

Anna Marenzi e Laura Pagani

The Impact of Elder Parents on
Italian Women's Labour
Market Participation

2003/18



UNIVERSITÀ DELL'INSUBRIA
FACOLTÀ DI ECONOMIA

<http://eco.uninsubria.it>

In questi quaderni vengono pubblicati i lavori dei docenti della Facoltà di Economia dell'Università dell'Insubria. La pubblicazione di contributi di altri studiosi, che abbiano un rapporto didattico o scientifico stabile con la Facoltà, può essere proposta da un professore della Facoltà, dopo che il contributo sia stato discusso pubblicamente. Il nome del proponente è riportato in nota all'articolo. I punti di vista espressi nei quaderni della Facoltà di Economia riflettono unicamente le opinioni degli autori, e non rispecchiano necessariamente quelli della Facoltà di Economia dell'Università dell'Insubria.

These Working papers collect the work of the Faculty of Economics of the University of Insubria. The publication of work by other Authors can be proposed by a member of the Faculty, provided that the paper has been presented in public. The name of the proposer is reported in a footnote. The views expressed in the Working papers reflect the opinions of the Authors only, and not necessarily the ones of the Economics Faculty of the University of Insubria.

© Copyright Anna Marenzi e Laura Pagani

Printed in Italy in June 2003
Università degli Studi dell'Insubria
Via Ravasi 2, 21100 Varese, Italy

All rights reserved. No part of this paper may be reproduced in any form without permission of the Author.

The Impact of Elderly Parents on Labour Market Participation of Italian Women

Anna Marenzi* and Laura Pagani**

This article empirically examines the labour market participation of Italian women with special emphasis on the role of intergenerational family links, using data drawn from the Bank of Italy's 2000 *Survey of Household Income and Wealth* (SHIW). Co-residing and non-co-residing elderly people may play an important role in explaining the work patterns of women. First, they discourage the work participation of women, by requiring unpaid help; secondly, they also provide household services such as child care, increasing the supply of labour by women. Our estimates show that informal care for the elderly decreases labour market participation, and that unpaid help provided by elderly parents increases the probability of being engaged in paid work.

Jel code: J22

1. Introduction

The importance of the participation of women in the labour market and the source of policy-making interest in the subject can be considered from various points of view. First, a higher average degree of female education, and the changing of cultural models regarding the division of roles within the family, have resulted in a higher preference by women for work on the market. Second, interest in this issue also arises from the deep changes that have occurred, and still occur, within the family structure: the older age at which families are started and the rise of divorce and separation contribute to the spreading of families headed by single women, who cannot rely on a spouse for economic support.

Finally, the rise of female employment is vitally important for the sustainability of social protection system, in a context defined by the fast and relevant ageing of the population and by the widespread reduction in fertility rates. The latter phenomenon is extremely relevant in Italy, where the fertility rate is one of the lowest among OECD countries. According to forecasts, by 2020 the elderly dependency index – i.e. the ratio of population above age 64 to the working age population (age rank 15-64) - will

*Dipartimento di Economia, Università dell'Insubria, Via Ravasi, 2, 21100 Varese (Italy), e-mail: amarenzi@eco.uninsubria.it.

**Dipartimento di Economia, Università dell'Insubria, Via Ravasi, 2, 21100 Varese (Italy), e-mail: lpagani@eco.uninsubria.it.

We acknowledge financial support from MIUR 2002 and FAR 2003.

surpass 30% (Visco, 2000). The low fertility rate implies the impossibility of increasing labour supply through demographic dynamics; an increase in female labour force becomes, therefore, a fundamental tool for the overall growth of employment.

The increase in female employment is an important goal also at European level: bridging the gap between the female employment rates in the EU and the USA would increase the number of employed women in Europe by 21 million (European Commission, 2000), and European policy makers believe that the EU “must set itself the goal of restoring full employment as the key objective of economic and social policy” (European Commission, 2000). In light of this, the Lisbon strategy states that the female employment rate in the European Union should reach 60% by 2010, up from 51% now.

Meeting this goal is an especially difficult task for Italy, where the female employment rate in 2001 was 41.6%. The participation rate was also much lower than 60% - in the same year it was at 48% - indicating how distant the Lisbon target is, even in the absence of unemployment.

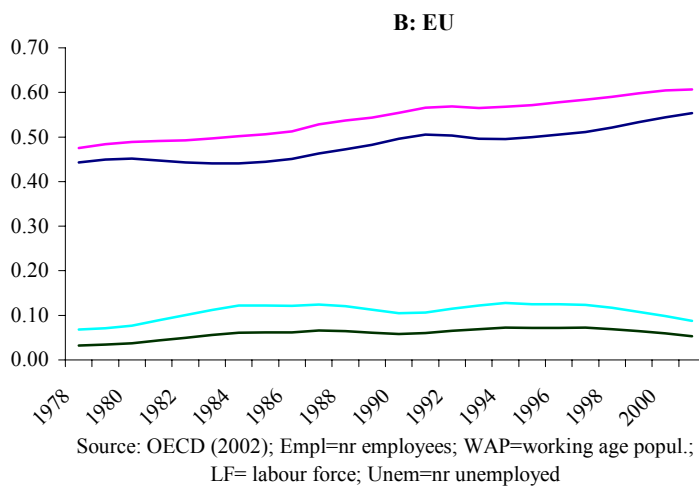
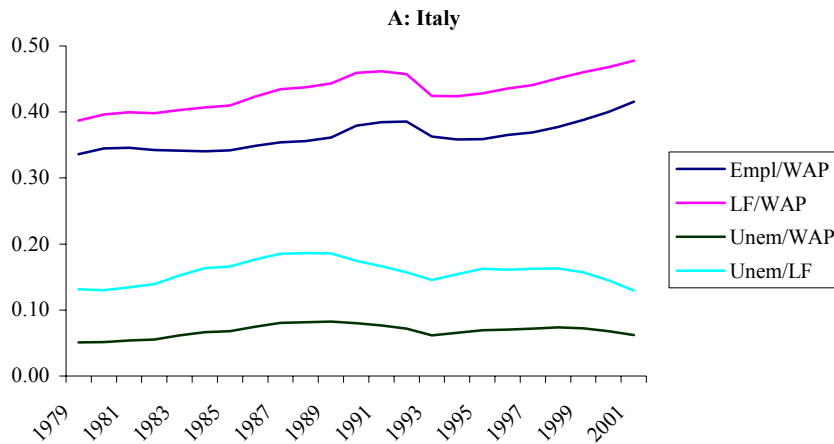
Indeed, in Italy women employment is low not only because female unemployment rate is high, but also because participation rate is small; the latter can be seen as an indication of “voluntary” non-employment. Therefore, the participation rate is the first issue to address if the goal is to increase female employment.

