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Work histories and provision of grandparental childcare among Italian older women

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Abstract

This work investigates the link between grandmothers' participation in the labour market during adult life (between ages 18 and 49) and their provision of grandparental childcare later in life. Our contribution is twofold. First, we consider the Italian case, that despite its reliance on informal care has been under-researched. Second, we test two contrasting arguments on the association between grandchild care provision and grandmother's work histories. On the one hand, lifelong homemakers could be more family-oriented and more likely to provide grandchild care in later life. On the other hand, ever-employed grandmothers could be more likely to have employed daughters and provide grandchild care to support their working careers. With data from the Multipurpose surveys on Families and Social Subjects (2003, 2009, 2016), we estimate logistic regression models, considering various specifications of grandparental childcare, and measuring labour market attachment in three different ways (having ever worked, length of working career, employment interruptions for family reasons). Results show a dualism between grandmothers who ever worked and those who never did, with the former more likely to provide grandparental childcare, especially when parents are at work. Grandmothers who worked only a few years are more similar, in terms of grandchild care provision, to those who worked throughout their life, than to lifelong homemakers. This association is stronger in the South and North-West of Italy. Overall, we showed that care responsibilities are inextricable from labour market participation, as grandmothers who already juggled family and work are those supporting the most their adult children's work-family reconciliation.

Keywords: Grandparents, Childcare, Female labour force participation, Work histories

Introduction

Recent patterns of mortality and fertility have altered the intergenerational structure of families: individuals live longer and have fewer children, and this translates into a shrinkage and stretching of the familial networks, or in other words into less horizontal intergenerational ties (e.g., siblings, cousins) and more durable vertical ones (Hagestad & Uhlenberg, 2007; Pirani et al., 2021). Today's grandparents are more likely to survive throughout their grandchildren's childhood, being also on average healthier and having

fewer grandchildren than in the past (Arber & Timonen, 2012; Tomassini et al., 2020). Against these demographic changes, taking care of grandchildren is a common activity among older people, especially women (Pasqualini et al., 2021), who hold the lion share of care responsibilities also in older age (Zamberletti et al., 2018).

Grandparents, and their childcare, are an irreplaceable source of support for families. This is even more true in the context of increasing female labour force participation, and especially where this increase has not been adequately supported by an improvement of public childcare services, e.g., in Italy (Igel & Szydlik, 2011).

While previous research has widely focused on the association between the provision of childcare by grandmothers and their daughters' participation in the labour market (e.g., Aassve et al., 2012), less attention has been given to grandmothers' labour market participation. In particular, although some studies examined the influence of current grandmother's work status on grandchild care provision (Lakomý & Kreidl, 2015), to the best of our knowledge, this is the first study to focus on the role of grandmothers' work history as a determinant of grandparental childcare.

According to the life course perspective, aging can be better understood by acknowledging the prior life course of the individual (Elder, 1994). On the one hand, work histories can be indirectly informative about grandmothers' preferences. For example, a higher likelihood of grandparental childcare provision later in life might be linked to a lower labour market attachment during adulthood, highlighting the profile of a more family-oriented woman. On the other hand, the study of grandmothers' work history in relation to childcare can be revealing in terms of intergenerational reproduction of work–family orientations and labour force participation (Aassve et al., 2012). There might be some intergenerational inheritance of work preferences between mothers and daughters. In this sense, grandmothers' employment history could be an indirect measure of mothers' employment history, having to do with their need for childcare support. (Grand)mothers and daughters tend to have similar employment patterns (Morrill & Morrill, 2013), as they share similar opinions about work and family, and gender attitudes (Moen et al., 1997). Therefore, although over time women's participation in the labour market has increased and become less selective, grandmothers who have been lifelong homemakers might be more likely to have daughters not working for pay, less in need of grandparental childcare.

Thus, our study contributes to the literature on grandparental childcare provision by focussing on an overlooked potential determinant: grandmothers' work histories. This topic is also policy-relevant given the increased female labour force participation that occurred in all European countries, a trend that is likely to continue in the next decades. This, coupled with increased life expectancy and the connected need to increase the age at retirement to guarantee the sustainability of pension systems, makes it crucial to understand the link between grandmother's labour force participation and later life provision of care. This analysis can help predict future possible conflicts between grandmothers' work and their availability to care for grandchildren, which is an important source of help for adult women's conciliation of work and family. If grandmothers who have never worked are those most involved in grandparental childcare, fewer conflicts between grandmothers' work and childcare could be expected. However, one could also expect fewer grandmothers to be lifelong homemakers. Instead, if grandparental

childcare is found to be positively associated with grandmother's previous work attachment, one could imagine a future drop in availability of grandparental childcare due to more grandmothers expected to still be active in the labour force when also needed for grandchild care.

For a variety of European countries, it has been shown that women become first-time grandmothers when still in employment (Leopold & Skopek, 2015). This could lead to grandmothers' early labour market withdrawal to speed up retirement and free up time for childcare (e.g., Van Bavel & De Winter, 2013), but such a choice may conflict with the increasing age of retirement imposed by recent reforms all over Europe (Komp, 2018). Our analyses will focus on Italy, where the high rate of lifelong homemakers and the late transition to (grand)motherhood (Cisotto et al., 2021; Gessa et al., 2020) likely contribute to maintaining low the work–family conflict at older ages (Zanasi & Sieben, 2020). However, evidence suggests that also in Italy, women's early retirement is positively related to their daughters' labour force participation and thus their need for childcare (Arpino et al., 2014; Bratti et al., 2018). This suggests that grandparental childcare provision has to be analysed not only in connection with mothers' working conditions but also considering the labour force history of grandmothers.

Italy is an interesting case study also for its social, institutional, and cultural characteristics making grandparental childcare particularly relevant and, in a sense, peculiar. This country is an archetype of *familialism by default* (Saraceno & Keck, 2010) for the allocation of intergenerational obligations, namely a country where expectations of solidarity are put on families and the redistribution of the resources within them. This is fuelled, and at the same time it feeds, limited availability of formal childcare services and a still limited female labour market participation. This setting makes the role of informal childcare provided by grandmothers both limited in occurrence (limited need) and high in intensity (whenever needed) (Bordone et al., 2017). In addition, as well-established, Italy presents profound geographical differences for example in terms of gender norms (Kertzer et al., 2009), intergenerational ties (Santarelli & Cottone, 2009), childcare services in a reciprocal connection with fertility and female labour force participation (Brilli et al., 2016; Fiori, 2011), and the demography of grandparenthood (Di Gessa et al., 2020)—thus offering the opportunity to explore contextual heterogeneities in the provision of grandparental childcare.

Background

Grandparental childcare in context

Substantial transfers of resources from parents to their offspring take place across all European countries (e.g., Albertini et al., 2007). Although theories on intergenerational solidarity developed in the last decades (e.g., Bengtson, 2001; Fingerman et al., 2012) have systematized different dimensions of parent–child interaction, scholars agree in identifying the exchange of resources as a fundamental element of this relationship. Grandparental childcare, as other downward transfers, reflects available resources and demands located on a ground of emotions and affection. On the one hand, it occurs predominantly because of a “need” from the adult children, which may derive from a range of factors, including their situation (health problems, divorce; see e.g., Leopold &

Schneider, 2011) and financial difficulties (e.g., unaffordable private childcare). On the other hand, it relies on the availability of resources from the grandparents' side, i.e. age, health status, employment status (for a review, see Jappens & Van Bavel, 2012).

At the same time, the demand and availability rest upon the *care arrangement* (Pfau-Effinger, 2005) of a certain country, namely the interrelation between the cultural values about formal and informal care, and the way societal institutions (such as welfare state, family, labour market) propagate them. In this respect, grandparental childcare is located in an opportunity structure comprising cultural values on the gendered division of labour in a family, the preferred sphere of provision of welfare in society, and the welfare state policy regulating formal childcare provision, in a reciprocal relation with female labour force participation rate.

Cross-national differences in grandchild care provision go hand in hand with differences in welfare state and labour market structure (Bordone et al., 2017; Di Gessa et al., 2016; Igel & Szydlik, 2011; Price et al., 2018). The extensive provision of public childcare services in Northern Europe reduces the need for intensive grandparental childcare, even in presence of a high participation rate of women in the labour market. On the contrary, the low female labour force participation in Southern Europe confines the need for childcare support; but when both parents are employed, the shortage of public services and the limited offer of part-time jobs make the intensive role of grandparental childcare crucial. Importantly, the lack of public childcare prevents, in turn, the female employment rate to increase. In Northern Europe, therefore, grandparents act as “family savers”—when they primarily serve as back-ups in times of need—while in Southern Europe they have the role of “mother savers”—taking care of grandchildren to favour their daughters' labour market participation (Herlofson & Hagestad, 2012). Consistently with this argument, Igel and Szydlik (2011) find that public expenditures for family policies “crowd in” the occurrence of grandchild care and “crowd out” its intensity. Along these lines, Bordone et al. (2017) confirm that daily provision of grandchild care is more likely in countries with limited formal childcare services and parental leave benefits and characterized by strong legal intergenerational obligations. Weekly involvement is instead more common in countries such as the Netherlands, characterized by a high prevalence of part-time jobs.

