =$ Living with non-primary kin and or non kin