Figure 1 shows the female employment, unemployment and participation rates in Italy and in the European Union from 1979 to 2001.

From the graph one can infer two especially interesting phenomena. First, there is a marked increase in the rates of female employment and participation both in Italy and the EU, while the ratio of unemployed women to working age female population and the unemployment rate do not vary greatly. This suggests that the better employment performance of women over the last 20 years is largely tied to a shifting of preference towards jobs on the market, rather than better demand conditions¹.

¹ Reasons commonly cited to explain this phenomenon include the higher level of education of women, changes in the cultural and family models, a higher percentage of employment in the tertiary sector and the spreading of more flexible jobs, which generally favour female employment. Other factors can be higher wages and the ensuing reduction of the gender wage differential, and the growing weight of the woman’s income within the family budget (OECD, 2002).

Figure 1: Female participation, employment and unemployment rate



Second, when comparing Italy and the EU one notes that Italy has much lower employment and participation rates than the EU average, and a slightly higher unemployment rate.

The extremely low participation rate leads to asking why Italian women are so little attached to the labour market. Several studies have attempted to explain this evidence, generally emphasising the role of parental responsibilities². In particular, the difficulty of reconciling family duties with work on the market due to both the rationing and the lack of flexibility in the formal child care service together with the short supply of part-

² With reference to Italy, see the exhaustive survey in Bratti (2003).

time employment has been considered (among others Del Boca, 1997; Addabbo, 1999; Del Boca *et al.*, 2000; Tanda, 2001; Del Boca, 2002).

However, empirical evidence shows that the employment rate is low also for childless women³, which suggests other factors are at play.

A peculiar feature of the Italian family structure, whose impact has been scarcely analysed by the empirical literature, is the strong tie with the family of origin. The intergenerational link occurs in two directions: from the one side elderly parents receive unpaid help from their children, especially daughters; from the other side they supply household services such as child care.

Care-giving to elderly parents may well have an impact on female labour supply since informal care for the elderly is largely the responsibility of women⁴; this responsibility is becoming increasingly important in Italy because of the fast ageing of the population compounded by the scarce availability of senior care services.

The impact of the responsibility of caring for the elderly on female participation has not been investigated in Italy until now⁵.

The other direction of intergenerational solidarity, i.e. from elderly parents to children, have the opposite impact on female participation; for example, grandparents play a relevant role in child care, and this role is especially important when public child care services are lacking or scarcely available, particularly in terms of opening hours.

The habit to support children in their household tasks is very common in Italy, among other reasons because Italian workers – especially women – tend to retire at a relatively young age and thus many daughters can count on the help of parents who are not old yet, and require very little assistance.

The care-giving function of seniors has been little studied in Italy due to the lack of information for the first time available in the SHIW 2000 survey; Del Boca (2002),

³ In the year 2000, employment rate of childless women in the age rank 25-64 was 52.8% in Italy whereas the average OECD rate was 73.7% (OECD, 2002).

⁴ In the year 1998, 24.5% of women and 20.3% of men provided unpaid help to non residing people in the four weeks preceding the interview; out of these people, 26% of women and 16.8% of men provided help to elderly relatives (Istat, 2001). Indeed, the term *sandwich generation* refers to women that provide care services both to children and elderly parents.

⁵ On this issue, there exist various works based on US data that emphasise the role played by the increase in the responsibilities of working-age woman towards old parents in determining their labour supply (among others Wolf and Soldo, 1994; Ettner, 1995; Kolodinsky and Shirey, 2000).

Chiuri (2000) and Bratti (2002) have used some proxies to study the role of relatives as care-givers and generally they have found a positive effect on labour supply.

The objective of this paper is to gain additional evidence relative to the factors determining female labour market participation in Italy, in order to understand where intervention to increase it should concentrate. The focus is on the role of the family from several points of view, some already studied, others partially overlooked until now. We conduct our empirical analysis using particularly the information contained in the *Unpaid Work and Services to the Family* special section of the Bank of Italy's 2000 *Survey of Household Income and Wealth* (SHIW 2000). The information contained in the special section allow to evaluate the impact of certain factors related to the structure of the family, and of the family of origin, especially regarding the twofold role of seniors as care-givers and care-demanding.

The remaining part of the paper is organised as follow: section 2 describes the sample used. Section 3 presents a descriptive analysis of the relation between participation and family responsibilities, and also of the reasons inducing Italian women not to participate in the labour market. Section 4 and 5 describe respectively the econometric specification and the results of the estimations. The last section concludes and highlights some policy implications.

2. The Sample

As anticipated, the empirical study is carried out using data from the Bank of Italy's 2000 *Survey of Household Income and Wealth* (SHIW 2000). The analysis is conducted on the sub-sample of women between 15 and 64 (working age female population) who are heads of a household or spouses / live-in partners of the head of the household, both with and without children. Single women are also part of the sample⁶. We excluded daughters, other female relatives of the head of the household and family members not related to the head of the household, who generally have less family responsibility. Students and retired women also are not part of the sample since the reason for their lack of participation is evident.

