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The impact of fertility and education on changes across cohorts and geographical areas in the demography of grandparenthood: the Italian case

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RECSM Working Paper Number 55

April 2018

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Abstract

Grandparents have always played an important role in the Italian society and in family life; however, little is known about the demography of grandparenthood despite dramatic global demographic changes that are likely to affect both the occurrence and timing of the transition to grandparenthood. Thus, we examined the prevalence and timing of grandparenthood in Italy for different cohorts and geographical areas. As a natural laboratory, the Italian case is particularly interesting because of its striking geographical differences in fertility and educational levels that may impact on the demography of grandparenthood.

Employing data from the 2009 Italian Survey on ‘Family and Social Relations’ (‘Famiglia, soggetti sociali e condizione dell’infanzia’) we used logistic and survival analysis methods to examine the prevalence and timing of grandparenthood. Our respondents were parents born between 1920 and 1949 (N=10,186), i.e. aged 60 and older at the time of the interview.

Across all cohorts considered, Southern Italian parents were more likely to be grandparents and to have experienced the transition to grandparenthood by age 60 in comparison to those from the North. However, across all geographical areas, cohorts born in the 1940s were increasingly less likely to have become grandparents by the age of 60

compared to those born in the two decades before. Such postponement appears to be largely driven by family and educational compositional changes over time. For instance, although the likelihood of a young mother with three or more children and low level of education to become a grandparent has not changed much over time and across geographical areas, the percentage of mothers with such characteristics has reduced significantly over time, particularly in the North.

The prevalence and timing of the transition to grandparenthood vary considerably across Italian geographical areas and the considered birth cohorts. Most of these variations are explained by dramatic changes in fertility and educational levels.

1. Introduction

Researchers have become increasingly interested in grandparents as populations age and the economic and social roles of grandparents in society and family life have become more visible (Bengtson 2001; Gray 2005). Grandparents provide informal childcare support to families (Bordone, Arpino, and Aassve 2017; Hank and Buber 2009; Di Gessa et al. 2016a), which has an impact on both mothers' labour force participation (Arpino, Pronzato, and Tavares 2014;), as well as on their health and well-being (Arpino and Bordone 2014; Di Gessa et al. 2016b; Di Gessa et al. 2016c), likelihood to be in paid work (Lumsdaine and Vermeer 2015) and participation in other social activities (Arpino and Bordone 2017). Yet, we know little about this transition and its timing. This is particularly important as it may overlap or compete with other roles, responsibilities, obligations, and activities in later life, including paid work and provision of care to frail older parents (Leopold and Skopek 2015a).

The transition to grandparenthood, its timing, and the length of time spent in this role are largely influenced by past demographic trends. For instance, increased life expectancy means it is now quite common for a child to grow up while their grandparents and even great-grandparents are alive (Hagestad 2006; Murphy 2011; Post et al. 1997; Watkins, Menken, and Bongaarts 1987). Similarly, shifts in fertility and changes in family behaviour –including childlessness –affect both the prevalence of grandparenthood and the timing of this transition (Margolis 2016). At the individual level, it has been showed that the demography of grandparenthood strongly reflects family histories (Arpino, Gumà and Julià, 2017).

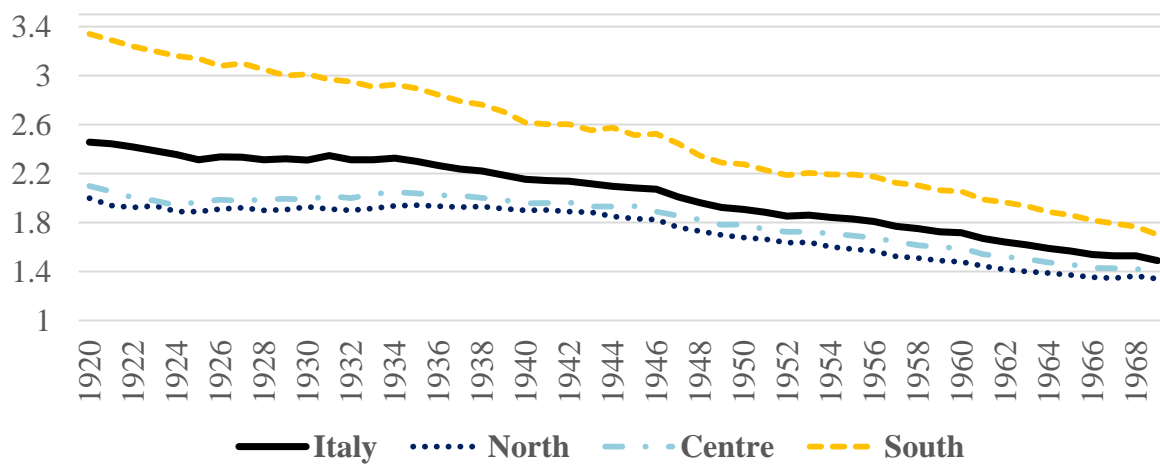
One of the few studies to estimate ages at grandparenthood demonstrated considerable heterogeneity in the timing of the transition to grandparenthood in Europe and the US (Leopold and Skopek 2015a). Two recent studies in Canada and Germany also showed significant delays in ages at grandparenthood across cohorts (Leopold and Skopek 2015b; Margolis 2016). Thus, this literature suggests that the prevalence and timing of the transition to grandparenthood are undergoing rapid change in response to global trends in declining fertility.