Variation in intergenerational relationships also comes from differences in family culture (Dykstra & Fokkema, 2011). The traditional idea of familistic vs. individualistic cultures dates to Reher (1998), with the juxtaposition of strong family ties in Southern European countries versus weak family ties in Northern Europe, which has been often used as the main argument. Despite some criticism (e.g., Mönkediek & Bras, 2014), more recent research has confirmed that differences exist in family solidarity and gender role attitudes between Northern and Southern countries in Europe. Broadly speaking, in Southern Europe, individuals have stronger feelings of family care obligations (i.e., the responsibility of the family to care for frail and needy elderly and the duty of parents and grandparents to care for their children and grandchildren) than in the rest of Europe (e.g., Fokkema et al., 2008) and hold more traditional gender role values (for instance the division of labour within the couple), in turn affecting female labour market participation (Uunk, 2015). Jappens and Van Bavel (2012) highlight the importance to consider the regional level together with the country level when explaining variations in

grandparental childcare across Europe, because family practices and prevailing norms may substantially vary also within the same country. They find that, beyond individual characteristics and the supply of formal childcare, the normative climate of the region does play a role in explaining the reliance of grandparents: in more conservative regions, mothers are more likely to take advantage of grandparental childcare than formal alternatives.

As European countries differ in family culture, welfare provision, and female labour force participation, grandparenting is experienced differently in different European countries. Our calculations on the Survey of Health, Ageing and Retirement in Europe (updating older statistics from (Hank & Buber, 2009) detect that on average, almost 60% of grandparents provide care to a grandchild aged 15 or younger in Europe but a North–South gradient exists: in Italy and Spain, roughly 50% of the grandmothers provide childcare, against more than 65% in the Netherlands and Denmark, with continental countries in between. However, the situation is reversed when considering intensive care (daily, weekly), conditional on providing grandparental childcare at all. In this case, higher percentages are registered in the Mediterranean countries than in Northern Europe—for example, almost 80% of Italian grandmothers provide intensive childcare against 30% of their Scandinavian counterparts. Italy finds a place at the extreme of the North–South gradient, with a low overall share of grandparents providing childcare, but at a very intensive rate. And yet, it presents important territorial heterogeneities, as will be explained in the last part of the Background section.

Grandparental childcare and grandmothers' employment

After delineating the context, it is important to take a step back towards the micro-level and elaborate upon the implications of the study of work history and grandparental childcare. Despite an important increase in female labour market participation all over Europe, care duties still heavily influence women's careers, e.g., whether a woman remains economically inactive throughout life or has employment interruptions of different lengths (e.g., Cantalini, 2019).

A relevant stream of research, originating from Hakim's Preference Theory (Hakim, 1991), has related women's decisions over work and family to lifestyle preferences. Broadly speaking, women can be divided into three main groups. Two small and extreme groups are characterized, respectively, by family- and career-orientation. Women belonging to the former group prioritize childcare and do not tend to work, while those belonging to the latter strive for high education and are devoted to working, remaining often unmarried and/or childless. The third, and most common, group regards adaptive women, who have no prevailing orientation but try to combine work and family, "responding" to family policy settings.

As postulated by the life course perspective (Elder, 1994), decisions around work and family are taken in early adulthood but have long-term consequences on several late-life outcomes. This stream of research conceives continuity in lives due to the stability of preferences and role patterns throughout the life course (e.g., Finch, 2014; Hank & Korbmacher, 2013). Therefore, older women's behaviours tend to reflect patterns established in their early years of adulthood (Pienta, 1999). Family and employment histories are an example of this. According to the so-called Attachment Hypothesis (Pienta, 1999; Pienta

et al., 1994), long years of employment interruptions for family reasons could display a weak attachment to the labour market, and thus less propensity for a long working life (e.g., Finch, 2014). Similarly, delaying childbearing could be a signal of strong labour market attachment, connected with longer working lives (Hank & Korbmacher, 2013; Pienta, 1999).

The attachment hypothesis could be extended to the relation between employment history and grandparental childcare. For example, a study on England finds that women who temporarily dropped employment around motherhood are more likely to do the same later in life, around grandmotherhood (Zanasi et al., 2020). We may therefore expect that grandmothers who never performed paid employment or had a more discontinuous working career for family reasons are more willing to provide grandparental childcare later in life because of their lifelong family orientation.

The preference framework, however, has been criticized for ignoring institutional and social constraints to women's realization of preferences (e.g., McRae, 2003; Schleutker, 2017). Similarly, as preferences can change over the life course, the Preference Theory can be affected by a causality issue: women's behaviour, shaped by certain circumstances, can determine their preferences, e.g., actual fertility leads to changes in values and preferences (for a discussion of Hakim critics, see Vitali et al., 2009). Constraints are particularly relevant in Italy, traditionally characterized by a male breadwinner family model (Naldini, 2002) and *familism by default* in terms of welfare arrangement (Saraceno & Keck, 2010), as we will delineate in the next paragraph.

At the same time, there might be reasons to argue that an inverse mechanism is at play, namely that grandmothers who did not show attachment to labour market during their life are less like to provide grandchild care. The intergenerational cultural link postulates that children's attitudes and behaviours are strongly shaped by those of parents (e.g., Black & Devereux, 2010; Carlson & Knoester, 2011; Farré & Vella, 2007; Min et al., 2012), and the intergenerational reproduction of work is no exception (Boyd, 1989): daughters' labour market commitment tends to be strongly associated with their mothers' employment history (Del Boca et al., 2000; Morrill & Morrill, 2013), as they share similar preferences about work and family, and gender attitudes (Moen et al., 1997).

Based on this ground, grandmothers' work history could be considered as a proxy of their daughters' work commitment. We could expect a grandmother who participated in the labour market to be more likely to have an employed daughter, therefore we speculate that a working grandmother is more eager to support a working daughter, well recognizing her difficulties to reconcile work with family life.

Nevertheless, the intergenerational transmission of work idea must consider the diffusion of female employment and its cultural significance both over time and across contexts. A study on the Netherlands (Van Putten et al., 2008), for example, notices that there is more variation left in women's work hours, than in women's labour market participation. In other words, female labour market participation is very common in that country, therefore no association is to be found between mothers' and daughters' behaviours (a large majority of women work); what is intergenerationally transmitted is the commitment, e.g., the work hours. Daughters of working mothers work more hours than daughters of non-working mothers.

Table 1 Regional-level indicators, Italy, 2016

Macro-area	Region	Female labour market participation rate 15–64 y.o. (%)	0–2 years old in ECEC (%)	Traditionalist family norms
South and Islands	Sicily	28.3	9.9	0.24
South and Islands	Campania	28.7	7.6	0.30
South and Islands	Calabria	29.2	9.7	0.25
South and Islands	Apulia	31.4	14.5	0.22
South and Islands	Basilicata	39.0	14.5	0.23
South and Islands	Molise	42.0	21.7	0.19
South and Islands	Sardinia	42.3	28.8	0.16
South and Islands	Abruzzo	44.6	20.9	0.24
Center	Lazio	51.8	29.7	0.22
North-West	Liguria	54.3	30.6	0.20
Center	Marche	54.4	26.7	0.19
Center	Umbria	55.2	41.0	0.20
North-East	Veneto	55.2	27.3	0.16
North-East	Friuli-Venezia Giulia	57.0	28.3	0.20
North-West	Lombardy	58.1	28.1	0.20
North-West	Piedmont	58.2	27.3	0.17
Center	Tuscany	58.4	35.2	0.20
North-West	Aosta Valley	61.8	44.7	0.17
North-East	Emilia-Romagna	62.2	37.1	0.19
North-East	Trentino-South Tyrol	62.7	31.7	0.16

Female labour force participation rate and ECEC availability: ISTAT data warehouse, 2016. Traditionalist family norms: percentage of respondents in the FSS 2016 survey who strongly agree or agree with the statement “To what extent do you agree with the following statement: when parents need help, daughters should take care of them”, authors’ elaboration. Data sorted by female labour force participation rate

Given the existence of these competing mechanisms on the relationship between grandmothers’ work histories and their childcare provision, we do not formulate specific hypotheses. Nevertheless, these mechanisms do not happen in a void, while they respond to a specific opportunity structure. Italy embodies striking contextual differences in terms of cultural values related to family solidarity (and consequently, family relations), female labour market participation, and public childcare provision. Taken together, these elements might be related to heterogeneities in the relationship between work histories and grandmothers’ childcare provision across macro-regions.