⁶ The existing empirical studies have generally used samples composed exclusively of married women, or with live-in partners (among others, Aaberge *et al.*, 1998; Monteduro, 1998; Del Boca *et al.*, 2000); however, given the growing number of families composed of single women, often with children, we included this category in the sample.

In this manner we have selected 4,706 women whose family composition is described in Table 1 below. Single women make up 10.7% of the sample; a relevant number of them, over 45%, has at least one child. The most common family type – around 35% of the sample – is two parents, two children.

Table 1: Sample composition by family type (%)

	Single	Married/cohabitant	Total
Childless	54.35	18.74	22.57
1 child	24.90	30.26	29.69
2 children	15.22	39.21	36.63
3 children or more	5.53	11.79	11.11
Sample size	506 (10.75)	4200 (89.25)	4706 (100)

Source: SHIW 2000.

The sample size is reduced in some elaborations - including the econometric estimation – to 2349 women because the information used in building certain variables comes from the questions in the *Unpaid Work and Services to the Family* special section, and such questions have been posed to a subset of roughly half the overall sample.

3. Participation and family responsibilities

According to the model of labour supply, the choice to enter the labour force is determined by the comparison between the reservation wage and the market wage. The former is the wage an individual requires to accept a job, while the latter is the amount the market is willing to pay for the labour services; thus, factors causing an increase in the reservation wage or a decrease in the market wage impact the participation rate negatively.

It is well known that family responsibilities, especially those related to children, discourage severely labour market participation of women because they increase the marginal utility of leisure and thus raise the reservation wage. The empirical literature has focused mainly on the impact of pre-school children, because it is generally when

women have very young offspring that they prefer not to participate⁷; in particular, previously employed women with low education and low income often leave the labour market for good after children are born (Bettio and Villa, 1999; Addabbo, 1999).

Regarding our sample, Table 2 shows the distribution of participation rates for women with and without children and for age class of their youngest child.

It is clearly visible how the presence of children influences strongly the mother's participation choice: the participation rate is 48% for women with at least one child and 58% for women without children. The data show, with only one exception, a positive relation between participation rate and age of the youngest child. The difference between the participation rate of women with and without children is especially significant when the comparison is made with women whose child is in the age rank 0-2, the age group requiring the most care. As the child grows older the gap grows smaller, from 10% to 5% if the child is between 3 and 5 and to 4% if between 6 and 10.

Table 2: Participation rate by presence and age of children (%)

	Active	Inactive
Childless	58.00	42.00
With children	47.53	52.47
<i>Age of the youngest child</i>		
0-2 years old	47.49	52.51
3-5 years old	52.63	47.37
6-10 years old	54.10	45.90
11-14 years old	56.89	43.11
over 14 years old	41.62	58.38

Source: SHIW 2000. Sample size: 4706.

The difference with childless women is reduced to one percentage point if the youngest child is between 11 and 14. It is worth noting that the participation rate is at its minimum for women whose youngest child is over 14⁸. It should be pointed out that

⁷ The empirical literature relative to the link between labour supply and family pattern is huge; excellent surveys are Browning (1992) and Nakamura and Nakamura (1992); for Italy, see Bratti (2003).

⁸ It should be pointed out that since the data refer to women from different age cohorts, the low participation rate for these women is not surprising, considering that around 55% of them were born

since the data refer to women from different age cohorts, the low participation rate for these women is not surprising, considering that around 55% of them were born between the 1940s and '50s and thus belong to a generation which sees household work and caring for family members as their primary role.

The burden of parental responsibilities, highest when children are very young, can be reduced if a market for quality child care and education services is available, since the existence of such a market may render family duties compatible with work. In Italy, however, the provision of child care services is marked by two critical aspects: a very low coverage rate for children in the age rank 0-2, among the lowest in Europe⁹, and opening hours scarcely compatible with full-time employment. In the year 2000, care services for children under 3 covered on average only 7.4% of potential users (Fondazione Innocenti, 2003).

There are also large territorial disparities, meaning that there is a vast difference in the possibility of accessing such offer among families in different Italian regions. The coverage rate for the northern and central regions of Italy is slightly above 10%, but drops to 3.2% and 5.5% respectively in the South and the island regions (see Table A1 in the Appendix). The scarce coverage is compounded by the high cost of child care services, whether public or private, and the rigidity of opening hours.

However, care and household services may also be supplied by non-institutional sources, such as external and more expensive providers or by cheaper family networks. Regarding the latter, data from SHIW 2000 make available interesting information on the role of seniors, whether living with the family or not, in providing help.

As it can be seen from Table 3, active women recur more frequently to the help of elderly relatives when they have children; in addition, active women, both with and without children, resort more frequently to the support supplied by enlarged families than inactive women. Only 1.83% of inactive women with children use informal help provided by the enlarged family; the percentage climbs to 7% for active women. The percentages are respectively 2.2% and 3.6% for childless women.

between the 1940s and '50s and thus belong to a generation which sees household work and caring for family members as their primary role.

⁹ See Table A2 in the Appendix; the coverage rate is the number of places available in public kindergartens by region for every 100 children in the age rank 0-2.

Among active women, those with pre-school children are the highest users of informal help. More than 19% of those who have a child up to 2 years old resort to the help of parents; the percentage is 15% when the child is between 3 and 5, it is reduced to 10% when he is from 6 to 10 years old, and drops considerably to 1.1% when the child is over 11 years old.

The support of enlarged families appears therefore to be fundamental, especially for women with pre-school children.

Table 3: Women who use informal help (%)*

	Active	Inactive	Total
With children	7.04	1.83	4.31
Childless	3.57	2.24	3.01
<i>Age of the youngest child</i>			
0-2 years old	19.10	7.27	12.89
3-5 years old	15.00	3.89	9.74
6-10 years old	10.50	2.06	6.62
11-14 years old	3.85	1.02	2.63
over 14 years old	1.10	0.39	0.68

Source: SHIW 2000. Sample size: 2349.