This paper adds to the knowledge on the demography of grandparenthood (i.e. prevalence and timing) focussing on Italy and its well-known variations in number of children, age at parenthood, and level of education across geographical areas and cohorts.

The Italian Case

In the 20th century, Italy has experienced significant changes in the cohort measures of fertility, with dramatic differences by geographical areas. As shown in Figure 1, the cohort fertility rate (CFR) declined from about 2.5 among women born in 1920 to 1.91 among those born 30 years later, and to 1.71 among those born in 1960. However, the Southern Italian CFR has been consistently higher than that for the rest of the country: for instance, the CFR in the South of Italy was 3.3 for women born in 1920 and 2.1 for those born in 1960 compared to about 2.1 and 1.5 in the Northern regions (ISTAT 2017).

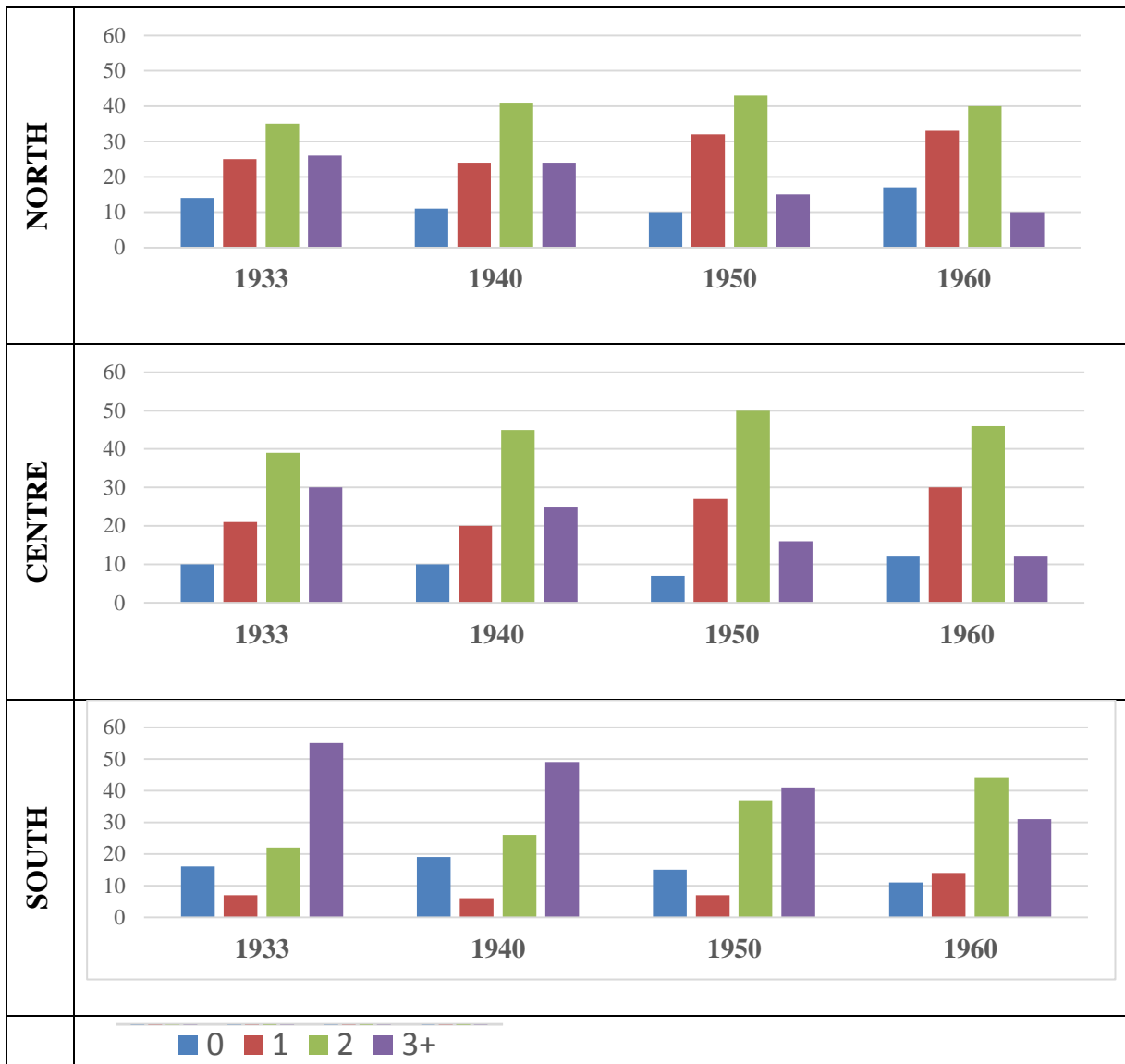
**Figure 1 Cohort fertility rate in Italy and by geographical areas
(cohorts born 1920-1969)**



