Determinants of Residence with Kin:

A Comparative Analysis of 300 samples of 90 Countries, 1703-2023

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Abstract

This paper presents new comparative findings about the living arrangements of older people in 90 countries, based on analysis of over 300 censuses and surveys taken between 1703 and 2023. In particular, we assess the relationship of basic demographic and economic conditions to and residence with kin. The analysis exploits all IPUMS International and IPUMS USA samples that include the requisite information. The dependent variable is the percentage of persons aged 65 or older residing with kin other than a spouse (usually adult children). The main independent variables are agricultural employment among working age men, percent of the population aged 65 or older, and measures of marital fertility and age at marriage. Our preliminary analysis using OLS at the sample level indicates that these variables can account for an extraordinary 84% of the variation in residence with kin. This simple model can account for the great bulk of cross-temporal and regional variation in residence with kin, including the dramatic decline in coresidence that has occurred in Northwest Europe and North America. We are now extending the analysis to incorporate subnational demographic and economic measures and individual-level covariates.

Extended Abstract

Social theorists from Le Play to Goode proposed that economic development was associated with simplification of family composition. In agricultural societies, theorists have argued, kin ties were reinforced by life-course labor needs and inheritance of property. Others point to the loss of specialized functions of the family and weakening of kin ties with technological change, and new social institutions. The rise of wage labor meant that younger generation men increasingly had an attractive alternative to agricultural inheritance, and older generation wage earners no longer needed the labor provided by adult children. Moreover, when wage earners grew old, they no longer hand an agricultural inheritance to offer as an incentive to keep their adult children at home.

This paper seeks to assess how much of the worldwide variation over time and space in coresidence of the older population can be attributed to basic indicators of the economic and demographic structure of society. We exploit the billions of records in the collections of IPUMS, which include hundreds of censuses and surveys gathered over the course of three centuries. The earliest data all derive from Northwest Europe, with observations from North America appearing in the mid-nineteenth century. For the rest of the world, the IPUMS data begin in the mid-twentieth century.

To maximize comparability across time and space, we limit the analysis to a simple set of variables. The key dependent variable is the percentage of persons age 65 or older who reside with kin other than a spouse. As we have argued at length elsewhere, measuring family composition from the perspective of the older generation greatly simplifies the task of accounting for the impact of demographic conditions on the availability of kin for coresidence. Because of variations in the detail provided on family inter-relationships across censuses, more detailed measures of family composition—such as residence in three-generation families—pose comparability problems. For example, some censuses do no identify grandchildren, and some do not identify parents-in-law. In all countries and all periods, the overwhelming majority of persons aged 65+ with kin resided with adult children, with or without children-in-law or grandchildren.

