Unraveling the Pathways to Involuntary Childlessness in a Low Fertility Context: A Multichannel Sequence Analysis of Spanish Women

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Abstract

Involuntarily childless women (ICW) are a growing group in societies with low and very low fertility. Examining their characteristics and life paths is paramount for informing public policies. In Spain, 15% of women born between 1962 and 1973 are ICW. We use the Spanish Fertility Survey (2018) and implement a Multichannel Sequence Analysis to establish the different "types" of ICW. We finish describing the characteristics of the "types", paying special attention to changes in their shares over birth cohort. Our results show the existence of four "types" of ICW. Three of them resemble the "career oriented", "family oriented", and the "adaptative women" "types" proposed by Hakim's Preference Theory. We define the remaining one as "stayers", encompassing women who have resided in their parental home throughout most of their reproductive years and have almost never lived with their partners. We demonstrate that the distribution of these "types" is undergoing rapid changes across cohorts: the percentage of those categorized as "family-oriented" is decreasing, while the proportion of "career-oriented" ICW is on the rise.

Keywords

Introduction

Spain is one of the most extreme cases of very low and very late fertility. Specifically, it is the OECD (Organisation for Economic Co-operation and Development) country with the sixth lowest Total Fertility Rate (TFR, 1.36 children per woman) and with the highest mean age of women at first birth (31.6 years) (OECD, 2020). This is the result of a very large gap between the desired (around two children per woman) and the achieved number of children, which is larger than in most European countries (Castro et al., 2018; Sobotka & Beaujouan, 2014). Using data from the 2018 Spanish Fertility Survey (SFS), Figure 1 shows the share of women who have, or have not, achieved their desired number of children, by age and parity. Looking at women who have completed their reproductive period (45 and older), we observe that 37% have not achieved their desired number of children. This figure varies by parity, it is lower among mothers of two (23%) and of three or more children (12%), and much higher among mothers of one (49%) and childless women (59%). In this context, we aim to analyze childless women who have finished their reproductive period and wish they had had children. We will refer to this group as involuntarily childless women (ICW).