Sources: ISTAT 1997 and ISTAT 2017

The same generations also experienced large differences in their levels of childlessness. For example, the percentage of childless women decreased from about 16% among those born in the early 1920s to about 10% among those born 20 years later, increasing again to about 18% among those born in the early 1960s. However, whereas among the oldest generations childlessness was more common in the South, among those born after the 1960s it is more prevalent in the North (Tanturri and Mencarini 2004). As a result, the distribution of women by number of children ever born has also changed significantly across cohorts and geographical areas. As shown in Figure 2, the proportion of women with only one child increased in the North from about a quarter to almost a third among women born between 1930 and 1950, whereas it remained stable (to about 10%) in the South. Additionally, almost half of Southern women born 1930-49 had three or more children compared to a quarter in Central and Northern Italy (Santini 1995; Rosina 2004).

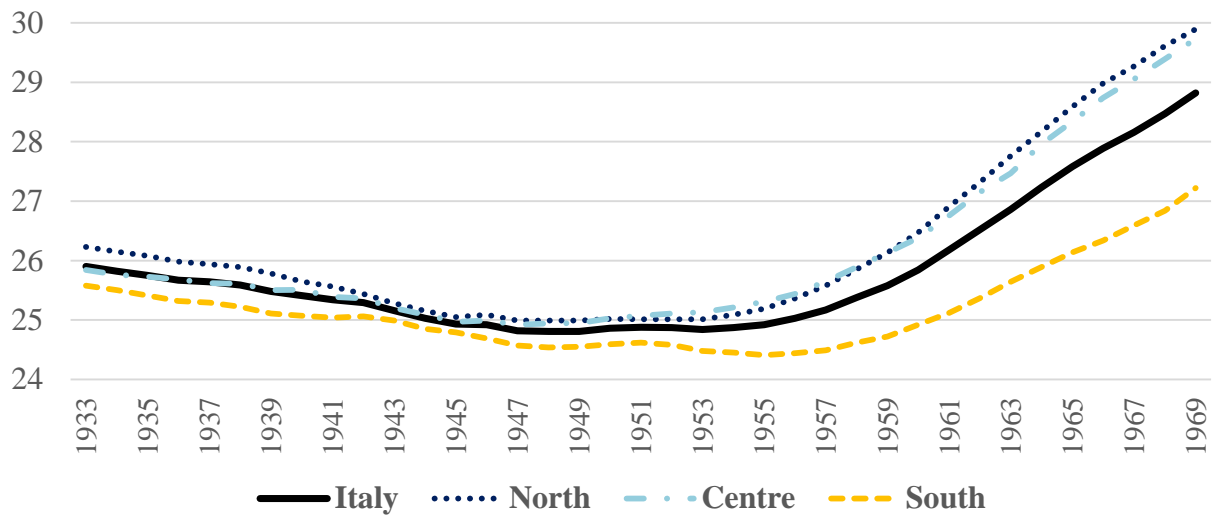
Figure 2. Family size percentage distribution for women who have completed their childbearing, by year of birth of woman and geographical area (selected cohorts)



Source: ISTAT 2017. Notes: Percentage of women who have completed their families with 0, 1, 2, 3+ children.