Fig 1. Percent of 65+ Residing with Kin:
302 IPUMS Samples, 1703-2020

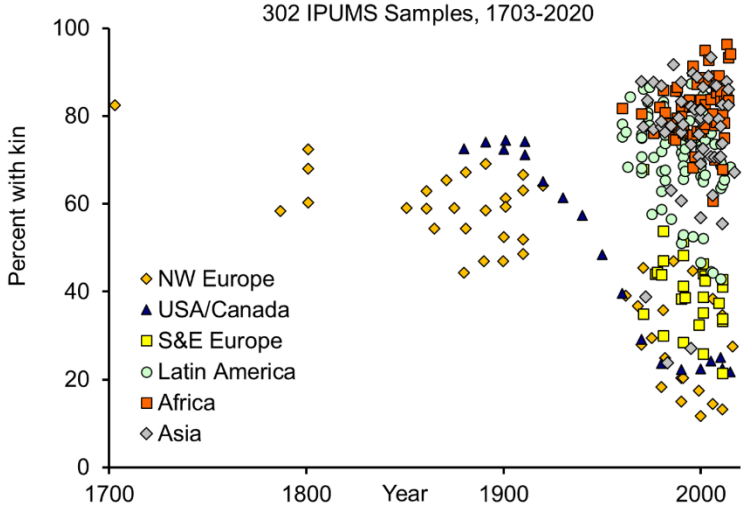
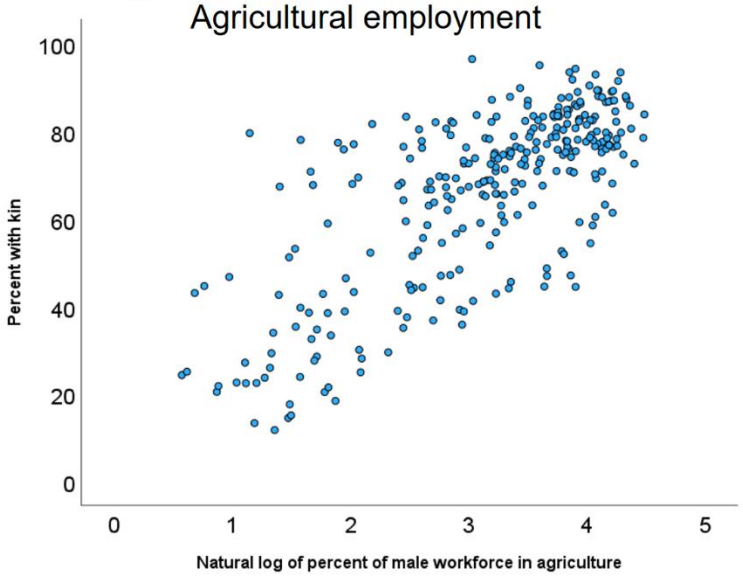


Figure 1 shows the spatial and temporal distribution of residence with kin ranges from a low of 11.7% in Switzerland in 2000 to a high of 96.4% in Senegal in 2013.

The key economic indicator in this analysis is the natural log of the percentage of the male labor force (age 18-64) engaged in agriculture. This is one of the most consistently available economic indicators across all IPUMS samples, and it closely corresponds to theoretical interpretations of family change. As shown in Figure 2, a log transformation of the variable reveals a linear relationship between agricultural employment and residence with kin: populations with high levels of farming also have high levels of residence with kin.

Fig 2. Residence with Kin and Agricultural employment



The most important demographic control is percent of the population over 65. Populations with a small percentage of persons aged 65 and older generally have high fertility and high mortality. In this population structure, the opportunities for the aged to reside with kin are maximized; there is a small group of older persons in a sea of younger ones, and there will typically be multiple opportunities to reside with kin. In low-fertility low-mortality societies, by contrast, the

old often have limited demographic potential to reside with their children or other relatives. Other demographic controls include marital fertility—which more directly measures the potential to reside with children—and age at marriage, which affects generation length.

Our preliminary OLS analyses of these variable provided striking results, shown in Table 1. Model A shows the regression of agricultural employment and demographic conditions on the measures of living arrangements of the aged. These two variables by themselves could account for 78% of the variation in residence with kin across countries. This is a lower bound because of measurement error; variation in enumeration procedures, occupational classifications, family relationship classification, quality of age reporting, and random error would all tend to attenuate the R-squared.

Table 1. OLS Regression of Agricultural Employment and Demographic Variables on Percent of Elderly Residing with Kin

	Model A		Model B	
	B	Std. Error	B	Std. Error
Agricultural employment	5.84	0.80 ***	6.90	0.70 ***
Percent elderly	-3.25	0.19 ***	-3.62	0.18 ***
Marital fertility			-0.20	0.03 ***
Female SMAM			-2.08	0.32 ***
Male SMAM			2.70	0.34 ***
Constant	70.65	3.57 ***	43.10	7.33 ***
Adjusted R Square	0.78		0.84	
N	302		302	

*** p<.001 ** p<.01 * p<.05

Model B adds marital fertility and Singulate Mean Age at Marriage (SMAM). These additional controls increase the impact of agricultural employment and percent 65+ and raise the overall R Square to 0.84. Note that female SMAM is negative and male SMAM is positive. This could be an reflection of patriarchy—in patriarchal societies there tends be a large age gap between husbands and wives.

Figures 3 and 4 show scatterplots of the observed percent residing with kin by the percent predicted by model B. Each dod is a census sample; Samples above the diagonal have less residence with kin than predicted, and samples below the line have more coresidence than predicted.