From a demographic perspective, ICW are a sizeable group, accounting for 15% of women born in Spain between 1962 and 1973 (SFS, 2018). Here we argue that it is of utmost importance to understand the different subgroups of women who end up being part of this group, as well as the changes over birth cohort in the population shares of each subgroup. Specifically, we pursue two goals: first, study if there is a high level of homogeneity within this group, and if not, identify the number of subgroups and the characteristics of each of them; second, show if the population share of each subgroup is different for the women born in the 1960s and the early 1970s.
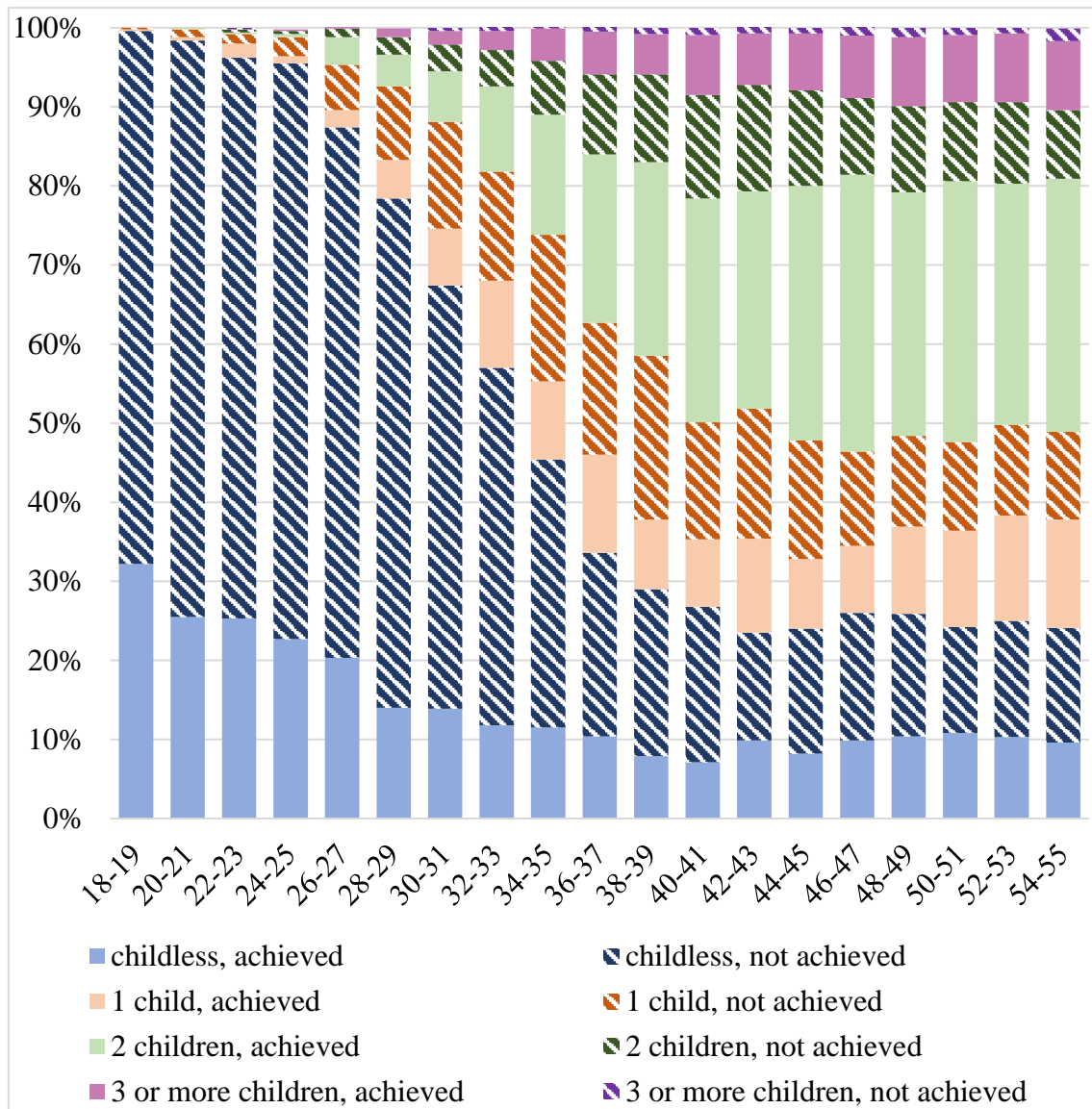
Figure 1. Women born in Spain by whether they have achieved their desired number of children or not, by parity and age. Source: Spanish Fertility Survey (INE, 2018).

Data, methods, and descriptive information

We analyze the SFS, carried out in 2018 by the National Statistics Institute of Spain. We select women born in Spain between 1962 and 1973, who at the moment of the survey were between 45 and 56 years old and had finished their reproductive years. We focus on childless women who wish they had had children, so our final sample consists of 710 cases. In order to study the existence of subgroups with specific characteristics in our

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final sample, we implement a Multichannel Sequence Analysis (MCSA). We consider four relevant trajectories. The first one is the labor marker trajectory, and it has three states: never worked, ever worked, stable job achieved. The second one regards the age when women achieved their highest educational level, so it has two states: not achieved and achieved. The third one considers the age when women left the parental home, it has two states: living at the parental home and have left the parental home. The fourth one is about the partner trajectory and has two states: not living with a partner and living with a partner.

Table 1. Descriptive statistics of the sample. Source: Spanish Fertility Survey (INE, 2018).