Grandmothers’ employment in Italy

Despite an increase in the labour force participation of women since the 1970s (translating in differences across cohorts in employment behaviour), Italy’s extremely low female labour market participation rate still involves a high number of women who are lifelong homemakers, or who had very short working careers due to withdrawal after marriage or childbearing (Scherer & Reyneri, 2008). The lack of early childhood education and care services (ECEC) makes it hard to reconcile work with family. Saraceno and Keck (2010) name this policy regime “familialism by default”, to highlight that in this type of welfare “there are neither publicly provided alternatives to nor financial support for family care” (ibidem, p. 3).

However, Italy embodies strong territorial heterogeneities in female employment and ECEC (see Table 1), which are likely to translate into differences in grandparental childcare provision.

In the table, Italian regions are listed in a decreasing order depending the female labour market participation. Southern regions are found to have the lowest values of female employment, ranging from 28% of employed women in Sicily to 44% in Abruzzo. Northern regions such as Emilia-Romagna and Trentino-South Tyrol reach much higher scores, above 60% (ISTAT data warehouse, 2016). The share of employed women goes hand in hand with ECEC availability. On average, available childcare services cover 25% of children below the age of 3, but once again, the national average masks huge regional variation, from a coverage rate around 45% in Aosta Valley and 37% in Emilia-Romagna to 7% in Campania and 9% in Calabria.

In terms of family culture, to the best of our knowledge, works empirically detailing the situation across Italian regions are not available. The Italian ISTAT Multipurpose surveys on Families and Social Subjects (FSS) can give hints in this direction. Relying on the answers to the item: “To what extent do you agree with the following statement: when parents need help, daughters (more than sons) should take care of them”, we could get a rough proxy of intergenerational obligations and gender role values. The last column in Table 1 shows the proportion of respondents in the surveys who strongly agree or agree with the statement; the higher the proportion, the most “traditionalist” the climate. Regions with the lowest scores of female labour market participation and ECEC are also those with the highest scores in the considered item, e.g., 24% of respondents in Sicily (strongly) agree with the statement, against 16% in Trentino-South Tyrol—the correlation is -0.88 with ECEC, and -0.85 with female labour force participation.

Building on the empirical literature on grandparents in Europe (e.g., Di Gessa et al., 2016), we could expect that in regions where the participation of women in the labour market is lower and ECEC services less widespread, grandmothers are less likely to provide childcare; in regions where women are more likely to be employed and services for children are more widespread (even though still limited in use compared to other European countries, see OECD, 2011), grandmothers are more active in offering complementary childcare. This is confirmed by a study from Zamberletti and colleagues (2018), who find higher levels of grandparental childcare in the Northern and Central regions of Italy.

It is therefore important to consider these sub-national differences when looking at the relationship between work history and childcare provided by grandmothers. On the side of preferences, there could be a stronger relationship between work history and childcare in areas holding more conservative values: family preferences could have strongly impacted the continuity of the working career and could influence also the provision of childcare in later life. On the side of intergenerational transmission of work, work history and grandmothers' childcare could be more strongly related in areas with lower female employment and ECEC: there, grandmothers who never worked are more likely to (still) have a daughter who never worked, less in need of childcare; in areas where female employment is widespread, all grandmothers are equally likely to have employed daughters, more in need of childcare. To examine the potential sub-national

heterogeneity in the relationship between grandmothers' work histories and childcare provision, we will consider macro-areas in which Italian regions are usually aggregated (see the first column in Table 1).¹ Although this geographical aggregation is not ideal because a certain degree of variability persists within macro-areas, it represents a good compromise between focusing only on the national level that would hide relevant heterogeneities and exploring detailed geographical differences that would not be possible due to sample size issues. It should also be noted that the division of regions in macro-areas captures a good part of the variation in female labour force participation, ECEC, and family culture across Italian regions.

Data, variables, and methods

Data and sample

The present study uses data from the ISTAT Multipurpose surveys on Families and Social Subjects (FSS) collected in 2003, 2009, and 2016 on national representative samples. This is the main data source on family structures and socio-economic characteristics of households and individuals available for Italy. The first two waves are household surveys and rely on a sample of roughly 24,000 households (for about 50,000 individuals), while the most recent one is an individual survey sampling about 32,000 individuals aged 18 years and older. Despite this difference, the three surveys are comparable, and representative of the Italian population aged 18 and older.

For our study, we select women aged between 50 and 75 at the time of the interview (and born after 1930), because after that age the probability of providing childcare substantially falls in our data. We further restrict the working sample to those who have at least one non-cohabiting grandchild younger than 13 years old, as these characteristics define who answers the questions on grandchild care. Our analytical sample amounts to 7601 individuals (3241 in 2003; 2815 in 2009; 1545 in 2016).

Variables

The outcome variables relate to grandparental childcare, in six different specifications according to the available data. Respondents are first asked if they look (*Yes/No*) after their grandchildren in general, then, if yes, they are asked about the specific circumstances of grandchild care. The investigated occasions are: when parents work (*Parents work*), during occasional parental appointments (*Occasional care*), when parents need free time (*Give parents a break*), during holidays (*Holidays*), when the grandchild is sick (*Sickness*), or in case of emergency (*Emergency*). The questions are posed for a maximum of three grandchildren, asking to refer to those living closest in the case of more than three grandchildren. Therefore, our six outcomes equal to 1 if grandparental childcare in the considered circumstance is reported for at least one grandchild, 0 otherwise.

We build three main independent variables resuming grandmothers' previous work history, to approximate to various extents work attachment. The survey includes retrospective information on respondents' employment history (up to 5 employment spells for the FSS-2003, and up to 11 for the FSS 2009 and 2016), and for each employment

¹ These macro-areas are identified by ISTAT. In the remaining of the manuscript, we refer to South and Islands simply as "South".

spell (if any) the starting and ending dates are provided. In case of career interruptions, respondents are also asked for the reason for such break(s). Our first independent variable indicates whether the respondent has ever performed paid work during her adult life (i.e., between 18 and 49 years old), regardless of episode duration, taking value 0 for those who never worked and value 1 for those who report at least one job episode. Secondly, to refine our work attachment measure and account for the time spent in paid work, we create a categorical variable indicating the percentage of time worked during adult life (again, between 18 and 49 years old): *Never worked* (the same group identified above); *Worked for 1–25% of their adult life*; *26–50%*; *51–75%*; or *76–100%*. Finally, a third specification aimed at capturing whether the respondent ever had interruptions in her working career (between 18 and 49 years old) for family-related reasons, namely marriage, childbirth, and other family reasons. It thus considers the length of work interruptions for family reasons, contrasting grandmothers who *never worked* (again, the same group as before), with those who had *long* interruptions (i.e., 11–31 years), *short* interruptions (i.e., <10 years), and those who never stopped working due to family-related reasons (*No interruptions*). Several specifications for these variables have been tested—e.g., changing the cut-off points between the categories, considering time spent working in number of years—and all proved to be robust, sustaining our idea to contrast different levels of work attachment.

Finally, to account for the demographic and socio-economic composition of the sample, we also include a set of control variables: age at interview and its squared term; birth cohort (1930–1939; 1940–1947; 1948–1966)²; occupational status at the time of interview (contrasting *Employed* vs. *Unemployed, housewife, sick/disabled, other*); educational level (*No education; Primary; Lower Secondary; Upper Secondary and higher*); area of residence at interview (*North-West; North-East; Centre; South and Islands*). The main characteristics of the sample according to demographic and social characteristics considered in the analysis are reported in Table 2.

The control variables included in our models reflect a parsimony criterion, but results are robust to other specifications that include controls for chronic conditions at interview, survey year instead of cohort, age categories instead of age and age squared, marital status, and residential distance from the closest grandchild.

Methods

Given that all our outcome variables—*care when parents work; occasional care; give parents a break; care holidays; sick grandchild; emergency*—are dichotomous, we estimate a set of separate logistic regression models including the control variables described above and, one at a time, the independent variables synthesizing the individual work history (*ever worked, percentage of life worked, interruptions for family-related reasons*). To help with interpretation and comparison across model specifications, we present results in terms of predicted probabilities. The presented estimates are not weighted. Tables with full estimates are included in the “Appendix”.

² The birth cohorts capture historical contextual variability related to norms and behaviours related to female labor force participation and roughly correspond to women born in the pre-WWII, during WWII and post-WWII periods. They have been set in this way also to guarantee approximately the same sample size within each cohort.

