Ca' Foscari University of Venice

Master's Degree in Economics and Finance

Final Thesis

Working Women vs Working Mothers: an Analysis of Italian Newspapers' Articles

Student:

Giorgia Lanzarini

Matriculation number: 872616

Supervisors:

Prof. Ylenia Brilli

Prof. Carlo Santagiustina

Academic Year: 2023/2024

I would like to thank my supervisors, Professors Ylenia Brilli and Carlo Santagiustina for the time they dedicated to me and for their invaluable help and support in the realization of this thesis.
I would like to thank also my family and friends who supported me and believed in me, and for being there throughout this journey.

Contents

Introduction

As the female employment rate remains steadily below that of men, both in Italy and around the world, it is interesting to look into the reasons for this gender gap. There are both structural and cultural challenges holding back female participation in the labor market. This thesis aims at investigating the role of social norms and gender stereotypes in perpetuating this disparity. By examining how Italian newspapers frame the narrative surrounding working women and working mothers, we aim at uncovering the social attitudes and beliefs that may contribute to the persistence of this gender gap in the labor market.

To do so, we analyze over 200 Italian newspaper articles, over the span of two years, containing keywords such as "working women" and "working mothers". Moreover, we look at whether the change from a government led by Mario Draghi, comprising ministers with diverse political views, to the right-wing government led by Giorgia Meloni in 2022, influenced the way and the amount in which these topics are discussed.

We do so by using a structural topic model, a machine learning technique that aims at uncovering the latent topics in a corpus of documents, allowing for the inclusion of metadata and providing information regarding the most frequently used words and the change of topic proportions in documents over time.

This thesis is organized as follows: chapter 1 reviews the literature on family policies, the study of social norms, and the use of the structural topic model. Chapter 2 provides a background on the condition of women in the Italian labor market, distinguishing between structural and cultural challenges, and provides a description of the main Italian political events in 2022. Chapter 3 describes the data we used and explains the method. Finally, chapter 4 describes the results of our analysis.

1 Literature Review

The study of the condition of women and mothers in the labor market is multifaceted, as it investigates both the effects of various family policies such as parental leave and childcare subsidies, the magnitude of phenomena like the gender wage gap and the glass ceiling, and the influence of social norms on career decisions.

A study conducted by Kleven et al. (2019) shows that child penalties are a pervasive phenomenon that consist of a reduction in earnings, career advancement, and job opportunities that mothers experience after having a child and that can last for years after childbirth, while men are not affected by this. They manifest through three channels: a reduction of labor supply both at the intensive and extensive margin and a reduction in the wage rate, in different magnitudes across countries. Moreover, maternity affects labor outcomes by reducing mothers' career prospects, due to the new responsibilities they have to face. In addition, women may anticipate this effect by choosing educational and professional paths that allow them to have jobs that can more easily accommodate flexible schedules but that are less paid (Carta, 2019).

1.1 Family Policies

Parental leave and child care policies are the primary family-friendly programs implemented in developed countries, aimed at assisting mothers in balancing work and family responsibilities.

Several studies have been conducted on the effect of various forms of maternity and parental leave on female employment. The impact is not clear from a theoretical perspective: while they represent an opportunity for women to stay in the labor market, they may induce them to benefit from longer periods out of work, thus making re-entry more difficult. Moreover, long leaves may reinforce employers' beliefs of women's primary role in childcare and household responsibilities, thus discriminating against them. Evidence of the effect of these policies is mixed and depends on the characteristics of the policy and the recipients (Olivetti and Petrongolo, 2017).

Baker and Milligan (2008) studied the relationship between maternity leave and labor supply in Canada, finding that job-protected leaves of around 18 weeks increase time spent at home and favor return to pre-birth employment. Lalive et al. (2014) estimated the causal impact of three parental leave reforms in Austria, that changed the duration of cash benefits and job protection, on labor market outcomes in the medium run. They find that extensions of parental leave significantly delay return to work without detrimental effects on medium-run outcomes. A study conducted in Germany by Schönberg and Ludsteck (2014) found that extensions in job protection leads to longer leaves with no effect on wages and employment, while extensions of cash benefits have adverse effects on long-run employment and earnings of women. Finally, Girsberger et al. (2023) studied the effect of the introduction of maternity leave in Switzerland, finding some small positive effects in employment and earnings, only in the medium run.