*Women who answered to receive help provided by non-residing elderly parents in carrying out domestic/care tasks or coreside with a relative over 60 who does not need to be cared for.

Further evidence on a descriptive level of the importance of family responsibilities in the work choice of Italian women can be inferred from the response to the SHIW 2000 question: “Can you explain why you did not search jobs?” asked inactive women the reason for their inactivity. Table 4 shows the distribution of women by the answer provided¹⁰.

It can be seen that 78% of the sample states that they are not seeking jobs “due to family ties”. Out of this percentage, 52% states that by “family ties” they mean mainly the presence of children and/or seniors needing care, while the remaining 26% choose to remain out of the labour force in order to have more time to spend with their family.

¹⁰ This question was not asked to employed women, retired persons and homemakers over 60 years old. Only one answer is possible.

The burden of family responsibility is more relevant when there are children, particularly of pre-school age. By comparing the reasons cited by childless women with those with at least one child, it emerges that the choice not to participate in the labour market is due to family reasons for 58% of the former group and for 82% of the latter. Moreover, for women with the youngest child under 3 years old (around 10% of the sample), the voluntary exclusion from the labour market is justified in almost 75% of cases by the need to care for family members. This percentage decreases significantly as children grow, even if the percentage of women who state they have renounced paid work to have more time for family grows.

When in a woman's family there is at least one adult over 60 other than the spouse / partner, one notes an increase of over 20% in the number of women stating that they do not participate because they are involved in caring for family members.

No relevant geographical differences emerge regarding family-related reasons; however, their highest incidence is in central Italy. Among the reasons for not seeking a job, economic ones are not particularly relevant. Only 5.5% of women states that they are not looking for a job because household income is sufficient and 1.7% because entering the labour market would not be economically convenient.

The opportunity cost of leisure is expected to be inferior for less educated women, whose market wage is on average lower, given their low expected productivity. The data indeed confirm that the percentage of women not seeking a job because it would not be economically convenient is highest for women with no education, or with primary education, and drops to zero for women with university degree.

Lastly, the discouragement effect produced by the difficulty of finding work is relevant for the entire sample. The data in Table 3 show that 10.7% of women not searching for a job do so because they think finding it is difficult.

The discouragement effect seems to be related to the work status of the husband or partner, becoming more relevant (around 20%) if he is not employed.

Table 4. Reasons for which women do not participate in the labour market (%)

	<i>Family ties</i>		<i>Income effect</i>		<i>Discouragement effect</i>	<i>Other**</i>
	Care for family members	Want more time to spend with own family	Familiar income is sufficient	Not economically convenient		
by presence of children						
Childless	30.77	27.24	13.46	4.17	16.35	8.01
With children	56.01	26.28	4.07	1.26	9.63	2.76
by age of youngest child						
Child 0-2	74.63	16.59	1.46	-	5.37	1.96
Child 3-5	68.59	17.31	3.21	1.92	7.69	1.28
Child 6-10	62.80	21.20	3.60	-	10.40	2.00
Child 11-14	55.43	26.86	2.29	0.57	13.71	1.14
Child over 14	47.68	31.41	5.31	1.92	9.94	3.73
Co-residing old	73.27	14.85	2.97	0.99	4.95	2.97
by education						
Primary	47.04	30.21	3.86	2.06	11.95	4.88
Compulsory	55.00	24.32	6.08	1.49	10.14	2.97
Secondary	55.81	23.49	7.91	1.63	9.30	1.86
University degree	54.29	22.86	2.86	-	11.43	8.57
by geographical area						
North	48.67	30.93	9.73	1.57	5.97	3.14
Centre	60.88	25.29	3.82	1.76	5.29	2.94
South	51.19	23.96	3.48	1.79	15.51	4.08
Unemployed husband	49.45	18.68	1.10	-	19.78	10.99
Total	52.04	26.42	5.55	1.71	10.69	3.58

Source: SHIW 2000. Sample size 4706.

* Did not look for a job because "it is difficult to find it".

** Did not look for a job due to health/disability problem, waiting for public competition, study, other.

This can be interpreted as a product of the so-called *discouraged worker effect*, i.e. the conviction that it is more difficult to find a job if the husband / partner has not been able to.

The discouragement effect is much more relevant for Southern women (over 15%) given the very high female unemployment rate Southern Italy.

Along with the above evidence, this work goes on to build and estimate a model to verify what variables influence, *ceteris paribus*, the participation decision of Italian women. Particular emphasis is put on the factors connected to family structure, ties and networks that the descriptive analysis has shown to be the most relevant.

4. The determining factors of female participation in Italy

This section contains an analysis of the determinants of Italian female participation, made through the estimation of a probit model.

The estimations have been carried out both on the entire sample and on the sub-sample of women who are married or living with a partner, in order to verify the impact on their choice of the spouse / partner's characteristics.

The dependent variable

The dependent variable takes value 1 if the woman participates in the labour market and 0 if she does not. Participation is defined by belonging to the labour force, i.e. being employed or unemployed/first-job seekers. Unemployment, and also the situation of first-job seekers, is derived from the subjective answers to the question on the individual's prevailing condition in the reference year, which is not expressed according to the official definition. In particular, the survey does not contain questions about the willingness to work and about job search in the past four weeks; it is only possible to control if the woman has actively searched for a job in the year of the survey. Thus, we have considered active women those who stated that they are unemployed or first-job seekers and have actively sought jobs in the year of the survey¹¹.

The variable takes value 0 for inactive women, i.e. those who have stated that their primary occupation is being a homemaker, or are wealthy, and those who, although

¹¹ Obviously, even after this adjustment the number of active women is overestimated.

defining themselves as unemployed/first-job seekers, have not done anything in the last year to find a job.