Year of birth	1962-1965	34,4
	1966-1969	34,5
	1970-1973	31,1
Years lived with a partner before turning 45	Never	24,2
	Less than 10	13,2
	Between 10 and 20	37,0
	More than 20	25,5
Leaving parental home	Never	20,1
	After 30	17,0
	25-30	30,3
	Before 25	32,5
Educational attainment	Elementary	30,4
	Secondary	39,3
	University	30,3
Labor market trajectory	Never had a job	8,0
	Never had labour market stability	40,6
	Labor market stability before 30	22,4
	Labor market stability 30-39	18,0
	Labor market stability after 39	11,0
Total		710

We use the R package TraMineR (Gabadinho et al., 2011) to implement the MCSA and to generate the plots. We compute the distance matrix for the four sequences in three ways, getting rather similar results. First, we apply an Optimal Matching (OM) algorithm with constant costs of 1 for substitutions and 2 for insertions and deletions. Second, we

apply the same OM algorithm with empirical transition probabilities (data-driven cost matrix). Third, we compute Dynamic Hamming Distances. Then we run a hierarchical cluster analysis utilizing a Ward algorithm. We decide on the matching algorithms and the number of clusters based on intra-cluster heterogeneity and goodness of fit indicators. We decide to keep the solution with four clusters generated by the OM algorithm with constant costs. Then, we "consolidate" the partition by employing the PAM algorithm (Partition Around Medoids) and the wcKMedoids function provided by the R WeightedCluster package.

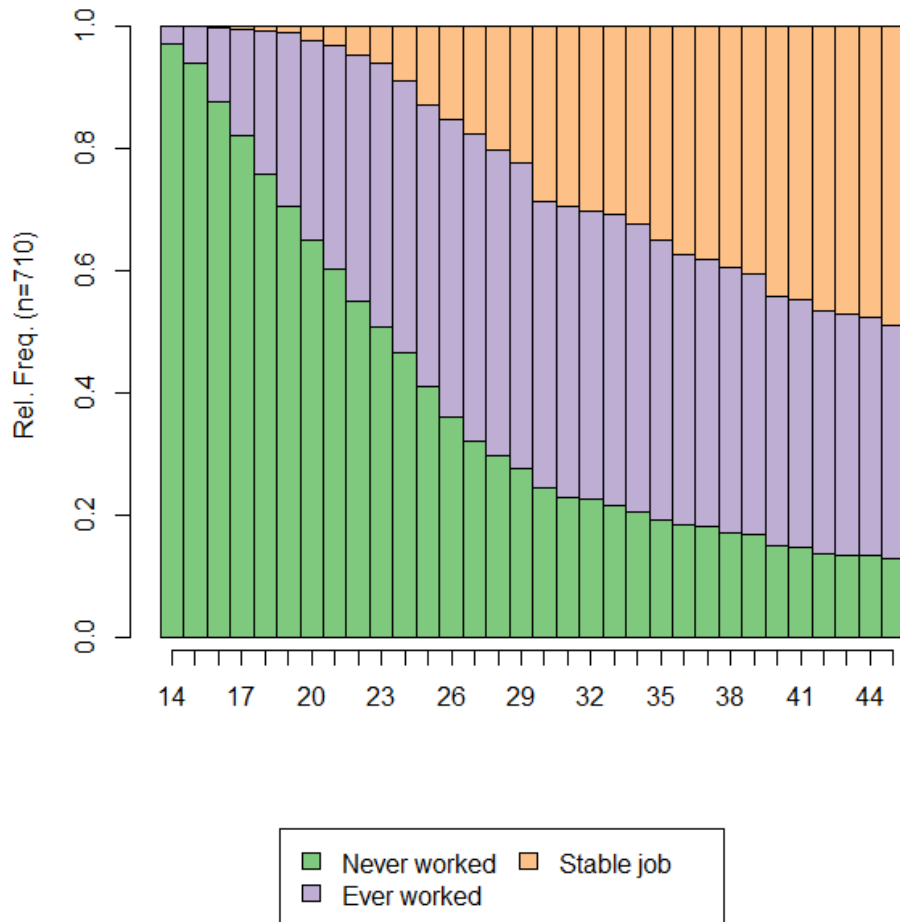Figure 2. State distribution plot of the labor market trajectory.

Table 1 and the four state distributions plots show the descriptive information of our sample. Close to one fourth of our sample never lived with their partner before turning 45, and the same proportion lived with their partner for more than 20 years before age 45. Most women left the parental home in the late 20s and early 30s, but one fifth never left the parental home before turning 45. Close to 30% of our sample have only attained an elementary education level, and the same percentage completed college studies. More than 90% of our sample have worked at some time before turning 45, but more than 40% never had labor market stability.