Paternity leave instead has been shown to be weakly positively related to female employment, particularly for mothers with small children. However, being a relatively recent policy, data to estimate their impact on female employment is limited (Profeta, 2020).

Similarly to parental leave policies, identifying the causal impact of childcare policies on female employment is far from easy. Evidence is mixed and different studies in multiple countries lead to different conclusions.

Brilli et al. (2016) studied the role of coverage of public childcare in Italy for the age 0-3 on mothers' employment, finding positive and significant effects. Nollenberger and Rodríguez-Planas (2015) examine the impact of providing full-time public childcare for 3-year-olds in a setting with low female labor force participation and inadequate child care infrastructure, finding considerable positive effects. Lefebvre and Merrigan (2008) found that a policy implemented in Québec, Canada, reducing the childcare fee for 4-year-old children increased maternal employment. More modest effects instead are found in studies conducted in Norway, relative to children aged 3-6 (Havnes and Mogstad, 2011), and in France (Givord and Marbot, 2015).

As children grow up and reach primary-school age, extended school time becomes important to allow mothers to work: Bovini et al. (2023a) found that longer school days increase

mothers' participation in the labor market, with long-lasting effects. This allows women to work longer hours, especially when they cannot rely on relatives or other forms of support to take care of their children after school.

In general, the positive effects of childcare policies on the employment of mothers are observed in conditions of low maternal employment, little availability of alternatives to maternal care, and less traditional gender norms that incentivize women to return to work after maternity (Carta et al., 2023).

1.2   Social Norms

There are multiple factors determining the participation of women, and mothers, in the labor market. Some are structural, as those mentioned above, while others are cultural and include stereotypes in society, family, and the workplace, traditional gender norms affecting the division of labor within the household and consequently the labor supply of women and mothers, education choices, as well as discrimination in the workplace, and the presence of role models.

1.2.1   Education and Role Models

Gender stereotypes start to affect a woman's career and more in general gender gaps as early as at the time of the choice of educational path.

The main factor influencing gender differences in the choice of fields of study is preferences regarding the coursework of different high-school and college majors, and job characteristics such as flexible arrangements for women.

Preferences are determined by familiar and scholastic environment as well as stereotypes and culture. The presence of role models in the family and at school, such as opposite-sex siblings or teachers, can impact educational choices of girls and their willingness to study male-dominated subjects, such as STEM (Brenøe, 2022). Also the presence of high-ability same-sex classmates has similar effects both on girls and boys, as their perception of themselves is influenced by their peers. Modena et al. (2022) analyze the effects of high-performing male and female peers on individual academic performance in Italy, finding stronger beneficial effects on same-gender students, in particular for females.

The role of teachers is manifold, as they act as role models but at the same time possible gender bias may affect students' performance in scientific subjects. Having female teachers in high school and university positively affects female students' performance and their probability of choosing male-dominated majors, especially for those who have high math abilities (Carrell et al., 2010; Bettinger and Long, 2005; Nixon and Robinson, 1999). Teachers' gender bias, however, can have long-term effects on educational choices. A study conducted in Italy by Carlana (2019), found that teachers have strong stereotypes on girls' scientific abilities, inducing them to follow less scientific tracks through biased recommendations.

As a result, women represent the majority in non-STEM fields such as humanities, languages and social sciences both in high school and university, representing, in all OECD countries, approximately 80% of graduates in education and 70% of graduates in the fields of arts and humanities or social sciences, but only 27% in engineering. In addition, the fields where women are the majority, correspond also to those that guarantee them worse labor market prospects in terms of earnings and employment (Bovini et al., 2023b).

Family models also play an important role in shaping gender role attitudes, by establishing patterns for the division of labor both within the household and outside. This is explained in the Social Role Theory of Eagly (2013) that says that people's beliefs about gender roles are based on their observation of the daily behavior of men and women.

The male breadwinner-female homemaker model is an example of gendered division of labor that has been carried on for a long time and that has begun to change only recently (Lomazzi and Seddig, 2020).

Studies have found that adolescents are influenced by their mother's working status Akerlof (1980) and women's probability to work is positively and significantly correlated with whether her husband's mother worked (Fernández et al., 2004).

1.2.2 Discrimination in the Workplace

Discrimination coming from the demand side of labor is also determinant of gender gaps. It can be distinguished into three different forms.