Table 2 Descriptive statistics, by employment history, absolute and percentage values (unweighted data)

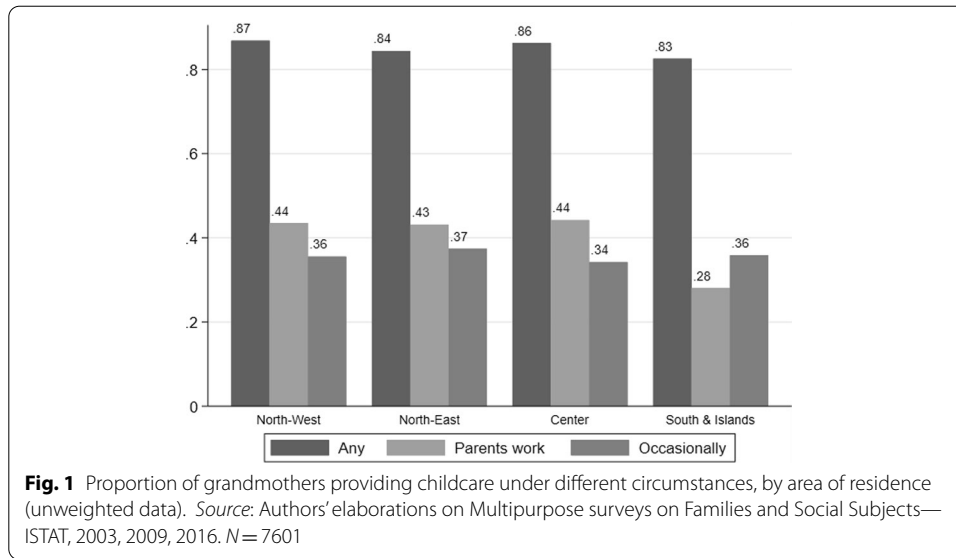
	Never worked 18–49		Ever worked 18–49		Total	
	<i>N</i>	%	<i>N</i>	%	<i>N</i>	%
Care when parents work (Yes)	787	30.6	2069	41.1	2856	37.6
Occasional Care (Yes)	903	35.2	1821	36.2	2724	35.8
Give parents a break (Yes)	412	16.0	832	16.5	1244	16.4
Holiday (Yes)	348	13.6	800	15.9	1148	15.1
Sick grandchild (Yes)	358	13.9	940	18.7	1298	17.1
Emergency (Yes)	667	26.0	1317	26.2	1984	26.1
Percentage of life worked						
Never worked	2568	100.0	n.a	n.a	2568	33.8
1–25%	n.a	n.a	1049	20.8	1049	13.8
26–50%	n.a	n.a	925	18.4	925	12.2
51–75%	n.a	n.a	1037	20.6	1037	13.6
76–100%	n.a	n.a	2022	40.2	2022	26.6
Interruptions for family reasons						
Never worked	2568	100.0	n.a	n.a	2568	33.8
Short interruptions for family reasons	n.a	n.a	527	10.5	527	6.9
Long interruptions for family reasons	n.a	n.a	1171	23.3	1171	15.4
No interruptions for family reasons	n.a	n.a	3335	66.6	3335	43.9
Macro-area of residence						
North-West	345	13.4	1248	24.8	1593	20.9
North-East	222	8.6	1383	27.5	1605	21.1
Center	430	16.7	1020	20.8	1450	19.1
South and Islands	1571	61.2	1382	27.5	2953	38.8
Employment status at interview						
Not employed (vs employed)	2537	98.8	4086	81.2	6623	87.1
Educational level						
No education	343	13.4	377	7.5	720	9.5
Primary	1436	55.9	2291	45.5	3727	49.0
Lower secondary	578	22.5	1168	23.2	1746	22.9
Upper secondary and higher	211	8.2	1197	23.8	1408	18.5
Birth cohort						
1930–1939	784	30.5	1350	26.8	2134	28.1
1940–1947	900	35.1	1887	37.5	2787	36.7
1948–1966	884	34.4	1796	35.7	2680	35.3
Age (mean, SD)	63.3	6.5	63.2	6.3	63.23	6.4
<i>N</i>	2568	33.8	5033	66.2	7601	100.0

Source: Authors' elaborations on Multipurpose surveys on Families and Social Subjects—ISTAT, 2003, 2009, 2016. *N* = 7601

Results

Grandparental childcare in Italy at a glance

Taking care of grandchildren when parents are at work represented, at the national level, the most important occasion on grandparental childcare (37.6% of the sample, see Table 2), followed by occasional care when parents have sporadic appointments (35.8%). Grandparents also represented a source of help in case of emergency (26.1% of the

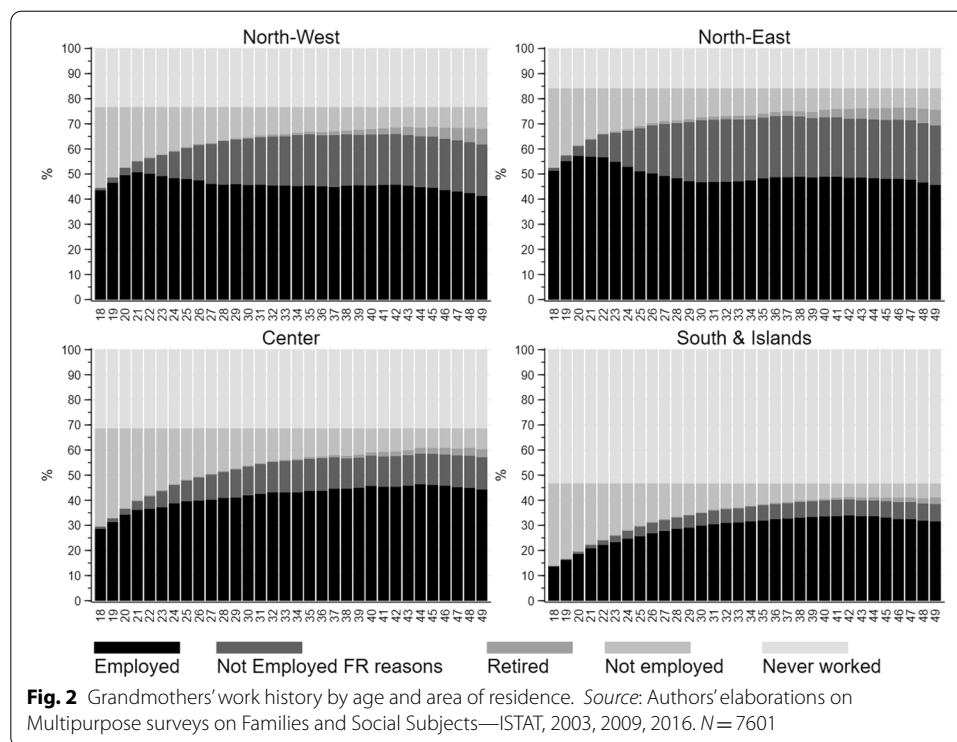


sampled grandmothers indicated this option), whereas help during holiday, sickness of grandchildren, or for giving a break to parents seems more marginal (15–17%).

Exploring territorial differences (Fig. 1), most grandmothers declared to provide some sort of grandparental childcare (“Any”, an average among the six occasions for childcare we consider) without substantial differences between Italian areas (e.g., 87% in the North vs 83% in the South, Fig. 1). In addition to “any” care, for the sake of simplicity, we report only two care types, that can approximate the idea of intensive (when parents work) and occasional care (see also Pasqualini et al., 2021).

Differences by geographical areas emerged as for grandparental childcare when parents are at work: about 44% of grandmothers living in the North or Centre of Italy looked after their grandchildren in this case, while the corresponding percentage declined to 28% among Southern grandmothers. No substantial territorial differences were instead present for all the other circumstances of grandparental childcare.

Figure 2 describes Italian grandmothers’ work history (between ages 18 and 49), showing the percentage of women in a certain state at each age. The percentage of grandmothers who were employed is almost constant throughout the life course. Only in the first phase of life here considered—between 18 years old and the early 20s—there were some differences (see for example the part referring to “Not employed” women)—likely due to permanence in education. Differences between the North and the South of the country were again remarkable. While in the Northern regions roughly 20% of grandmothers never performed paid work, the corresponding rate in the South and Islands approximates 60%. Taken together, Figs. 1 and 2 might provide evidence that grandmothers’ employment resembles their daughters’: less grandparental childcare *when parents work* is provided in the South, where fewer women are in employment indeed.