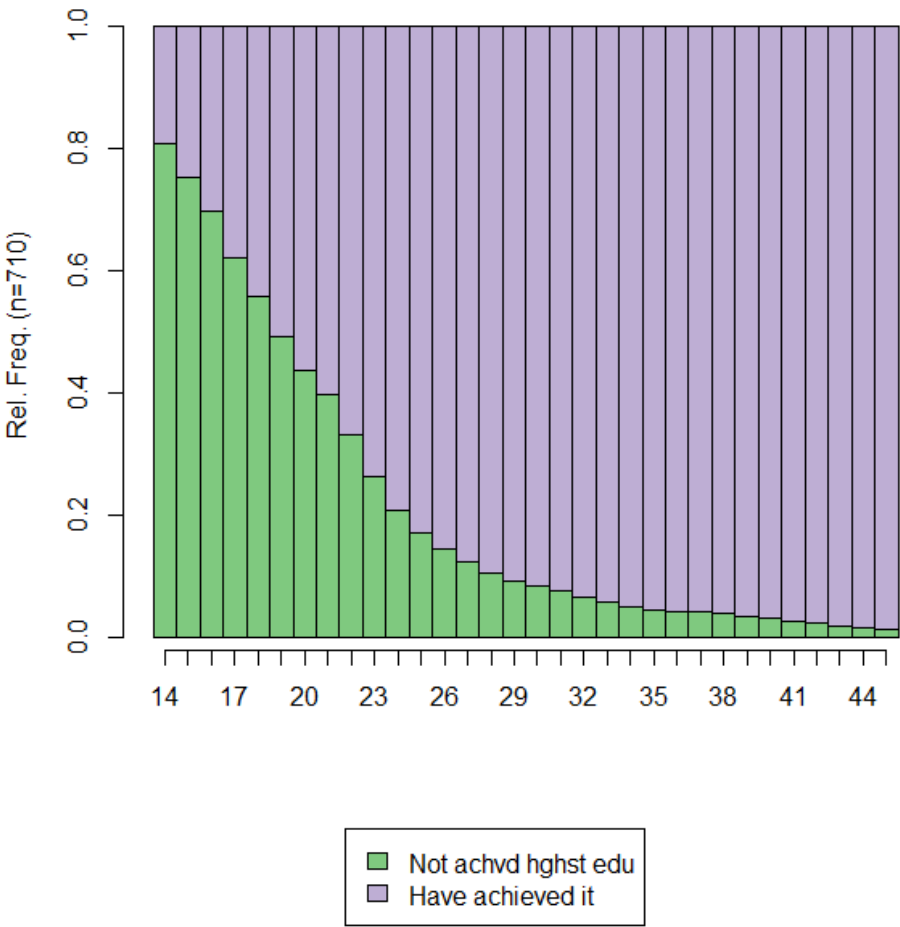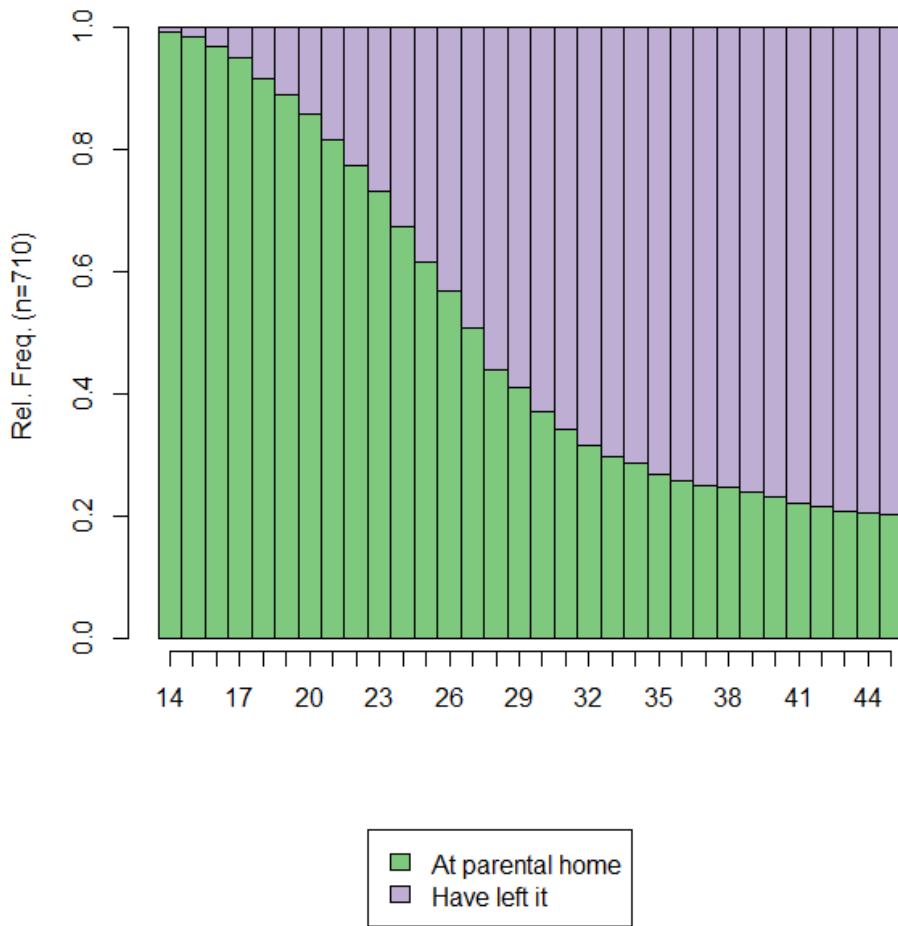Figure 3. State distribution plot of the age when achieved the highest education level.