Similarly, women born between 1930 and 1955 experienced a decline in mean age at first childbirth (from about 26 to 24.8) with little variation across geographical areas (see Figure 3 for more details). Since the 1955 birth cohort, however, mean ages at childbearing have increased (reaching almost 27 among those born in the late 1960s), with increasing differences across geographical areas. For instance, among those born in 1960, the mean age at first childbirth was about 1.5 years younger in the South compared to the North and Centre; and this gap increased to almost 2.6 years for the cohort of women born 1969 (ISTAT 2017).

Figure 3. Mother's average age at first childbirth in Italy and by geographical areas (cohorts born 1920-1969)



Source: ISTAT 2017

Finally, given the complex relationship between educational attainment and parenthood (Caltabiano 2008; Testa 2014), it is important to note that whereas 26% of the Italian cohorts born in the early 1920s had no educational attainment, only 5% had no formal education among those born in the late 1940s, and less than 1% in the 1960s. Over the same time period, the percentage of those with secondary education rose from 7 to 42% (Checchi, Fiorio, and Leonardi 2007), although people from the South consistently experienced lower levels of education.

2. Data and Methods

2.1 Sample

We used data from the Italian Survey on 'Family and Social Relations' ('Famiglia, soggetti sociali e condizione dell'infanzia'), a large scale nationally representative survey carried out by the Italian National Institute of Statistics (ISTAT) in 2009 (ISTAT 2009). This survey has a response rate of about 75% and collects information on a range of demographic and socio-economic information on about 44,000 resident individuals from almost 18 thousand households. Its retrospective design allows the reconstruction of events over the life course. From the original sample, we selected respondents aged 60 and over at the time of the interview (i.e., born between 1920 and 1949) (N = 11,709). For analysis on timing of

grandparenthood, we further restricted the sample to 5,623 mothers and 4,563 fathers (N = 10,186) (i.e., those who could be “at risk” of grandparenthood).

2.2 Measures

2.2.1 Being a grandparent and timing of grandparenthood

All respondents were asked whether they were grandparents, and if so how many grandchildren they had at the time of interview. Grandparents were also asked the age of up to three grandchildren.

To determine the timing of grandparenthood, we calculated the respondent’s age at the time of the oldest grandchild’s birth. For respondents with up to three grandchildren (64% of grandparents), this was simply calculated by subtracting the age of the oldest grandchild from the age of the respondent. For those with four or more grandchildren (36% of grandparents), we considered the lowest age between the age obtained by the oldest grandchild among the three for which the age is reported, and the youngest age at which any of the respondent’s children left home¹ plus 2 years, assuming that respondents would become grandparents in about a couple of years’ time. This is a reasonable assumption to make for the cohorts under study for two main reasons. First, several studies have shown a strong correlation between residential autonomy and marital/fertility behaviour, particularly in Italy and among older cohorts. For instance, almost 90% of Italians born in the 1950s and mid-1960s (i.e., approximately the children of the 1920s-1930s birth cohorts) left their family of origin when they got married, with little difference between the North and South of Italy with the transition to parenthood reaching its highest level within the first year of marriage, especially among the older cohorts (see e.g., Billari and Kohler 2002; Billari, Philipov, and Baizán 2001; Rosina and Fraboni 2004). Second, we found that among those with up to three grandchildren (and for whom we can establish the exact age at grandparenthood), there is a strong correlation ($r=0.78$) between the age at which they became grandparents and age at grandparenthood obtained by drawing information from the year when their first child left the parental home. If we were to use this strategy to determine the age at grandparenthood for those respondents who only have three or fewer grandchildren, we would not change the age in 45% of the cases, and for about one grandparent in three the age at of this transition would

¹ This information is available for up to seven children (i.e., 99.6% of all the sample).

be lower by up to 2 years. In our study, we replaced the age at grandparenthood for about 40% of those grandparents with 4 or more grandchildren, that is, overall -among the full sample of grandparents -for about one in seven grandparents. As Table 1 shows, adopting this strategy decreases the mean age of grandparenthood (particularly among older cohorts) suggesting that our estimates, if anything, are conservative.