First, employers' prejudices on women's capabilities, even when their productivity is the

same as men, lead to taste discrimination. This theory was first proposed in *The Economics of Discrimination* by Becker (1957). The model assumes that employers are willing to forgo higher productivity to avoid hiring individuals from the discriminated group, in this case women.

Second, because of asymmetric information on individuals' value of work, they may resort to group averages as a proxy for women's value of work. They may expect women to spend more time in household and childcare duties and therefore treat men more favorably in terms of hirings, wages, and promotions. This is called statistical discrimination and was proposed by Arrow (1971).

Finally, screening discrimination arises because the selection process is not gender neutral since employers can evaluate candidates of their own sex more accurately. It is indeed easier to screen people with similar characteristics and backgrounds, therefore men (women) will be more accurate in the assessment of male (female) candidates (Profeta, 2020).

For example, Goldin and Rouse (2000) found that blind auditions in major American orchestras, where the evaluators could not observe the sex of the musician, increased the likelihood that female musicians would advance and the number of women in orchestras.

Campa et al. (2011) measure the effect of gender culture on employment in Italy, distinguishing between firms and individuals' culture, referring to preference of firms and of individuals respectively. Using data from the World Value Survey relative to questions on the satisfaction of women working rather than staying home, the well-being of children whose mothers work, and the right of men and women to paid jobs when they are scarce, they find that firms' culture is a significant determinant of differences in the ratio of female over male employment, observing geographical heterogeneity with higher gender equality in the Northern regions. Concerning individuals' culture, which they instrument with the ratio of female over male literacy rates in 1911, they find that there are positive and significant effects of this instrument on individuals' culture and in turn on gender equality in employment.

On the other side, when entering the job market changing jobs, people sort themselves into different occupations, based on their skills, preferences, education, but also social gender

norms. Another example of these norms, on top of the male breadwinner-female homemaker division of labor, is proposed by Akerlof and Kranton (2000): they make the example of a woman entering Marines, a male-dominated occupation, who may not be comfortable with her choice, due to social norms prescribing men to take up this kind of job. On the other hand, male Marines may not treat her well because of her gender, thus shying away women who want to enter this profession. A further explanation comes from Goldin (2014), who proposes a "pollution" model where men lose prestige from working in traditionally male-dominated jobs when women start to participate in those jobs. They are scared, indeed, that this might signal that they need fewer skills to perform that job, thus reinforcing statistical discrimination, as they judge women based on group's average characteristics, not individual ones, which instead tell that, since they have been hired, they are in fact able to perform that job just as well as a man (Bertrand, 2011).

This might also explain why men are reticent in participating in housework, such as cleaning and cooking: they might see these as unskilled jobs that would affect their "reputation" if they carried them out.

Taking a look at the social norms on the labor supply of mothers, as already mentioned, Campa et al. (2011) found that individuals and firms' culture influence female employment. Moreover, Cortés et al. (2022) suggest that the misperception of support to maternal labor supply contributes to the stickiness of social norms. In particular they study first- and second-order beliefs on whether a mother of a young child should return to work and whether it is the wife who should take time off from work to take care of the child. They find that first-order beliefs are more progressive than second order beliefs and therefore an overestimation of how conservative peers are.

1.2.3 Spread of Social Norms and Gender Roles

As already mentioned, gender roles are perpetuated by family models, teachers, traditions, and culture, even if more slowly than it happened in past decades. In addition, peers can also influence individuals' gender role attitudes through social learning and social pressure. Mothers may gather information on the effects of choosing to return to work or staying home

by looking at same-sex adults and at peers (social learning mechanism), but also conform to social norms (social pressure mechanism) (Akerlof and Kranton, 2000; Fernandez, 2007; Fogli and Veldkamp, 2011).

In this respect, Cavapozzi et al. (2021) have found that having peers with more progressive gender norms leads to an increased female participation in the labor market. Moreover, they found that more educated women have more access to information and therefore conform less to social norms and are less subject to social pressure.

1.3   Analysis of Newspapers and Use of Structural Topic Models

A few studies have used data from newspaper articles. These include Boussalis et al. (2023) who analyzed 135.000 North Korean state-generated news articles between 1997 and 2018 to show that North Korea systematically adjusted its communication strategies following the leadership transfer from Kim Jong Il to Kim Jong Un; Chandelier et al. (2018) who studied the media coverage of wolf recolonization in France using a structural topic model; Schmidt et al. (2013) analyzed the media coverage of climate change using newspaper articles from 27 countries. Finally, Chuang et al. (2014) applied the structural topic model to analyze newspaper articles using mediacloud.com

We can now take a look at previous studies that employed the structural topic model, which has been used in a wide range of subjects.