Figure 4. State distribution plot of the age when left the parental home.

Figures 2 to 5 show the state distribution plots and allow for a better understanding of the life trajectories of ICW in Spain. Figure 2 illustrates that most ICW who enter the labor market do so during their 20s, but achieving labor market stability only happens later in their lives. By the end of their reproductive lives, close to 15% of ICW have never worked, and only half of them have achieved labor market stability. Figure 3 shows that half of our sample finish studying before age 20, and more than 80% have done so by age 24. The timing of leaving the parental home closely aligns with that of cohabiting with a partner, albeit with the latter slightly lagging behind the former. In line with previous studies, it is only during the late 20s when most women leave the parental home, with one fifth of the sample never doing so during their reproductive live. The share of ICW who

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live with their partner increases rapidly during their 20s, but then it stagnates and more

than 35% of the sample do not live with their partner.

Figure 5. State distribution plot of when living with their partner.
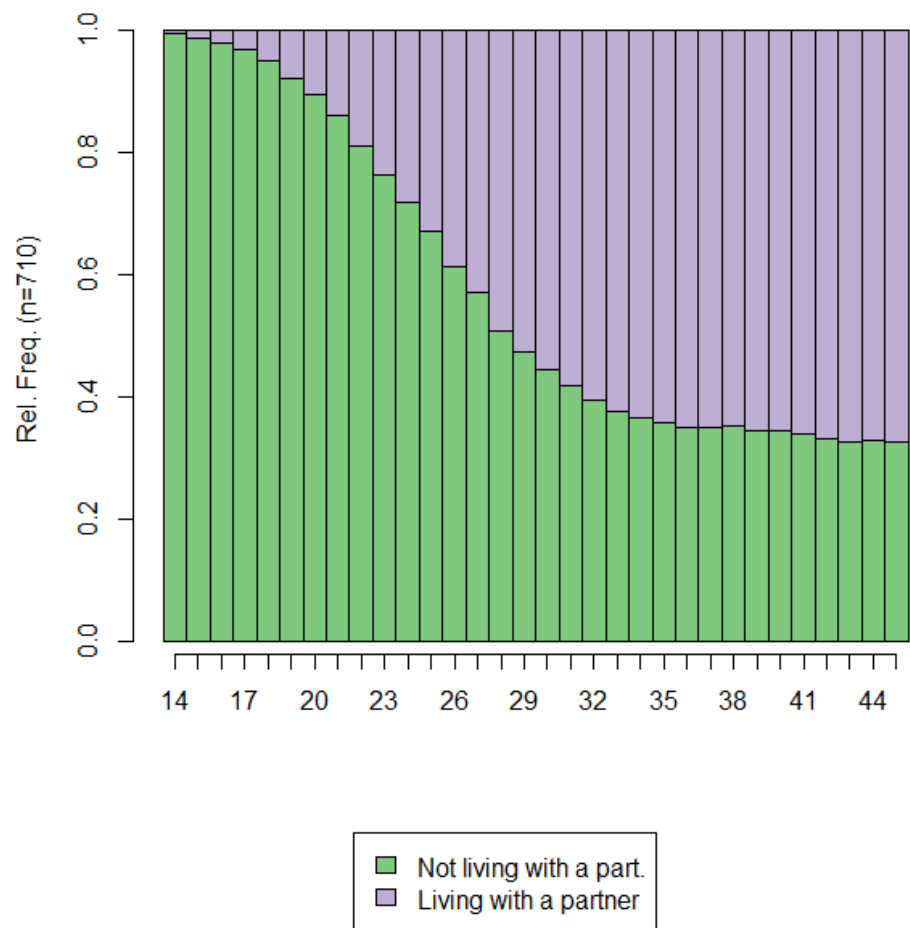
Results

MCSA and cluster analysis yield four clusters of ICW; their associated state distribution

plots and sample shares are depicted in Figure 6. We categorize the first three clusters

following Hakim's Preference Theory. We label Cluster 1 as "Family" because

predominantly contains ICW who have never worked, have finished studying and have

left the parental home early, and have lived with their partners during most of their

reproductive lives. This group of trajectories suggests that this "type" of ICW have

formed couples that have embodied the male-breadwinner model, and corresponds with the "family oriented" women described by Hakim. Cluster 2 differs markedly from Cluster 1 in that it is mainly formed by ICW who started working and finished studying early, however, most of them never achieved labor market stability. The transitions of leaving the parental home and living with their partners happened later than for "family oriented" ICW. We consider this group to be close to the "adaptative women" described in the Preference Theory. Cluster 3 can be labeled as "Career", ICW in this cluster have been studying for longer than their counterparts in Clusters 1 and 2 and virtually all of them have achieved labor market stability (most of them before turning 30). Conversely, they have left the parental home later, and the proportion of them living with a partner is lower than that of Clusters 1 and 2 for the whole reproductive live. Finally, Cluster 4 encompasses ICW who have never, or very late, left the parental home. Additionally, the share of ICW in this Cluster who are living with their partner is lower than 20% for the whole reproductive live. We categorize this Cluster as "Stayers", and they are quite diverse regarding their labor market trajectory and the timing when they achieved their highest education.