Fig. 3 Observed and Predicted Percent Residing with Kin by Period

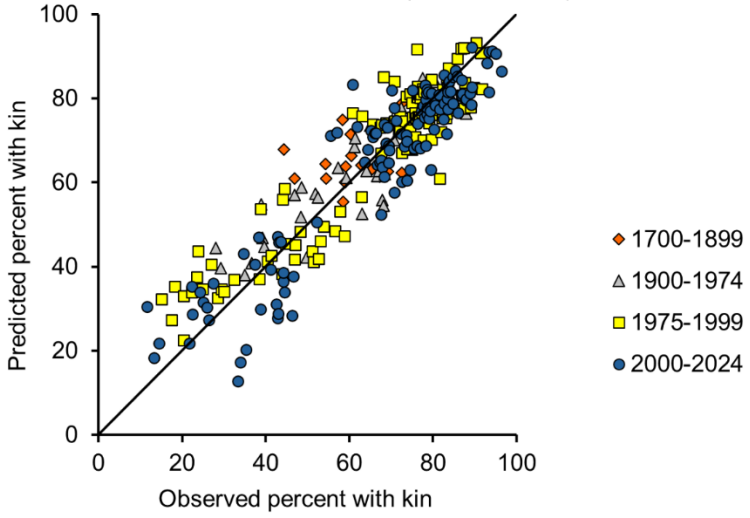


Figure 3 is broken down by period. Among the early samples, a few cases have less coresidence than predicted, but most are pretty clustered around the 45-degree line. Likewise there are no clear patterns in the 1900-1974 period or in 1975 – 1999, except among the lowest coresidence groups, where the decline in residence with kin is a little less than predicted by the regression. Note that the greatest overall diversity in both predicted and observed coresidence is in the recent period. That probably reflects the great diversity of the countries included in IPUMS in the recent period.

Fig 4. Observed and Predicted Percent of 65+ Residing with Kin by Region

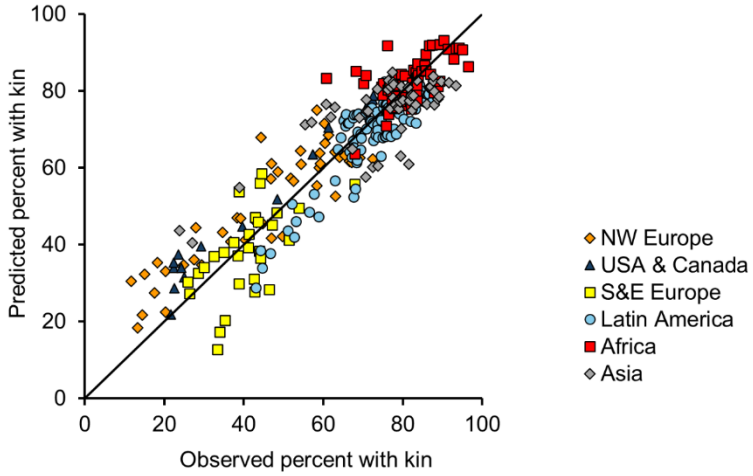


Figure 4 is subdivided by region. In most regions, there are no clear patterns of divergence between observed and predicted. The biggest outliers are recent three samples from Spain and Italy where overserved coresidence is significantly higher than would be expected given their demographic circumstances and agricultural employment.

We conclude that once we control agricultural employment and a few basic demographic variables, there is little variation across time or space in the percentage of persons 65+ residing with kin. The decline of agriculture and the demographic transition are sufficient to explain the entire decline of coresidence in NW Europe and North America observed overt the past two centuries. So far, there is no sign of convergence in living arrangements of the aged; the most recent period has the greatest variation in both living arrangements and in predicted living arrangements. If the demography and economics of the world converges, however, the convergence in family composition predicted by Goode may occur.

In the coming months, we plan to extend this analysis is two respects. First, we will estimate multilevel models controlling for individual-level and subnational district characteristics as well as national characteristics. Second, we will add more samples (new IPUMS samples and perhaps additional sources including Mosaic and survey data).