The first study was conducted by Roberts et al. (2014) to analyze open-ended survey responses, as a way to make such analysis easier, faster, and less expensive than human coding. Following this study, Chung et al. (2022) analyzed a survey on parents' coping behavior during the Covid-19 pandemic in Singapore.

This method has also been used in other fields such as sustainable finance (Cruciani and Santagiustina, 2023) and in the analysis of Twitter debate on Brexit (Santagiustina and Warglien, 2022). Moreover, Busby et al. (2023) use this method to compare survey data on stereotypes of partisans collected before and after the Trump presidency. In the medicine field there exist a few studies that employed this method (Lu et al., 2016; Chen et al., 2018; Rusanov et al., 2018). Finally, in the field of maritime transport, Bai et al. (2021) analyzed

over 3000 scientific articles regarding port and shipping management, to understand the main research topics and emerging trends in that research field.

To our knowledge, there is no study that analyzed articles on working women and mothers.

2 Background

2.1 An Overview of Female Employment and Gender Gaps in Italy

Women are severely underrepresented in the global labor market: around 50% of women work or actively seek work, compared to 80% of men: this difference is mainly due to participation rates that are influenced by multiple factors that are both structural and cultural (De Philippis, 2017; World Bank, 2023).

2.1.1 Female Employment and the Role of Part-Time Work

In Italy, the female employment rate in the 15-64 age group has been rising, reaching 51.1% in 2022, which is much higher than the 1990 value (36.2%) but it remains steadily below the OECD average by around 15 percentage points, and is far below male employment rate, by 18.1 percentage points (Figure 1).

Figure 1: Employment rate of individuals aged 15-64
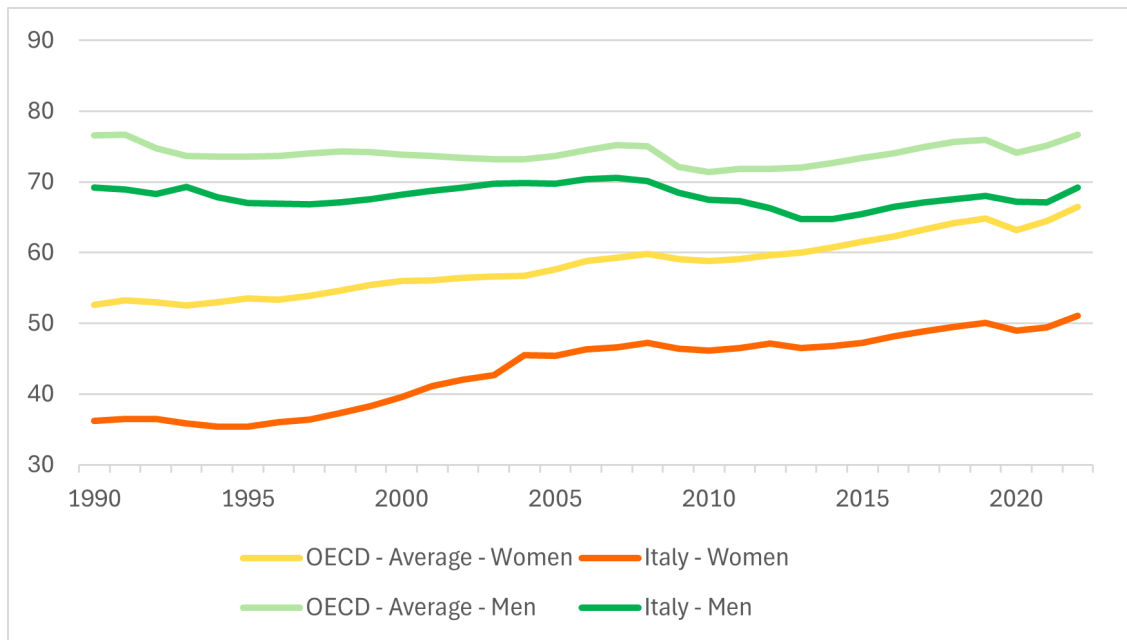
Source: own elaboration of data from OECD (2023a).