Results from regression models

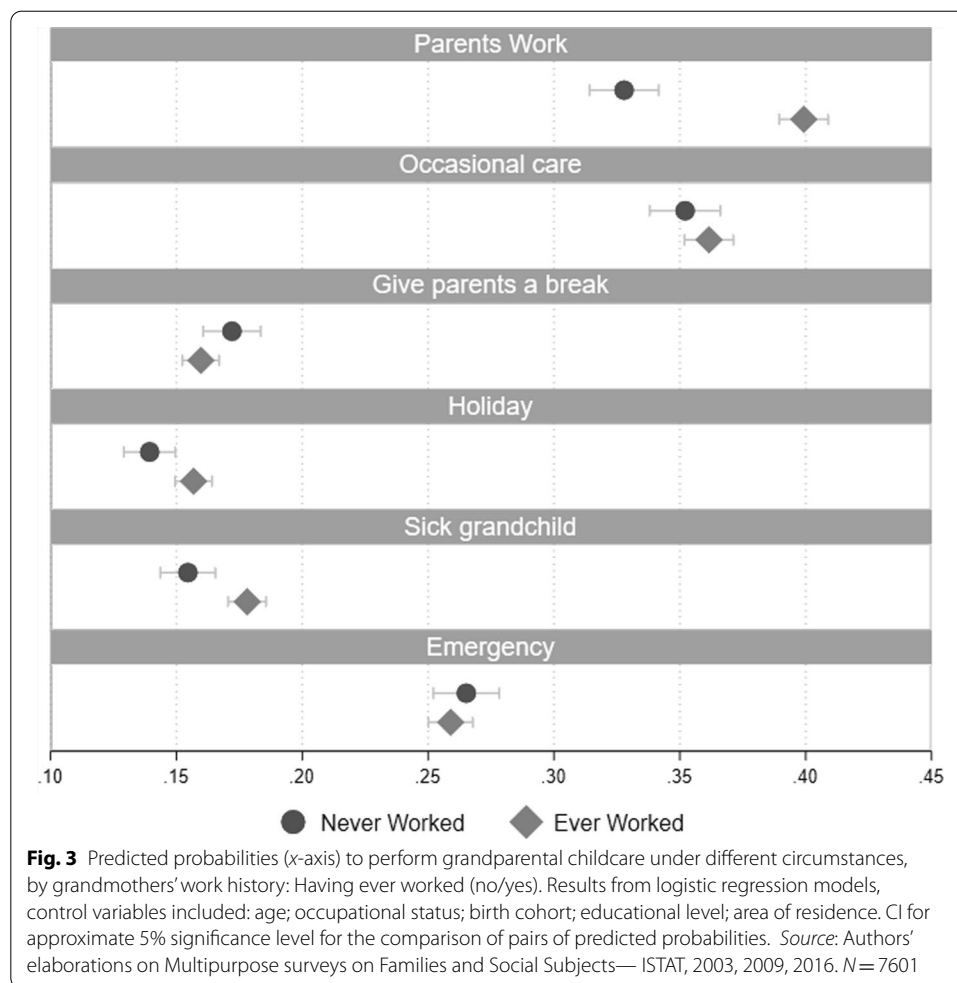
Grandparental childcare: the role of grandmothers' employment

Figure 3 shows the estimated probabilities to provide care in the six circumstances considered— *when parents work; occasional care; give parents a break; care holidays; sick grandchild; emergency*— depending on whether grandmothers have ever been in paid work (between ages 18 and 49; regardless of its duration), that is our first specification of work history.

Large differences appeared when considering grandmothers' *care when parents are at work*: women who worked in their adult life had a probability of 0.40 to provide grandchild care, which significantly reduced to 0.33 for their counterparts who never did. Although smaller in magnitude, differences emerged also for grandparental childcare during *holidays* and when the grandchild is *sick*: in both cases, grandmothers who ever worked were about two percentage points more likely to provide care under those circumstances (respectively, 0.16 and 0.18 relative to 0.14 and 0.15). Considering *occasional care*, to *give parents a break*, and in case of *emergency*, instead, no significant differences based on grandmothers' work history emerged.

A closer look at grandmothers' work attachment: percentage of life worked

The second key independent variable we considered breaks down grandmothers' labour market participation according to the percentage of adult life spent in employment (Fig. 4), to better quantify the labour market attachment. Differences seemed not significant, for most of our care outcomes, except for the provision of *care when parents work*. And, surprisingly, in this case, we found that the duration of the stay in the labour

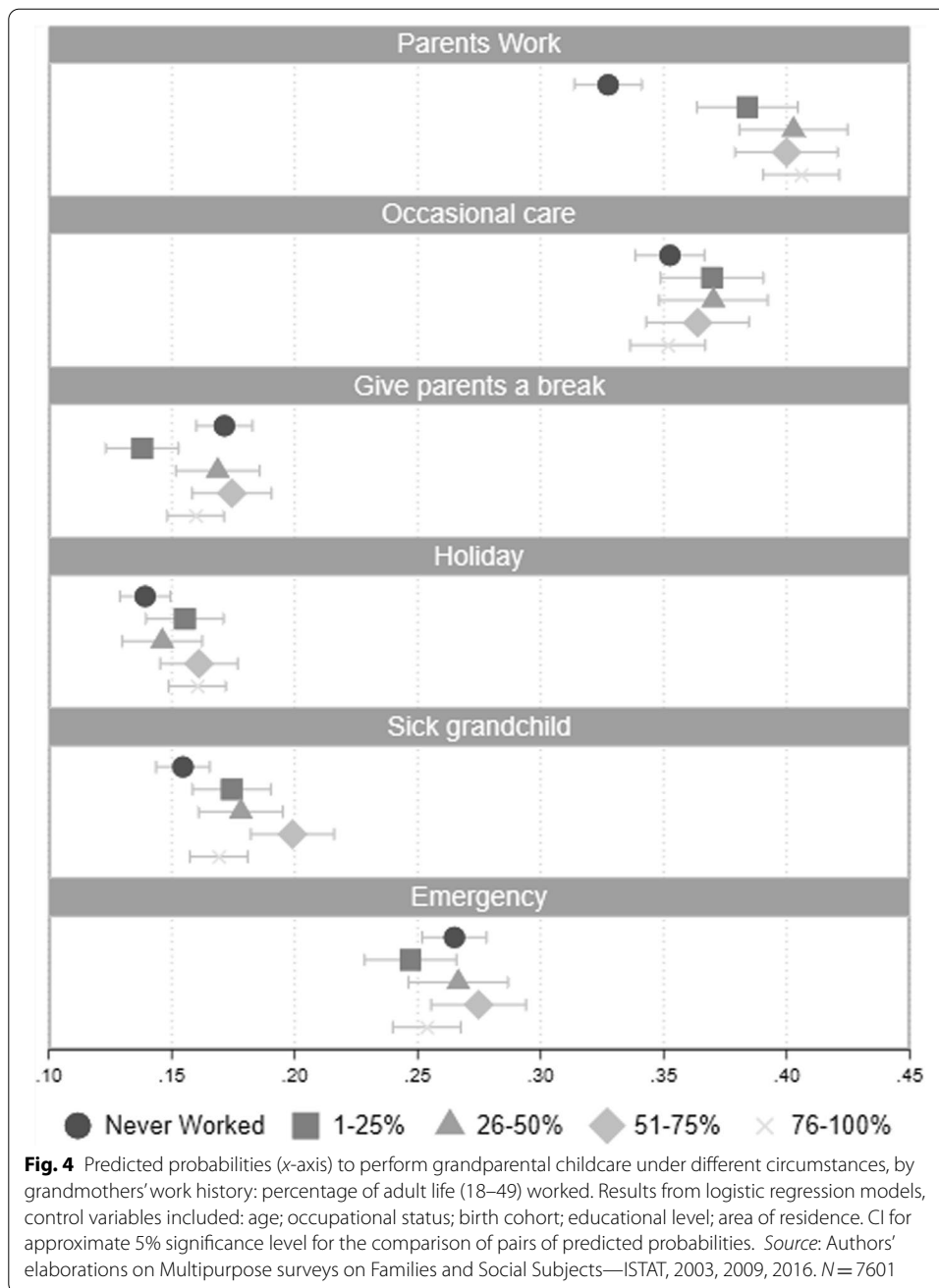


market did not matter much for grandparental childcare: the most important difference was between women who never worked and those who did work, independently of the time spent in paid work. The probability was 0.33 for never-worked women, and it tends to increase as the participation in the labour market increased, although differences were not statistically significant (probabilities from 0.38 to 0.41). Interestingly, women who worked 1–25% of their life resembled more closely women who had an almost uninterrupted working career than women who were never in employment.