The explanatory variables

The explanatory variables, starting from those intended to account for the influence of the enlarged family, are divided into six groups:

a) *Role of the enlarged family*. First of all, this group includes two dummy variables accounting for the double role, care-demanding and care-giving, of elderly relatives. The two variables are built using the SHIW 2000 special section; however, since the questions in the special section are not completely targeted for studying the role of the elderly in providing/requesting care, they have been integrated by other information from the SHIW 2000 survey.

As for the care-demanding role of the elderly, we built a dummy variable taking value 1 for women caring for both co-resident and non co-resident relatives. Women caring for non co-resident relatives are easily identified: they are women stating to “care for non residing parents or relatives”. In addition, we assumed that women care for a co-resident relative if they cohabit with a senior above 60 years old different from the husband and if they have affirmed to dedicate time to “other family components residing in the same house” (with respect to children up to 14)¹².

The second dummy variable identifies those women who receive help from the previous generation. The variable takes value 1 for the women who state in the SHIW 2000 special section that they resort, for household chores, to the help of relatives not living with the family; moreover, we have assumed that women with a live-in relative above 60 who does not need to be cared for receive help from him¹³.

Some previous studies, lacking the data from the special section of the SHIW 2000 survey, have identified the care-giving role of elderly parents through a number of hypotheses. However, these studies fail to disentangle the twofold role of care-giver and care-demanding of elderly relatives.

Chiuri (2000), using data from the SHIW 1993 survey, has included among the regressors of an employment equation both a variable identifying the presence of adults in the family and a variable accounting for the availability of grandparents residing near

¹² Obviously this assumption may overestimate the number of women caring for a co-resident elderly.

the family. The latter variable (*migration dummy*) takes value 1 – regarding couples with at least one parent alive – if the spouses were born in a different province from the one they lived in at the time of the interview; otherwise it is equal to 0. The lack of help from the enlarged family results to have a negative effect on female employment only when approximated by the migration variable; the effect of an adult residing within the family is not statistically significant. Bratti (2002) employs the same migration variable, adapting it to the hypothesis that informal help may be provided solely by grandmothers. Finally, Del Boca (2002) uses as a proxy for the help of the enlarged family the fact that at least one of the mother's parents be alive, and finds that this variable has a positive effect on participation.

It is worth noticing, however, that the proxies used in the above mentioned studies may overestimate the care-giving role of seniors, since the presence of an elderly parents may signify that he is to be cared for by the daughter, and not necessarily that he provides help to her.

We have included in this group also a variable measuring the availability by regions of places in public senior care facilities, in order to measure the impact of the offer of public services for seniors on the labour market participation of women.

b) *Human capital*. This group includes three dummy variables for the level of education. Tertiary education is excluded (university and post-graduate degree). Age and its square are included as a measure of the potential work experience.

c) *Cultural attitude towards work on the market*. On the basis of the results reported by Del Boca *et al.* (2000) and Bratti (2002) we have included two dummy variables equal to 1 in the cases where the mother and mother in law, respectively, were working at the subject's present age¹⁴. The presence of a working mother and mother in law indicates a positive attitude towards females working on the labour market by the family of origin and by the spouse / partner's family of origin.

Because of the remarkable cultural differences between southern Italy and the rest of the country regarding the role of the traditional family, and consequently the attitude

¹³ Even in this case, the number of women receiving help may be overestimated.

¹⁴ The dummy variable for a working mother-in-law is inserted only in the models estimated on the sample of women who are married or with a live-in partner.

towards women working on the labour market, we have included a dummy variable for women living in the South¹⁵.

d) *Characteristics of the spouse / partner* (only for estimation on the sample of married women and with live-in partners). The variables we included are: net income of the husband / partner during the year, three dummy variables to account for the impact of the husband / partner's level of education, and a series of dummy variables describing his position on the labour market. We have not simply identified women with an unemployed husband, as is generally done in studies focusing on the *added worker effect* - which has rarely been found in Italy (Del Boca *et al.*, 2000 and Addabbo, 1999). Instead we built three dummy variables identifying women with a husband / partner working as an employee, or self-employed, or retired, to verify the impact of such labour market conditions with respect to the excluded "unemployed husband / partner" category.

In the model estimated on the entire sample, we have included a dummy variable identifying women without a spouse or live-in partner.

e) *Role of children*. Accounted for by a series of dummy variables checking for the presence of children and the age of the youngest child, as suggested by Chiuri (2000). This group also includes a variable intended to account for the offer of public infant-care services, in line with the results obtained by Del Boca *et al.* (2000), Chiuri (2000) and Bratti (2002). It consists of the number of places available in public kindergartens by region for every 100 children between 0 and 2 years old¹⁶.

f) *Place of residence*. Lastly we have included in the model a dummy variable identifying residence in a city under 50,000 inhabitants. Living in medium- to small-sized towns may well make the management of work and family activities easier, also considering that living in a smaller city generally means more physical proximity to the family of origin. This implies that caring for the members of the enlarged family, and receiving their help, is easier.

¹⁵ We have verified that there are not statistically significant differences between residence in the North and in Centre.

¹⁶ We have not included a variable accounting for the offer of services to children aged 3 to 5, as the demand for such services does not seem to be rationed. See Table A2 in the Appendix.

5. Results

The results of the estimation are shown in Table 5. We have also computed the average predicted probabilities for different values of the significant variables; the results are depicted in Table 6. It must be observed that the estimated coefficients have the expected signs.

As for the impact of the ties with the original family (Table 5, section a and Table 6, section a) – whose identification is the main objective of this work – what emerges from the estimation is a strong influence of elderly parents in their dual care-demanding and care-giving role.

First of all, the estimation reveals in both samples that if a woman spends time to care for a senior member of the enlarged family, her probability of being employed or job seeker diminishes. Thus, the need to care for senior family members adds to child care in determining a woman's attitude towards work on the market, further discouraging female participation. For the sample of married women, the average predicted probability of participating is 48% for women who do not care for elderly relatives, whilst it is 39% for women who care for them. The same probabilities computed on the entire sample are respectively 51% and 44%.