The "adaptive" type represents the largest proportion, comprising 32.4% of the sample. "Career-oriented" ICW are also prominently represented, accounting for 29.3% of the sample, while "stayers" constitute 24.1%. Conversely, "family-oriented" women represent the smallest cluster, comprising just 14.2% of the sample. Figure 7 depicts the distribution of "types" of ICW over cohort. Although the observed cohorts are temporally proximate, a notable shift is apparent: the proportion of "family-oriented" ICW has decreased, while that of "career-oriented" ICW has increased.
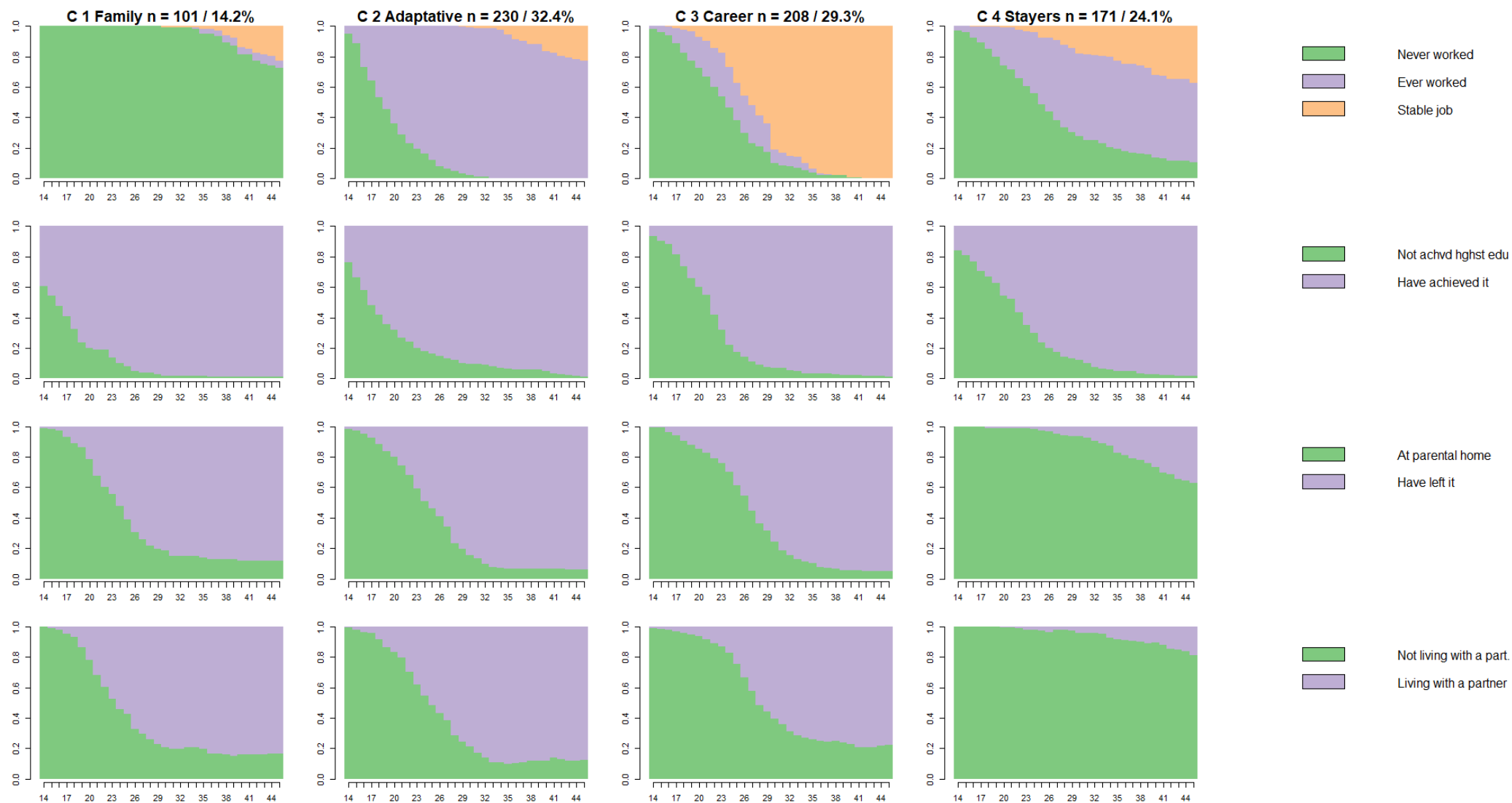
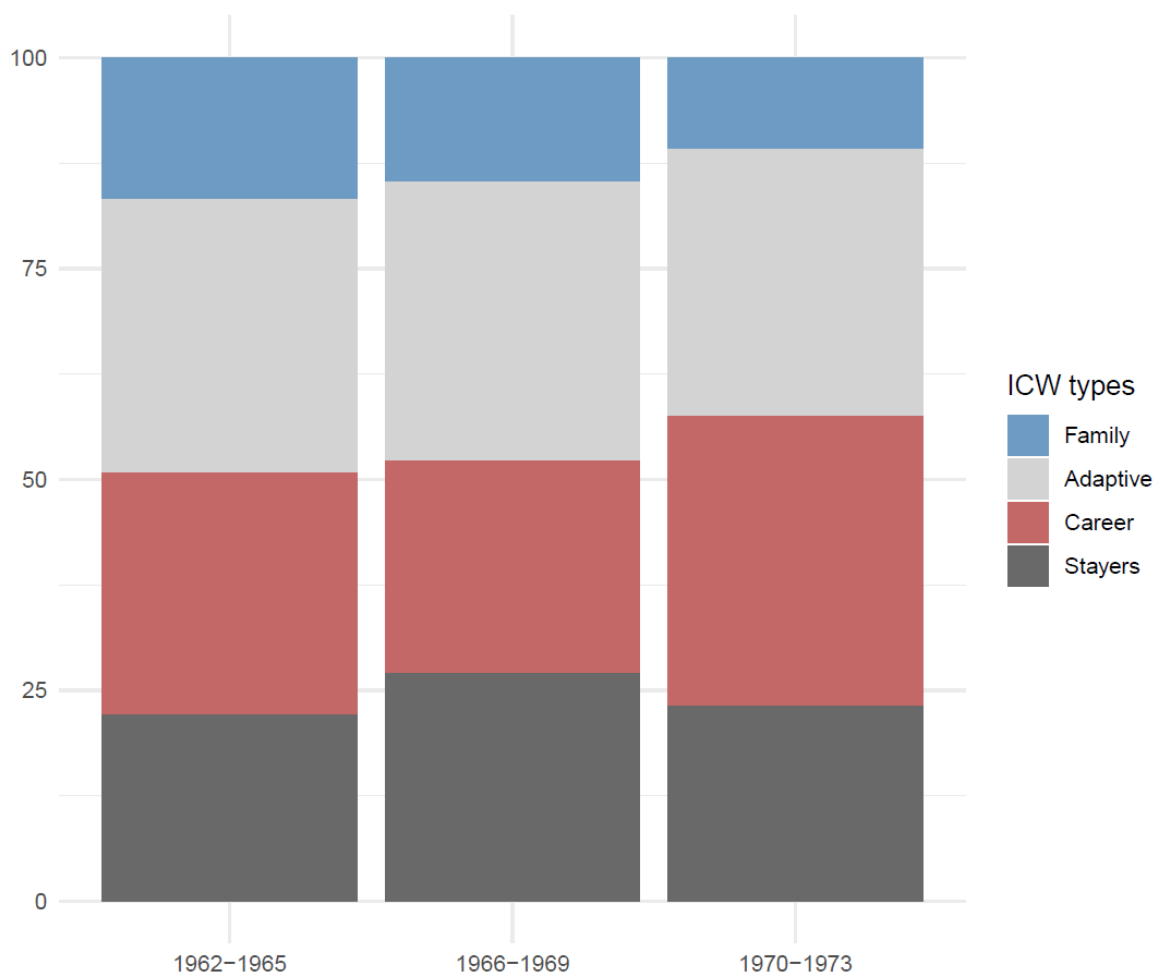Figure 6. State distribution plots by cluster.

Figure 7. Distribution of "types" of ICW over cohorts.

Conclusions

In low fertility countries involuntary childlessness affect a growing share of women. In Spain, 15% of women born between 1962 and 1973 finish their reproductive life being involuntarily childless. By means of a MCSA we demonstrate that involuntary childless women constitute a heterogeneous group. Specifically, we identify four "types" of involuntarily childless women. Based on the characteristics of each group, we show that three of them follow the typology of women proposed by Hakim (2000): "career oriented", "family oriented", and "adaptative women". Moreover, we observe a fourth

"type" labelled as "stayers". We also show how the share of "family oriented" ICW is rapidly decreasing, while that of "career oriented" ICW is increasing.

The existence of different types of involuntarily childless women should be considered when designing public policies that aim to enable women to reach their desired family size. Further studies should investigate the different reasons that led each "type" of ICW to finish their reproductive live without offspring. Additionally, mothers of one and two children also merit attention. Half of the former and 23% of the later, claim that they wish they had had more children.

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