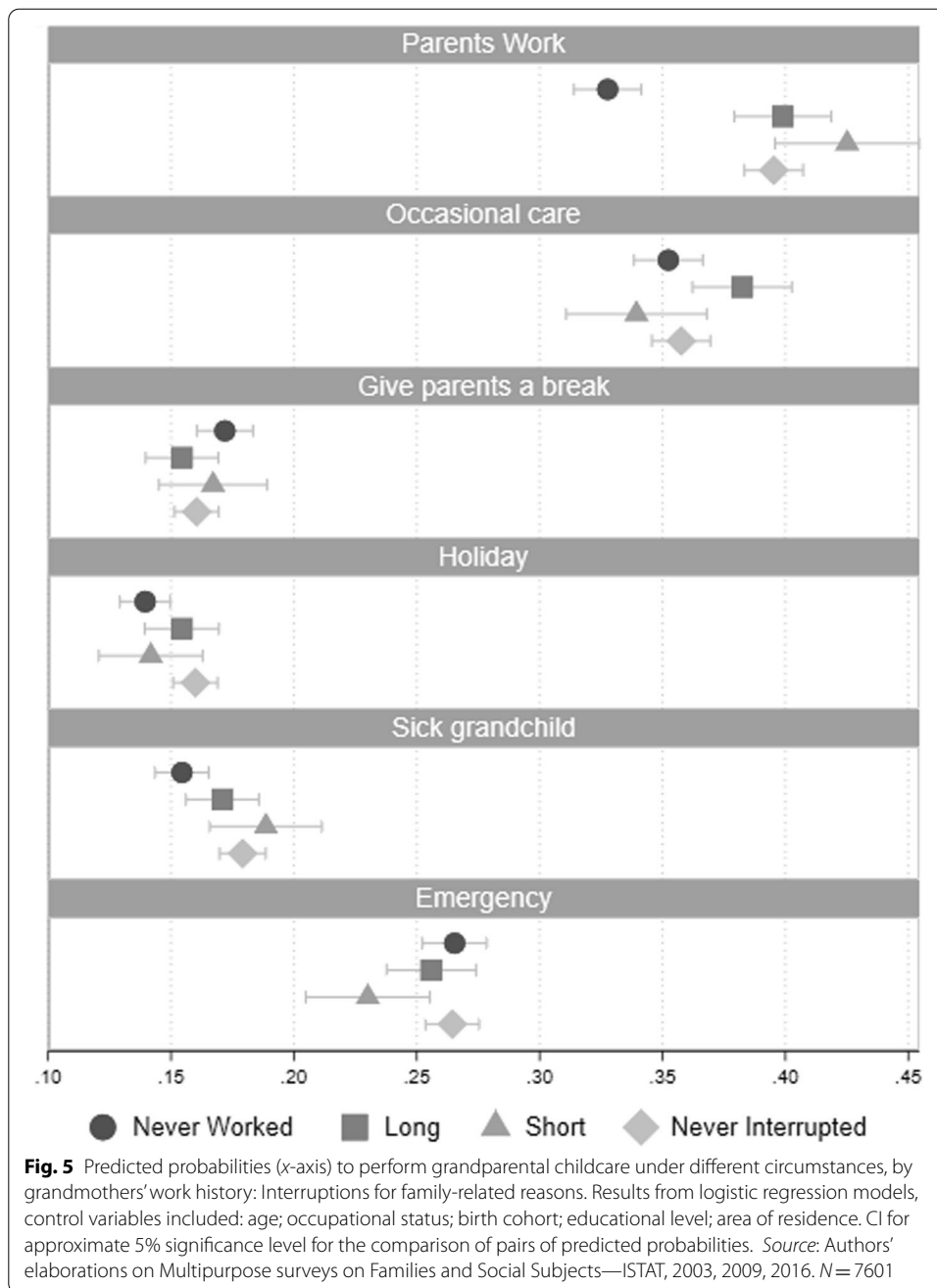
As mentioned above, only negligible differences emerged for the other care circumstances, although without a clear trend. For example, grandmothers who worked 1–25% were slightly less likely to provide childcare to *give parents a break* than those who never worked; or grandmothers who worked the largest part of their life (51–75% and 76–100%) had a higher probability to provide grandparental childcare during *holidays*. This also happened for the group 51–75% when the grandchild was *sick*.

Work history from the family-interruptions perspective

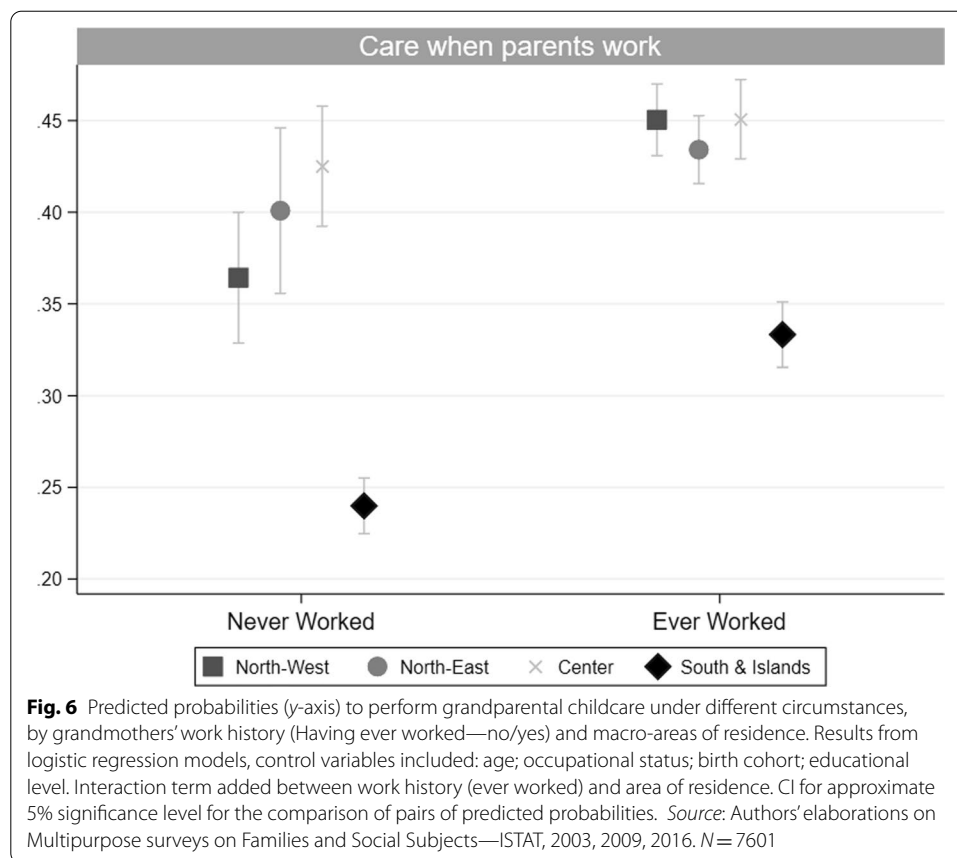
In Fig. 5, we report results of the models exploring the specification of grandmothers' employment history which accounts for employment interruptions due to family-related



reasons. The probability to engage in grandparental *care when parents work* was generally higher for women who worked, regardless of interruptions (probabilities around 0.40, slightly higher, but not significantly, for those who had short interruption). Once again, therefore, the dualism between never and ever in employment emerged, with women in the latter group generally more likely to provide grandparental childcare. A few other differences emerged, even though rather small from a substantive point of view. For example, women who did participate in the labour market in their adult life but also had long interruptions due to family reasons (i.e., > 10 years) had the highest probability to provide *occasional care* (probability equal to 0.38). Women who never



experienced interruptions were the most likely to spend time with grandchildren than those who never worked, during *holiday* (0.16) and when the grandchild was *sick* (0.18, and in this case, this holds also for women with short interruptions, $p=0.19$). Finally, grandmothers who had short interruptions are the least likely, compared to the others, to provide support in case of *emergency*.



Grandparental childcare and work history across Italian macro-areas

Finally, we examine territorial heterogeneity by adding in our models an interaction term between the work history and the area of residence. Figure 6 shows predicted probabilities for grandchild care in case of *care when parents work*, depending on whether the respondent has ever worked, by Italian macro-areas. Given the absence of territorial differences for the other care outcomes (see for example Fig. 1), we decided to focus here only on this care circumstance, which, as seen before, was the most prevalent one. Similarly, as for the work history variables, we summarize here our evidence only showing this dichotomic specification since previous results have established the dualism between never and ever worked.

Grandmothers residing in the North and Centre of Italy were overall more likely to provide *care when parents work* than grandmothers living in the South, regardless of their previous participation in the labour market, confirming the descriptive finding showed in Fig. 1. However, interesting insights of differences between the Italian areas emerged when considering the work history of the grandmother. We found that for grandmothers living in North-Eastern and Central regions there were no statistically significant differences in childcare provided by never or ever worked grandmothers (respectively, 0.40 and 0.43 for North-Eastern women, and 0.43 and 0.45 for Central ones). Conversely, both for North-West and South of Italy grandmothers, previous participation in the labour market was positively associated with a higher probability

to provide grandchild care, with an absolute difference between ever- and never-worked grandmothers around 9 percentage points in both areas. For the North-West the already high probability to take care of grandchildren when parents work raised from 0.36 to 0.45. Southern grandmothers who never worked had a probability equal to 0.24 to provide support to their working children, but the probability reached 0.34 for those who have worked during their life. In relative terms, the strongest effect was thus found in the South (a probability of grandchild care provision when parents work 42% higher for grandmothers who ever worked compared to their counterparts who never worked).

Discussion and conclusions

In this study, we focused on the link between the work history of grandmothers during their adult life (between ages 18–49) and their provision of childcare (in its multiple definitions) to grandchildren later in life, in Italy. In a context of still low offer of public childcare services and considering the changes in women's labour market participation of recent decades, a better understanding of this link is of paramount importance.