Table 1. Mean age at grandparenthood by cohort, using two different methods

Calculated using:	1920s	1930s	1940s
Only age of oldest grandchild	56.9	56.3	54.6
Age of grandchildren and/or year children left parental home	54.3	54.3	53.7

Note: The first line refers to the mean age at grandparenthood calculated using only the age of the oldest grandchild, also for those grandparents with four or more grandchildren. The second line considers for the latter group also the youngest age at which any of their children left home.

2.2.2 Covariates

In our analyses we included the following set of covariates: Geographical area (North, Centre, and South, based on the statistical partition proposed by ISTAT); birth cohort (respondents born in the 1920s, 1930s, and 1940s); number of children (1; 2; 3; 4+); level of education (no formal qualification – which also includes those who are illiterate; low – primary and lower secondary; middle – upper secondary; and high education – tertiary). We also considered age at parenthood by including a trichotomous variable, indicating whether the respondent became a parent before the age of 21, between 22 and 29, or after the age of 30.

2.3 Analysis

We used logistic regressions to calculate the probability of becoming a grandparent by the age of 60. We used this age for two main reasons. First, this is the oldest age at which respondents born in the late 1940s could have become a grandparent. Second, previous studies have found that most men and women in Europe and the US experienced this transition in their early to mid-fifties.

We also used survival analysis to examine the age at transition to grandparenthood (Blossfeld, Golsch, and Rohwer 2007). Following Leopold and Skopek (2015b), we set the

time axis to be the age at which the first grandchild was born. If no grandchild was born, we censored the process at the interview date. All analyses were done separately for men and women. Also, for all analyses and descriptive tables we used weights, based on the population's marginal distribution coefficients provided by ISTAT.

3. Results

In 2009, 63% of men and 70% of women aged 60 and over were grandparents at the time of the interview. However, there were significant variations across cohorts and geographical areas. For instance, about 73% of mothers born in the 1920s had become grandmothers by the age of 60 compared to only 60% of those born two decades later. Moreover, among mothers born in the 1940s, two thirds had become a grandmother by age 60 in the South compared to 54% in the North. Among fathers, percentages were considerably lower: 50% of those born in 1940s had become grandfathers by age 60 in the South compared to 38% in the North.

As expected, cohort and geographical differences were quite striking when fertility measures and education were considered. For instance, the percentage of men and women with no educational attainment decreased substantially over time, although it remained substantially higher in the South even for the youngest cohorts born in the 1940s. Similarly, although the percentage of men and women with four children or more declined everywhere across the three cohorts under study, larger families remained more common in the South than in the Centre and North (see full details in Tables 2A and 2B).

Table 2A. Descriptive statistics on the total sample, parents, and grandparents (%) by geographical area and cohort - WOMEN.

	W O M E N								
	North			Centre			South		
	1920s	1930s	1940s	1920s	1930s	1940s	1920s	1930s	1940s
ALL SAMPLE (N=6,496)									
Education: High	1.8	2.3	6.2	1.6	3.4	8.9	2.7	3.3	8.0
Middle	6.2	10.4	19.5	7.8	11.2	22.7	6.8	7.5	14.1
Low	69.6	75.1	70.9	59.1	69.2	64.0	36.7	51.6	66.7
None	22.4	12.3	3.5	31.5	16.2	4.4	53.8	37.7	11.1
N children: 0	16.6	12.5	12.0	15.8	10.4	8.8	14.9	14.6	12.5
1	25.7	23.4	28.0	32.1	22.8	26.2	15.5	10.3	13.3
2	33.6	38.3	44.4	33.7	41.3	44.5	23.5	29.5	35.7
3	13.6	16.4	12.2	12.8	18.8	16.3	20.8	24.4	25.1
4+	10.6	9.6	3.6	5.6	6.7	4.2	25.2	21.2	13.4
Grandparent	72.6	73.4	56.0	76.9	78.1	63.4	79.6	77.2	65.9
N	589	1,057	1,163	284	436	488	546	918	1,015
ONLY MOTHERS (N=5,623)									
Age at parenthood: ≤ 21	18.1	13.0	16.4	16.8	16.8	20.9	15.0	21.1	23.9
≥ 30	22.5	18.6	15.4	21.6	16.3	14.8	26.6	21.2	18.5
Mean	26.0	26.2	25.3	26.3	25.4	25.0	26.7	25.8	25.3
Grandparent	86.8	84.1	63.7	91.1	87.4	72.3	93.4	90.0	72.8
Grandparent by 60	70.4	65.9	53.6	73.5	68.2	62.0	75.9	74.2	65.5
N	486	909	1,017	246	392	451	463	781	878
GRANDMOTHERS only (N=4,551)									
N Grandchildren: 1	23.6	22.2	32.1	20.1	19.0	34.3	10.9	7.9	16.9
2	20.1	22.8	31.0	25.8	28.1	28.6	17.9	17.6	22.9
3	18.6	19.2	16.0	19.7	20.3	16.0	9.7	14.3	16.2
4+	37.7	35.9	20.8	34.4	32.6	21.1	61.5	60.2	43.9
Age at grandparenthood: Mean	53.7	53.9	53.8	53.0	53.4	53.2	52.2	51.3	51.3
Age at grandparenthood: Median	52.0	53.0	54.0	51.0	53.0	54.0	51.0	50.0	51.0
N	429	765	667	228	349	334	435	708	636