With regard to the care-giving role of elderly parents, our estimation shows that the positive effect of the support provided by the original family in carrying out household tasks and in caring for children is quantitatively more relevant than the negative effect related to caring for the elderly. The probability of participating in the labour market for women receiving support from relatives is much higher than for those who do not, as indicated by the high, positive value of the coefficient. The changes in the predicted probability of participating caused by the fact that seniors provide help are respectively 24 (from 43% to 77%) and 19 (from 47% to 76%) percentage points in the two samples. This result is especially significant, because it highlights the importance of flexible – mostly in terms of hours of availability – and cheap household services, such as those provided informally by families.

The last variable related to the role of seniors – the provision of places in public elderly-care facilities by region – has a positive sign but scarce statistical significance.

Regarding the impact of the other control variables, it emerges that the influence on the probability of participating is in keeping with the theoretical expectations and with the results obtained in previous empirical analyses.

The human capital variables, all significant at the 1% level, are the best predictors of the decision to participate, both on the overall sample and on the sub-sample of married / cohabiting women (see Table 5, section b and Table 6, section b). As the education level decreases so does, monotonically and in relevant fashion, the probability of participating in the labour market. The same impact has been observed in several previous empirical analyses conducted on Italian data (among others, Tanda, 1994; Bettio and Villa, 1999; Addabbo, 1999; Chiuri, 2000; Bratti, 2002). Participation is increasing and concave in age; in both samples the predicted probability to be in the labour force grows up to 39 years old, when it takes its maximum value (66%), and rapidly decreases later (see Figures A1 and A2 in the Appendix).

The fact that women from the previous generation worked raises the probability of participating, and it is worth noticing that the role of the mother in law proves to be stronger than the mother's (see Table 5, section c and Table 6, section c); this finding confirms the results obtained by Del Boca *et al.* (2000) and Bratti (2002).

Residing in the South, where the traditional division of roles within the family is more widespread, determines a reduction in the probability of participation (see Table 5, section d and Table 6, section d). The result can be explained also considering the higher discouragement effect for Southern women produced by a worse functioning of the labour market, and by much higher female unemployment rate than in the rest of the country.

The impact of the spouse/partner characteristics is reported in Table 5, section e. The probability of participation grows with the income of the spouse / live-in partner, even if the induced variation is negligible. Indeed, the spouse / partner's income may have two opposing effects on such probability: on the one hand a negative impact due to an income effect, on the other hand a positive effect connected to "*assortative mating*", a phenomenon already seen in previous empirical analyses (Del Boca *et al.*, 2000; Rossetti and Tanda, 2000), whereby as the spouse / partner's income grows so does the probability that the woman will earn a high income on the market, and this favours her participation. The probability of participation also grows with the education of the

spouse / partner, even if the only statistically significant dummy is the one identifying a secondary school diploma as opposed to a university degree. No *discouraged worker effect* appears from our estimation, while there are signs of the *added worker effect*: the probability of participation is higher if the spouse / partner is unemployed rather than self-employed or retired.

Table 5: Probit estimation

	<i>Married</i>		<i>Married and single</i>	
	Coefficient	Std err	Coefficient	Std err
a) Enlarged family				
Help received	0.6783	*** 0.1325	0.4808	*** 0.1222
Help provided	-0.1467	** 0.0713	-0.1856	*** 0.0675
Places in public senior care facilities	0.0093	* 0.0048	0.0083	* 0.0046
b) Human capital				
Primary	-1.8246	*** 0.1695	-1.7807	*** 0.1387
Compulsory	-1.4707	*** 0.1529	-1.4656	*** 0.1319
Secondary	-0.8665	*** 0.1436	-0.8965	*** 0.1317
Age	0.1525	*** 0.0318	0.1505	*** 0.0287
Squared age	-0.0019	*** 0.0004	-0.0020	*** 0.0003
c) Cultural attitude				
Working mother	0.2002	*** 0.0738	0.2085	*** 0.0683
Working mother in low South	0.2541	*** 0.0757	-	-
	-0.3447	*** 0.1103	-0.2527	** 0.1034
d) Spouse/partner				
Spouse/partner income	0.0000	*** 0.0000	-	-
Primary	-0.2237	0.1608	-	-
Compulsory	-0.1805	0.1416	-	-
Secondary	-0.3399	*** 0.1297	-	-
Employee	-0.1303	0.1689	-	-
Self employed	-0.2971	* 0.1789	-	-
Retired	-0.3431	* 0.1858	-	-
e) Single	-	-	0.8610	*** 0.1156
f) Children				
Childless	1.0273	*** 0.1712	1.0610	*** 0.1626
Youngest child 3-5 years old	0.2242	0.1458	0.2106	0.1423
Youngest child 6-10 years old	0.3066	** 0.1376	0.2945	** 0.1333
Youngest child 11-14 years old	0.5295	*** 0.1528	0.5424	*** 0.1475
Youngest child over 14	0.3943	*** 0.1420	0.4004	*** 0.1362
Places in kindergartens	0.0286	** 0.0115	0.0370	*** 0.0109
g) Other				
town < 50000 inhabitants	0.1334	** 0.0642	0.1446	** 0.0608
Constant	-1.9702	*** 0.7160	-2.3364	*** 0.6376
Nr of obs.: 2111			Nr of obs: 2349	
LR chi2(25): 709.92			LR chi2(25): 835.98	
Prob > chi2: 0.0000			Prob > chi2: 0.0000	
Log likelihood:-1100.3329			Log likelihood:-1209.9801	
Pseudo R2: 0.2439			Pseudo R2: 0.2568	