Among the factors that contributed to this increase in female employment, there is education. While in 1990 only 7% of women aged 25-34 had a university degree, in 2022 this value

increased to over 35%, while for men the increase was more modest, from 7% to 23% (Carta et al., 2023). As higher-educated population groups are more attached to the labor market, this increase in education boosted the aggregate labor force participation rate (De Philippis, 2017).

Another factor that favored the participation of women in the labor force is the diffusion of part-time contracts. In 1983, the share of women employed part-time was 17.5%, which increased to 30.4% in 2022, while the OECD average slowly decreased from 25.3% to 19.8%. At the same time, the share of men employed in part-time contracts fluctuated between 3.2% and 8.2% (Figure 2).

This increase in the share of part-time contracts is due to multiple factors. First, this type of contract allows workers to divide their time between family and work, which is a feature often exploited by women, who carry the major part of the burden of caregiving work.

Second, the expansion of the service economy, where part-time contracts are more common and female employment prevails, created jobs that are safer and cleaner and therefore more attractive to women, especially if they have a comparative advantage in the production of services (Buono and Polselli, 2022; Olivetti and Petrongolo, 2016).

However, the incidence of involuntary part-time contracts among Italian female workers is high compared to OECD countries. While in the early 80s, the share was 38.9%, 10 percentage points above the OECD average, it then followed a decreasing trend similar to that of OECD countries, until the late 2000s, diverging later and reaching a peak around 62% between 2012 and 2020, with up to 44 percentage points of difference from OECD countries (Figure 3).

### 2.1.2 Division of Work within Households

Contributing to the gender gap there is also the uneven distribution of hours devoted to housework and caregiving duties. According to the European-wide Harmonized Time Use Survey conducted in 2014, Italians aged 15 or more spend almost four hours a day in unpaid forms of work (doing domestic work: 74.5%; taking care of their relatives: 10.8%; volun-

Figure 2: Share of part-time employment over total employment for individuals aged 15-64.
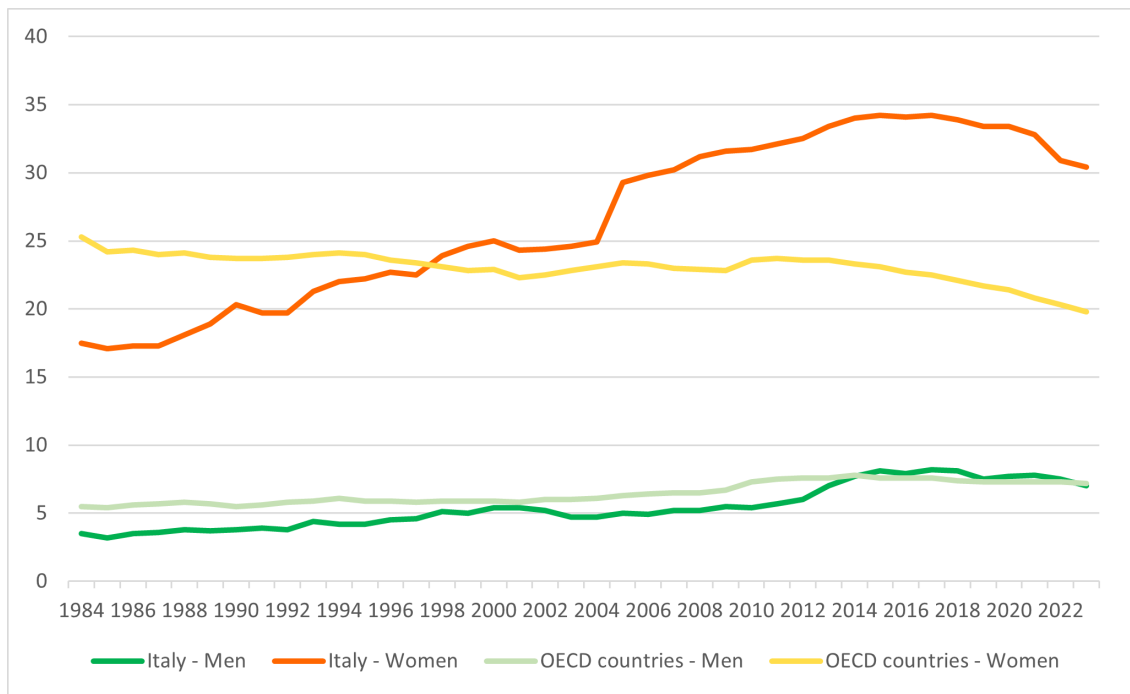
Source: own elaboration of data from OECD (2023a).