Table 2B. Descriptive statistics on the total sample, parents, and grandparents (%) by geographical area and cohort - MEN.

	M E N								
	North			Centre			South		
	1920s	1930s	1940s	1920s	1930s	1940s	1920s	1930s	1940s
ALL SAMPLE (N=5,213)									
Education: High	5.4	5.5	10.5	8.6	7.5	15.3	7.8	5.1	7.8
Middle	12.4	17.3	23.9	21.9	16.0	26.6	9.2	8.8	21.0
Low	71.8	71.2	63.7	59.9	68.9	56.7	41.7	66.4	65.2
None	10.3	6.1	1.8	9.6	7.6	1.3	41.4	19.7	6.0
N children: 0	9.1	13.1	14.8	14.5	10.3	11.0	8.3	9.8	9.4
1	26.5	24.6	30.0	21.4	20.3	28.5	13.7	11.9	10.7
2	38.3	40.3	42.7	40.2	47.9	44.4	29.4	34.5	42.9
3	15.3	16.1	9.2	17.3	19.5	12.8	27.1	25.9	25.9
4+	10.8	5.9	3.5	6.5	1.9	3.3	21.6	17.9	11.1
Grandparent	79.7	66.4	43.5	78.5	74.9	49.4	83.8	78.7	54.9
N	301	809	1,104	169	390	440	334	715	951
ONLY FATHERS (N=4,563)									
Age at parenthood: <= 21	3.4	1.3	3.9	2.3	4.5	2.8	3.8	5.2	4.9
>=30	56.6	45.7	35.6	50.8	43.1	35.0	53.1	45.8	40.8
Mean	30.5	29.8	29.2	30.3	29.4	29.0	30.6	29.6	29.3
Grandparent	87.7	76.5	51.4	91.8	83.5	55.5	91.3	87.1	60.6
Grandparent by 60	54.1	46.0	38.1	57.0	48.1	43.4	62.9	62.9	50.3
N	270	695	927	145	346	388	301	636	855
GRANDFATHERS only (N=3,243)									
N Grandchildren: 1	19.1	24.3	39.6	16.6	27.3	39.5	11.2	10.9	24.0
2	23.7	27.8	28.9	23.1	27.8	31.0	17.0	18.5	23.2
3	25.1	15.8	17.3	25.5	23.8	13.6	12.4	17.8	20.0
4+	32.1	32.1	14.3	34.8	21.1	15.8	59.4	52.8	32.8
Age at grandparenthood: Mean	58.8	58.3	56.3	59.1	58.5	55.5	56.1	55.0	54.2
Age at grandparenthood: Median	58.0	59.0	57.0	58.0	59.0	56.0	55.0	55.0	55.0
N	238	537	483	132	294	226	275	553	505

Source: Famiglia, soggetti sociali e condizione dell'infanzia (2009). Parents and grandparents are subsamples of the total sample. Own calculations.

Logistic regressions in Table 3 show the odds of becoming a grandparent by the age of 60. For both women and men, the odds of being a grandparent by age 60 were higher in the South than the North of Italy if only decade of birth was controlled for (Model 1). This difference remained significant but decreased when other socio-demographic characteristics were controlled for (Model 2). As expected, the odds of being a grandparent by the age of 60 were lower for each subsequent birth cohort; for parents with higher education levels; for those who had one child only; and those who experienced parenthood later in their life.

Table 3. Logistic regressions on becoming a grandparent by age 60, by gender.