Table 6: Predicted probabilities

	<i>Married</i>		<i>Married and single</i>	
	yes	no	yes	no
a) Enlarged family				
Help received	0.77	0.43	0.76	0.47
Help provided	0.39	0.48	0.44	0.51
b) Human capital				
Primary	0.20	-	0.22	-
Compulsory	0.40	-	0.42	-
Secondary	0.62	-	0.66	-
University degree	0.89	-	0.90	-
c) Cultural attitude				
Working mother	0.60	0.41	0.63	0.44
Working mother in law	0.61	0.41	0.56	0.47
South	0.28	0.56	0.31	0.60
e) Single			0.81	0.46
f) Children				
Childless	0.49	0.45	0.57	0.47
Youngest child 0-2 years old	0.47	-	0.46	-
Youngest child 3-5 years old	0.52	-	0.52	-
Youngest child 6-10 years old	0.53	-	0.55	-
Youngest child 11-14 years old	0.55	-	0.57	-
Youngest child over 14	0.37	-	0.39	-
g) Other				
town < 50000 inhabitants	0.49	0.43	0.52	0.47

Single women, *ceteris paribus*, are more likely to be in the labour force, probably because they cannot rely on the economic support of the spouse / partner (see Table 5, section f and Table 6, section f).

As shown in Table 5, section g and Table 6, section g, the influence of the presence and age of children is in line with the theoretical expectations and with several empirical analyses based on Italian data (see the survey in Bratti, 2003). The presence of a child between 0 and 2 years old strongly discourages participation, compared to both the absence of children and the presence of children of different age. The least conspicuous and least statistically significant difference appears with respect to women with children aged 3 to 5.

The provision by region of infant-care services favours the participation of women, if with modest influence. Evidence of the positive impact of the availability of child care appears, among others, in Del Boca (1997), Chiuri (2000) and Bratti (2002).

Finally (Table 5, section h and Table 6, section h), the estimation shows that living in a city with fewer than 50,000 inhabitants encourages participation. Indeed, residents in larger cities may find it more difficult to combine family commitments with market work.

6. Conclusion

The growth of female participation rate, given by the sum of the employment and unemployment rates, is an important goal for a number of reasons. From a macroeconomic standpoint, the low fertility rates recorded over the past years have brought a swift, large ageing of the population, which poses serious doubts as to the sustainability of social protection systems. The huge changes in the structure of, and roles within, the family, and in the preferences of women for work on the market also indicate how relevant the goal is from a microeconomic point of view.

The choice of studying the participation rate was aimed at understanding also the “voluntary” component of the exclusion of women from the labour market, that seems to be the one allowing the most room for policy-making action, at least in the short run.

To evidence the reasons determining the choice of entering the labour force, we have estimated a probit model highlighting, in particular, the role of the enlarged family in the determination of Italian women labour market participation. Besides the variables used traditionally in the studies on female participation, we have included a series of regressors accounting for the dual role of the family of origin.

First, strong ties to the enlarged family imply that many Italian women must add the responsibility of assisting their parents or parents in law to that of caring for their children. Indeed, the results show that the probability of participating is lower for women who must dedicate time to caring for an elderly parent; therefore, providing services to the family – especially to children and parents or parents in law – reduces the labour attachment of Italian women, as confirmed by the descriptive analysis of the reasons why women do not seek jobs presented in the third section of this study.

The results of the estimation have also shown that, for the women who can employ the support of the extended family in dealing with household chores and caring for the family, the probability of participating in the labour market is much higher. This suggests in particular the importance of the availability of household and care services at a low cost and with high flexibility. With respect to child care services, for example, the low coverage, the high cost and rigidity of opening hours mean that the existing public services do not provide much assistance in combining household work with work on the market.

The Lisbon target, which translates for Italy into an increase of almost 20 percentage points of the female employment, cannot be reached simply through a natural trend, in place for some years now, towards more participation due mainly to a progressive, constant increase in the level of female education. The results we obtained show how a fast and sizeable increase in participation could be obtained through policies for the family that reduce the burden on women of household and family responsibilities, both towards children and elderly relatives. Such policies should be aimed especially at offering more flexible and cheaper services, so that they can be as easily accessible as the informal services provided by enlarged families.

References

- Aaberge, R., Colombino, U., Strøm, S. and Wennemo, T. (1998), Evaluating Alternative Tax Reforms in Italy with a Model of Joint Labor Supply of Married Couples, *Structural Change and Economic Dynamics*, 9(4): 415-433.
- Addabbo, T. (1999), Labour Supply and Employment Probabilities in Italy: a Gender Analysis in a Regional Perspective, *Economia e Lavoro*, 33(3-4): 189-207.
- Banca D'Italia (2001), I bilanci delle famiglie italiane nell'anno 2000, *Supplemento al Bollettino Statistico. Note metodologiche e Informazioni Statistiche*, Banca d'Italia, Roma.
- Bettio, F. and Villa, P. (1999), To What Extent Does It Pay to Be Better Educated? Education and Market work for Women in Italy, *South European Society and Politics*, 4(2): 150-171.