As discussed in the “[Background](#)” section of the article, competing arguments about the sign of the association between grandparental childcare provision and work history can be formulated. On the one hand, we speculated that grandmothers who had less continuous working careers, for example due to family-related interruptions, and life-long homemakers, could be the most likely to provide childcare because of their preferences for family duties. On the other hand, we argued that grandmothers' employment (or economic inactivity) could mirror their daughters' employment commitment, due to intergenerational reproduction of labour market participation. Grandmothers who never worked could be more likely to have daughters who never worked, therefore less in need of help with childcare.

Our results add to the literature on grandparental childcare in various ways. First, we found that in Italy a large percentage of grandmothers take care of their grandchildren under different circumstances, and this care is especially important when the parents work (about 40%), thus offering an important source of intergenerational support to help parents (and especially mothers). This form of grandparental childcare is particularly important in a context like the Italian one, where the provision of public services is still partial and inadequate, especially in some areas (e.g., Di Gessa et al., 2016).

Second, our results highlighted a positive association between participation in the labour market during adulthood and the probability to provide grandchild care in later life, although with different magnitudes for the various circumstances of care. We also proved that the degree of attachment to the labour market is irrelevant. We differentiated work history according to the percentage of life spent working or depending on whether grandmothers experienced or not interruptions in their work history for family-related reasons, but in both cases what mattered was whether grandmothers did participate in the labour market or not during their adult life.

Third, the association between work history and grandparental childcare provision was particularly strong when care provided while parents work was considered. In this case, we proved that this kind of intergenerational support was especially high when the grandmother herself had worked over her lifecourse, with a probability of 0.40 to provide grandchild care, against a probability of 0.33 for women who never did. This result supports the idea of intergenerational transmission of labour market behaviour, together with the fact that we did not find differences according to the specifications of work history (e.g., length of family-related work interruptions, a proxy of family orientation) and the lack (or reduced) significance for the other circumstances of grandchild care provision. Allegedly, grandmothers who have ever been employed in their life are the most likely to have employed daughters, namely daughters generally more in need of support with childcare. Moreover, we can argue that women who worked in their life, likely experiencing difficulties in reconciling work and family life in a context of low formal (i.e., public) childcare availability, are probably more prone to offer help to their children facing similar issues.

Fourth, our analysis contrasting Italian macro-areas, also offered fresh evidence. Our study proved striking territorial differences in the probability to provide grandparental childcare: regardless of their working history, in the Central and Northern regions grandmothers were much more likely to support the middle generation with care than in the South when parents work, reflecting the lower need (i.e., the lower female labour market involvement) in this latter area (see also Zamberletti et al., 2018). In terms of grandmothers' work history, differences emerged in the South and North-West of Italy, but not in the Center and North-East of Italy. In the South, grandmothers who participated in the labour market displayed an increase of roughly 40% in the probability to provide grandchild care when parents work, relative to never worked women. In the South, grandmothers who participated in the labour market displayed a probability to provide grandchild care when parents work about 40% higher relative to never worked women.

As ever-worked grandmothers were more likely to provide childcare, our explanation for differences across geographical areas lied in the intergenerational transmission of work idea. In those areas where female labour market participation is less widespread, namely in the South of Italy, women who never worked are likely to have daughters who never worked; where a high share of women works, never-worked grandmothers are allegedly as likely as ever-worked grandmothers to have working children—therefore, most grandmothers provide childcare. However, we found it to be the case also in the North-West of the country. We put forward two arguments for this unexpected result. First, it could be due to the macro-areas clustering of ISTAT, which might work well geographically, but might hide some heterogeneity. Referring to Table 1, Southern regions are pretty homogeneous in terms of the indicators considered, while this is not the case for North and Center. Unfortunately, we could not implement region-specific analysis for serious sample size constraints.

Second, it must be noticed that all geographical areas displayed the same trend, and the effect was way stronger in relative terms in the South and Islands (+42%) than in the North-West (+25%). The strongest effect of grandmothers' work history on grandchild care provision when parents work that we found in the South can be related also to the lower availability of childcare services in this area of the country: there, when young women work, they more strongly need help from grandparents than in other areas of the country. In other words, working grandmothers are more likely to have working daughters who need help in childcare, and this need is especially strong in areas where formal childcare services are scarcer. Overall, the North–South distinction, although simple, captures key gradients in services, labour market, and cultural traits.

We recognize that other layers of distinction may also matter. For example, important differences exist historically between various parts of the country in terms of family forms (Barbagli & Kertzer, 1990), but also between urban and rural areas in access to services and labour market characteristics (European Commission, 2008). Future work can provide a more fine-grained exploration of contextual characteristics potentially influencing grandchild care provision and grandmothers' labour market participation. In addition, our data did not include data on children's work status. Future studies using different data could directly test the argument about the mechanisms linking grandmothers' work histories and grandchild care provision through intergenerational transmission of labour force participation.

To conclude, our study confirmed that most Italian grandmothers are actively involved in childcare, and in a variety of circumstances ranging from supporting parents' free time and emergency, to leisure, for example during holidays. However, it was in terms of supporting adult children's employment that the largest share of grandmothers came to help, as "mother savers" (Herlofson & Hagestad, 2012). In this respect, we have highlighted important differences related to the need to reconcile work and family, encompassing grandmothers' lifelong experience, and their children's one—in contradiction with the stereotypical idea of lifelong homemakers who prioritize family over career throughout the life course. Grandparental childcare when parents work is neither more common among lifelong homemakers, nor in the traditionally "strong family"—more conservative regions; on the contrary, it is women who have been actively employed who mainly provide grandparental childcare, most likely with the aim to help their adult children (daughters) managing a career and a family. Overall, the emerging picture pinpoints the importance of conceiving care work as inextricable from labour market work, at least for most women's life courses. The lack of state-funded, good-quality childcare, in fact, still represents in Italy a constraint for women's career continuity, which in turn activates an informal and intergenerational web of support.

Appendix

See Tables 3, 4, 5, 6.

Table 3 Logistic regression models for the probability to perform grandparental childcare under different circumstances, by grandmothers' work history: having ever worked (no/yes)

	Parents work		Occasional		Give parents a break		Holiday		Sick grandchild		Emergency	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Ever Worked (ref. Never Worked)	0.33***	0.06	0.04	0.06	-0.09	0.07	0.14	0.08	0.17*	0.07	-0.04	0.06
Age	0.25**	0.08	0.14	0.08	0.11	0.10	0.20	0.10	0.16	0.10	0.20*	0.08
Age # Age	0.00***	0.00	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00*	0.00
Macro-Area (ref. North-West)												
North-East	-0.03	0.07	0.08	0.07	0.15	0.09	-0.04	0.10	0.16	0.09	0.17*	0.08
Center	0.07	0.07	-0.05	0.08	0.03	0.10	-0.31**	0.11	-0.06	0.09	0.06	0.08
South and Islands	-0.56***	0.07	0.02	0.07	-0.08	0.09	0.01	0.09	-0.50***	0.09	0.09	0.08
Employment status at interview (ref. employed)												
Not employed	0.58***	0.08	0.10	0.08	0.07	0.10	0.09	0.11	0.33**	0.11	-0.06	0.09
Educational level (ref. no education)												
Primary	0.37***	0.10	0.13	0.09	0.14	0.13	0.01	0.12	0.14	0.12	-0.01	0.10
Lower secondary	0.53***	0.11	0.19	0.10	0.38**	0.14	0.17	0.14	0.24	0.14	0.10	0.11
Upper secondary and higher	0.56***	0.11	0.15	0.10	0.52***	0.14	0.46***	0.14	0.31*	0.14	0.14	0.11
Birth cohort (ref. 1930-1939)												
1940-1947	0.07	0.07	-0.08	0.07	0.11	0.10	0.03	0.10	0.11	0.09	0.15	0.08
1948-1966	0.08	0.09	-0.13	0.09	-0.02	0.12	0.05	0.12	0.12	0.11	0.27**	0.10
Constant	-9.01***	2.43	-4.07	2.39	-4.36	3.11	-8.16*	3.24	-6.92*	3.12	-7.45**	2.62

Full models for Fig. 3. Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$
 Source: Authors' elaborations on Multipurpose surveys on Families and Social Subjects—ISTAT, 2003, 2009, 2016. N=7601

Table 4 Logistic regression models for the probability to perform grandparental childcare under different circumstances, by grandmothers' work history: Percentage of adult life (18–49) worked