	W O M E N				M E N			
	Model 1		Model 2		Model 1		Model 2	
	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI	Odds Ratio	95% CI
Geographical Area								
North	<i>Ref</i>				<i>Ref</i>		<i>Ref</i>	
Centre	1.24	(1.04–1.48)	1.19	(1.03–1.49)	1.16	(0.96–1.40)	1.20	(0.97–1.49)
South	1.52	(1.32–1.76)	1.24	(1.06–1.47)	1.72	(1.49–2.00)	1.35	(1.13–1.62)
Birth cohort								
1920s	<i>Ref</i>		<i>Ref</i>		<i>Ref</i>		<i>Ref</i>	
1930s	0.81	(0.67–0.98)	0.68	(0.55–0.86)	0.78	(0.63–0.96)	0.63	(0.49–0.80)
1940s	0.53	(0.44–0.63)	0.47	(0.37–0.59)	0.55	(0.45–0.67)	0.42	(0.33–0.54)
Education								
High			0.43	(0.28–0.66)			0.48	(0.32–0.73)
Middle			<i>Ref</i>				<i>Ref</i>	
Low			1.65	(1.31–2.07)			1.63	(1.32–2.01)
None			2.24	(1.67–3.03)			2.37	(1.69–3.32)
N children								
1			0.49	(0.41–0.58)			0.44	(0.41–0.58)
2			<i>Ref</i>				<i>Ref</i>	
3			2.08	(1.67–2.60)			1.87	(1.53–2.30)
4 or more			3.36	(2.39–4.72)			3.03	(2.19–4.18)
Age at parenthood								
≤ 21			2.02	(1.58–2.57)			2.94	(1.62–5.33)
22-29			<i>Ref</i>				<i>Ref</i>	
≥ 30			0.15	(0.12–0.18)			0.18	(0.15–0.21)
N	5,623				4,563			

Source: Famiglia, soggetti sociali e condizione dell'infanzia (2009). Analyses restricted to parents. Own calculations. Note. CI are in bold when estimates are significant at the 5% level.

In order to present a clearer picture of the timing of the transition to grandparenthood by cohort and geographical area, we show the results of the Kaplan-Meier estimates for rates of grandmotherhood at different ages, and separately by number of children (1 vs '3 or more', Table 4), by age at parenthood (≤ 21 vs 30 and older, Table 5), and by educational level (high vs low, Table 6).

Regardless of the geographical area, estimates show that between 80% and 90% of women under study had become grandmothers by the age of 60 if they had *3 or more children* (with slightly higher percentages among the oldest cohorts; see Table 4 for full details). Among mothers with an only child, the percentage who experienced this transition by age 60 was lower and declined across cohorts: for instance, in the Centre-South, 57% of mothers born in the 1920s had become grandparents by the age of 60 if they had had 1 child compared to less than 40% of those born two decades later.

Table 5 shows that, as expected, more than 80% of mothers who had their first child at 21 or younger ages had become grandmothers by the age of 60 in all geographical areas and across the three cohorts considered. On the other hand, the percentage of 'late' mothers who transitioned into grandparenthood is lower and decreased across cohorts, particularly in the North. For instance, among mothers born in the 1940s who had their first child at 30 or older, about 20% had become grandparents by the age of 60 in the Centre-South compared to only 11% in the North.

When educational attainment was considered (see Table 6 for details), mothers with lower educational levels were consistently more likely to experience the transition into grandparenthood compared to those with higher education and they were also more likely to experience it at younger ages. However, geographical differences in the likelihood of becoming a grandmother remained considerable: for instance, even among the younger cohorts born in the 1940s, less educated mothers reported higher odds of becoming grandmothers by age 60 in the Centre and South (about 70%) compared to the North (59%). The group of highly educated women, on the other hand, showed converging and lowering rates of transition. Results for men (not shown) yielded similar conclusions.

Table 4. Women’s cumulative probability of being a grandmother at different ages, by cohort, geographical area, and number of children

Age	North						Centre						South					
	1920s		1930s		1940s		1920s		1930s		1940s		1920s		1930s		1940s	
	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>	<i>1 child</i>	<i>3+</i>
45	4	21	5	27	3	21	6	38	6	32	4	24	10	29	11	39	2	26
50	20	50	14	51	10	43	23	60	24	56	7	50	26	60	19	63	8	48
55	37	77	27	74	21	60	45	82	35	72	17	65	47	77	31	81	19	65
60	51	89	41	89	36	77	57	91	58	83	38	83	57	88	44	88	39	80
65	62	93	52	94	52	86	63	94	66	92	51	90	67	94	56	94	49	87

Note. Estimated probabilities are expressed in percentages. Values are obtained by Kaplan-Meier estimation. For these analyses, we present results for up to the age of 65 in order to allow for equal-sized age intervals across all three birth cohorts under study. Source: Famiglia, soggetti sociali e condizione dell’infanzia (2009). Analyses restricted to parents. Own calculations.