- Bratti, M. (2002), Labour Force Participation and Marital Fertility of Italian Women: the Role of Education, forthcoming in *Journal of Population Economics*.
- Bratti, M. (2003), Offerta di lavoro: partecipazione e orario di lavoro, in Lucifora C. (ed.) *Mercato, occupazione e salari: la ricerca sul lavoro in Italia*, vol. I, Mondadori Università, Milano.
- Browning, M. (1992), Children and Household Economic Behavior, *Journal of Economic Literature*, 30(3): 1434-1475.
- Chiuri, M.C. (2000), Quality and Demand of Child Care and Female Labour Supply in Italy, *Labour*, 14(1): 97-118.
- European Commission (2000), European Council of Lisbon – An Agenda of Economic and Social Renewal for Europe, *Contribution of the European Commission to the Extraordinary European Council in Lisbon, March 23-24, 2000*, Bruxelles, February 28, 2000.
- Del Boca, D. (1997), Intrahousehold Distribution of Resources and Labour Market Participation, in Persson, I. and Jonung, C. (eds.), *Economics of the Family and Family Policies*, Routledge Press, Londra.
- Del Boca, D. (2002), The Effect of Child Care and Part Time Opportunities on Participation and Fertility Decisions in Italy, *Journal of Population Economics*, 15(3): 549-573.
- Del Boca, D., Locatelli, M. and Pasqua, S. (2000), Employment Decisions of Married Women: Evidence and Explanation, *Labour*, 14(1): 35-52.
- Ettner, S.L. (1995), The Impact of “Parent Care” on Female Labor Supply Decisions, *Demography*, 32(1): 63-80.
- Fondazione Innocenti (2003), Web site: www.minori.it.
- Istat (1999), Nonni e nipoti: le principali caratteristiche, *Statistiche in breve*, Istat, Roma.
- Istat (2001), Indagine Multiscopo sulle famiglie ‘Aspetti della vita quotidiana’ Anno 1998 – Parentela e reti di solidarietà, Istat, Roma.
- Kolodinsky, J. and Shirey, L. (2000), The Impact of Living with an Elder Parent on Adult Daughter’s Labour Supply and Hours of Work, *Journal of Family and Economic Issues*, 21(2): 149-175.

- Monteduro, M.T. (1998), Unemployment, Discouraged Workers and Female Labour Supply: An Empirical Study in Italy, *Quaderni di Dipartimento n. 4*, Dipartimento di Economia, Istituzioni e Territorio, Università degli Studi di Ferrara.
- Nakamura, A. e Nakamura, M. (1994), Predicting Female Labor Supply: Effects of Children and Recent Work Experience, *The Journal of Human Resources*, 29(2): 304-327.
- Nakamura, A. e Nakamura, N. (1992), The Econometrics of Female Labour Supply and Children, *Econometric Review*, 11(1): 1-71.
- OECD (2001), Employment Outlook, OCSE, Parigi.
- OECD (2002), Employment Outlook, OCSE, Parigi.
- Rossetti, S. and Tanda, P. (2000), Human Capital, Wages and Family Interactions, *Labour*, 14(1): 5-34.
- Tanda, P. (1994), Partecipazione femminile in Italia: evidenza empirica su dati individuali, *Economia e Lavoro*, 28(1): 123-34.
- Tanda, P. (2001), Le politiche di tutela della maternità e il mercato del lavoro, *Rapporto trimestrale ISAE*, Roma.
- Visco, I. (2000), Welfare, invecchiamento della popolazione e lavoro: una prospettiva OCSE, *Moneta e Credito*, 209, 55-85.
- Wolf, D.A. e Soldo, B.J. (1994), Married Women's Allocation of Time to Employment and Care of Elderly Parents, *The Journal of Human Resources*, 29(4): 1259-1276.

APPENDIX

Table A1: Kindergarten (0-2 years) by region - 2000

Region	Places/100 children 0-2 years old
Piemonte	10.7
Valle d'Aosta	12.3
Lombardia	9.7
Liguria	9.7
Trentino-Alto-Adige	7.5
Veneto	7.2
Friuli-Venezia giulia	7.8
Emilia-Romagna	18.3
Toscana	11.3
Umbria	11.6
Marche	11.5
Lazio	8.5
Abruzzo	4.1
Molise	2.9
Campania	2.2
Puglia	2.7
Basilicata	5.2
Calabria	1.9
Sicilia	4.7
Sardegna	6.4
Italia	7.4

Source: Fondazione Innocenti (2003).

Table A2: Kindergarten (0-2 and 3-5 years old)*

	Years	0-2 years old	3-5 years old
Finland	1998	22	66
Norvey	1997	40	80
Sweden	1998	48	80
Denmark	1998	64	91
Netherlands	1998	6	98
UK	2000	34	60
Ireland	1998	38	56
Germany	2000	10	78
Austria	1998	4	68
Belgium	2000	30	97
France	1998	29	99
Portugal	1999	12	75
Spain	2000	5	84
Greece	2000	3	46
Italy	2000	7	98

Source: OECD (2001) and Fondazione Innocenti (2003).

* Places in kindergarten for every 100 children 0-2 and 3-5 years old

Figure A1: Predicted probability by age – married women

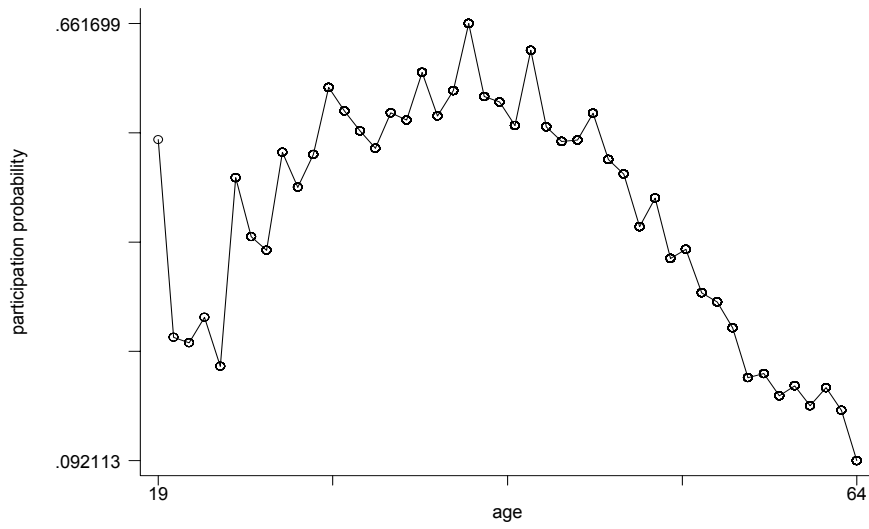


Figure A2: Predicted probability by age – married and single women