	Parents work		Occasional		Give parents a break		Holiday		Sick grandchild		Emergency	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Percentage Life worked (ref. Never worked)												
1–25%	0.26***	0.08	0.07	0.08	– 0.24*	0.11	0.11	0.11	0.14	0.10	– 0.12	0.09
26–50%	0.35***	0.08	0.10	0.08	– 0.03	0.11	0.08	0.11	0.19	0.11	0.03	0.09
51–75%	0.32***	0.08	0.05	0.08	0.01	0.10	0.20	0.11	0.29**	0.10	0.02	0.09
76–100%	0.35***	0.07	0.00	0.07	– 0.07	0.09	0.16	0.09	0.11	0.09	– 0.05	0.08
Age	0.25**	0.08	0.14	0.08	0.10	0.10	0.20	0.10	0.16	0.10	0.20*	0.08
Age # Age	0.00***	0.00	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00*	0.00
Macro-Area (ref. North-West)												
North-East	– 0.03	0.07	0.08	0.07	0.16	0.09	– 0.04	0.10	0.16	0.09	0.17*	0.08
Center	0.07	0.07	– 0.05	0.08	0.02	0.10	– 0.31**	0.11	– 0.06	0.09	0.06	0.08
South and Islands	– 0.56***	0.07	0.02	0.07	– 0.08	0.09	0.01	0.09	– 0.50***	0.09	0.09	0.08
Employment status at interview (ref. employed)												
Not employed	0.60***	0.08	0.09	0.08	0.10	0.10	0.10	0.11	0.33**	0.11	– 0.05	0.09
Educational level (ref. no education)												
Primary	0.38***	0.10	0.13	0.09	0.14	0.13	0.02	0.12	0.13	0.13	– 0.01	0.10
Lower secondary	0.54***	0.11	0.19	0.10	0.38**	0.14	0.17	0.14	0.23	0.14	0.09	0.11
Upper secondary and higher	0.56***	0.11	0.15	0.10	0.51***	0.14	0.45**	0.14	0.30*	0.14	0.13	0.11
Birth cohort (ref. 1930–1939)												
1940–1947	0.07	0.07	– 0.08	0.07	0.11	0.10	0.03	0.10	0.11	0.09	0.15	0.08
1948–1966	0.09	0.09	– 0.13	0.09	– 0.01	0.12	0.05	0.12	0.12	0.11	0.28**	0.10
Constant	– 8.96***	2.43	– 4.16	2.39	– 4.28	3.12	– 8.11*	3.24	– 6.99*	3.12	– 7.44**	2.62

Full models for Fig. 4. Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Authors' elaborations on Multipurpose surveys on Families and Social Subjects—ISTAT, 2003, 2009, 2016. $N = 7601$

Table 5 Logistic regression models for the probability to perform grandparental childcare under different circumstances, by grandmothers' work history: Interruptions for family related reasons

	Parents work		Occasional		Give parents a break		Holiday		Sick grandchild		Emergency	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Interruptions for family reasons (ref. Never worked)												
Long interruptions for family reasons	0.33***	0.08	0.13	0.08	-0.12	0.10	0.12	0.11	0.12	0.10	-0.05	0.09
Short interruptions for family reasons	0.44***	0.10	-0.06	0.11	-0.04	0.13	-0.01	0.15	0.24	0.13	-0.20	0.12
No interruptions for family reasons	0.31***	0.06	0.03	0.06	-0.08	0.08	0.17*	0.08	0.18*	0.08	-0.01	0.07
Age	0.25**	0.08	0.14	0.08	0.11	0.10	0.20	0.10	0.15	0.10	0.20*	0.08
Age # Age	0.00***	0.00	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00*	0.00
Macro-Area (ref. North-West)												
North-East	-0.04	0.07	0.08	0.07	0.15	0.09	-0.04	0.10	0.16	0.09	0.17*	0.08
Center	0.08	0.07	-0.05	0.08	0.02	0.10	-0.31**	0.11	-0.06	0.09	0.06	0.09
South and Islands	-0.56***	0.07	0.03	0.07	-0.08	0.09	0.00	0.09	-0.50***	0.09	0.08	0.08
Employment status at interview (ref. employed)												
Not employed	0.58***	0.08	0.08	0.08	0.08	0.10	0.09	0.11	0.34**	0.11	-0.06	0.09
Educational level (ref. no education)												
Primary	0.37***	0.10	0.13	0.09	0.14	0.13	0.02	0.12	0.14	0.12	-0.01	0.10
Lower secondary	0.54***	0.11	0.18	0.10	0.39**	0.14	0.17	0.14	0.25	0.14	0.10	0.11
Upper secondary and higher	0.56***	0.11	0.15	0.10	0.52***	0.14	0.45**	0.14	0.31*	0.14	0.13	0.11
Birth cohort: (ref. 1930-1939)												
1940-1947	0.07	0.07	-0.08	0.07	0.11	0.10	0.03	0.10	0.11	0.09	0.15	0.08
1948-1966	0.08	0.09	-0.13	0.09	-0.02	0.12	0.05	0.12	0.11	0.11	0.28**	0.10
Constant	-9.03***	2.43	-4.18	2.39	-4.32	3.11	-8.12*	3.24	-6.85*	3.12	-7.43**	2.62

Full models for Fig. 5. Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Authors' elaborations on Multipurpose surveys on Families and Social Subjects—ISTAT, 2003, 2009, 2016. N = 7601

Table 6 Logistic regression models for the probability to perform grandparental childcare under different circumstances, by grandmothers' work history (Having ever worked—no/yes) and macro-areas

	Parents work		Occasional		Give parents a break		Holiday		Sick grandchild		Emergency	
	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE	Coef	SE
Ever worked (ref. Never worked)	0.37**	0.13	-0.02	0.13	-0.27	0.16	-0.19	0.16	-0.02	0.15	-0.13	0.14
Macro-Area (ref. North-West)	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
North-East	0.15	0.18	0.14	0.18	0.00	0.23	-0.29	0.24	-0.01	0.22	0.29	0.19
Center	0.26	0.15	-0.10	0.15	-0.11	0.19	-0.56**	0.21	-0.21	0.19	-0.05	0.17
South and Islands	-0.60***	0.13	-0.06	0.13	-0.26	0.16	-0.32*	0.16	-0.70***	0.16	-0.02	0.14
Interaction term												
Worked # North-East	-0.22	0.19	-0.07	0.20	0.20	0.25	0.31	0.27	0.22	0.24	-0.14	0.21
Worked # Center	-0.27	0.17	0.06	0.18	0.17	0.22	0.32	0.24	0.20	0.22	0.15	0.19
Worked # South and Islands	0.10	0.15	0.13	0.15	0.26	0.19	0.47*	0.19	0.28	0.19	0.17	0.16
Age	0.25**	0.08	0.14	0.08	0.10	0.10	0.19	0.10	0.15	0.10	0.21*	0.08
Age # Age	0.00***	0.00	0.00*	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00*	0.00
Employment status at interview (ref. employed)												
Not employed	0.59***	0.08	0.11	0.08	0.08	0.10	0.10	0.11	0.34**	0.11	-0.06	0.09
Educational level (ref. no education)												
Primary	0.37***	0.10	0.13	0.09	0.14	0.13	0.01	0.12	0.14	0.13	-0.01	0.10
Lower secondary	0.53***	0.11	0.19	0.10	0.38**	0.14	0.17	0.14	0.24	0.14	0.10	0.11
Upper secondary and higher	0.54***	0.11	0.14	0.10	0.52***	0.14	0.45**	0.14	0.31*	0.14	0.13	0.11
Birth cohort (ref. 1930–1939)												
1940–1947	0.08	0.07	-0.08	0.07	0.11	0.10	0.03	0.10	0.11	0.09	0.15	0.08
1948–1966	0.09	0.09	-0.13	0.09	-0.01	0.12	0.06	0.12	0.12	0.11	0.28**	0.10
Constant	-8.98***	2.44	-4.02	2.40	-4.06	3.12	-7.64*	3.25	-6.60*	3.13	-7.43**	2.63

Full models for Fig. 6. Significance level: * $p < 0.05$; ** $p < 0.01$; *** $p < 0.001$

Source: Authors' elaborations on Multipurpose surveys on Families and Social Subjects—ISTAT, 2003, 2009, 2016. $N = 7601$

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Authors' contributions

FZ contributed to the design of the work, the analysis and interpretation of data, and drafted the work. BA contributed to the design of the work, the interpretation of data, and drafted the work. EP contributed to the design of the work, the interpretation of data, and drafted the work. VB drafted the work. All authors worked on the drafted manuscript to substantively revise it. All authors have approved the submitted version and have agreed both to be personally accountable for the author's own contributions and to ensure that questions related to the accuracy or integrity of any part of the work, even ones in which the author was not personally involved, are appropriately investigated, resolved, and the resolution documented in the literature. All authors read and approved the final manuscript.

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Availability of data and materials

The data that support the findings of this study are available from the Italian National Institute of Statistics' (ISTAT) website. A restricted version of the 2016 survey is publicly available for download from <https://www.istat.it/it/archivio/microdati+ad+uso+pubblico>. Data for the 2003 and 2009 surveys can be obtained upon registration and appropriate request to the Istat Contact Center <https://contact.istat.it/>.

Declarations

Competing interests

The authors declare that they have no competing interests.

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