Table 5. Women’s cumulative probability of being a grandmother at different ages, by cohort, geographical area, and age at parenthood

Age	North						Centre						South					
	1920s		1930s		1940s		1920s		1930s		1940s		1920s		1930s		1940s	
	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30	≤ 21	≥ 30
50	67	7	70	2	54	2	73	2	74	2	65	1	74	10	82	6	61	3
55	81	22	83	9	74	3	86	19	87	10	82	9	87	23	90	18	79	11
60	87	43	86	24	83	11	93	35	88	33	88	18	91	46	94	27	83	21
65	89	58	90	41	86	27	93	50	93	49	93	38	93	65	96	51	86	37

Note. Estimated probabilities are expressed in percentages. Values are obtained by Kaplan-Meier estimation. For these analyses, we present results for up to the age of 65 in order to allow for equal-sized age intervals across all three birth cohorts under study. Source: Famiglia, soggetti sociali e condizione dell’infanzia (2009). Analyses restricted to parents. Own calculations.

Table 6. Women’s cumulative probability of being a grandmother at different ages, by cohort, geographical area, and educational level

Age	North						Centre						South					
	1920s		1930s		1940s		1920s		1930s		1940s		1920s		1930s		1940s	
	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>	<i>High</i>	<i>Low</i>
45	13	14	2	16	2	9	1	19	7	18	3	15	8	23	6	39	4	20
50	32	36	15	33	8	24	26	44	16	41	8	32	24	48	15	50	10	38
55	55	58	24	52	21	42	52	64	30	57	22	52	40	68	28	68	23	56
60	67	72	44	68	41	59	68	75	43	74	46	72	46	80	46	77	42	70
65	84	80	55	77	56	71	73	83	66	83	61	80	68	88	70	85	58	78

Note. Estimated probabilities are expressed in percentages. Values are obtained by Kaplan-Meier estimation. For these analyses, we present results for up to the age of 65 in order to allow for equal-sized age intervals across all three birth cohorts under study. Source: Famiglia, soggetti sociali e condizione dell’infanzia (2009). Analyses restricted to parents. Own calculations.

4. Discussion and Conclusions

Our study examined the transition to grandparenthood in Italy, investigating this association with the well-known geographical and cohort differences in fertility and family histories, as well as education. In particular, we focussed on the likelihood of becoming a grandparent by the age 60, and on the timing of grandparenthood.

Our results show that there were more grandparents in the South than in the North, and that grandparents in the South were more likely to have experienced this transition by age 60 than those in the North. Such geographical differences remained significant even when key fertility behaviours (i.e. number of children and timing of parenthood) and education were accounted for. However, younger cohorts were increasingly less likely to become grandparents by age 60.

Our analyses suggest that the postponement of this transition is mostly driven by family and educational compositional changes across cohorts. The likelihood of becoming a grandparent by age 60 has not changed much across cohorts and geographical areas for women with three or more children, for those who have experienced parenthood at younger ages, and for those with lower levels of education. However, the distribution of these characteristics has changed dramatically across cohorts and geographical areas. For instance, only 18% of mothers born in the 1940s had large families in the North (down from 28% for those born in the 1920s) compared to 44% in the South (down from 54%). Similarly, the North-South gap in the prevalence of highly educated women increased, with higher percentages of more highly educated people in the North.

Our findings have important implications for other areas of research on grandparenthood and grandparenting. First, our analyses suggest that given current cohort trends in fertility (with increasing age at childbirth and levels of childlessness), subsequent cohorts of men and women are less likely to experience this transition at all and if they do they are more likely to experience it at later ages. This may have consequences for their well-being, as well as for their ability to engage in other paid or unpaid social and caring activities. The changing profile of grandparenthood may also have implications for the type and quality of intergenerational exchanges of time and money resources. Moreover, our study suggests the importance of within-country variation and differential contexts in shaping the current and future demography of grandparenthood. In the case of Italy, given a convergence in cohort fertility rate, North-South differences in the likelihood of grandparenthood may not be

as substantial for future cohorts of Italians although differences in the timing may persist given the current gap in the mean age at first birth.

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