Figure 3: Share of involuntary part-time employment over part-time employment for individuals aged 15-64.
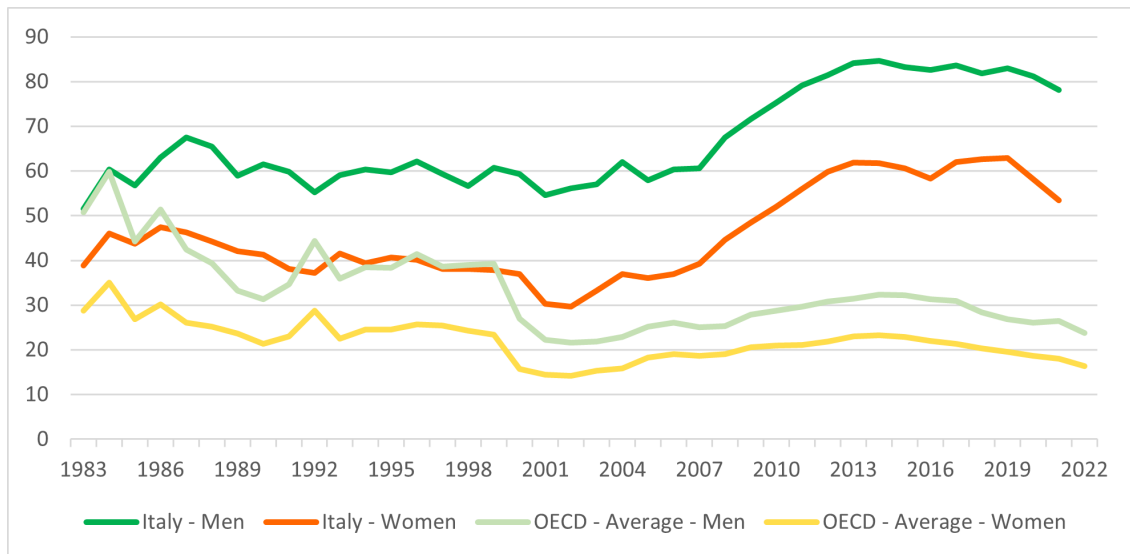
Source: own elaboration of data from OECD (2023a).

teering: 4.9%; including traveling time necessary for these activities: 9.6%), being the fifth country in Europe. The gender gap however is very large: while men spend on average 2:16 hours doing these activities, women spend 5:09 hours every day. In particular, regarding domestic activities, only 54.9% of men participate in routine activities such as cleaning and cooking, in contrast to 89.8% of women.

Gender gaps are still wide, but slightly reduced when looking at the participation and time spent in caregiving activities of minor children. Participation rates amount to 46.8% for men and 73% for women, who spend 1:20 hours and 1:44 hours a day, respectively, in these activities.

Finally the gap is almost null when considering interactive pleasurable activities such as reading and playing with children (Cappadozzi, 2019).

Another factor that influences the labor supply of women, in particular those who are married, is the taxation on labor income. While the labor supply of primary earners, typically men, is not very responsive to taxes, secondary earners, who are women in most cases, are much more sensitive to taxes, mainly on the extensive margin (Profeta, 2020).

In Italy, even though income taxation is calculated on individual income, benefits depend on the combined household income, and some tax benefits are provided for dependent spouses. This affects incentives to work especially for secondary earners, who are often women, given the fact that non-employed women are more likely than non-employed men to live with employed partners and therefore more likely to be secondary earners (Carta et al., 2023).

Tax schemes such as spouse tax credit (*detrazione per coniuge a carico*), means-tested income-support transfers (*ISEE: Indicatore della Situazione Economica Equivalente*), and, for mothers, cash transfers for the use of childcare (*bonus nido*) or family cash transfers (*assegno unico universale*), and finally guaranteed minimum income (*Reddito di cittadinanza*) are designed in a way that does not incentivize women or mothers to work.

As we can see from Figure 4, while male employment increases with the number of children, female employment remains stable, with a substantial drop for women with 3 or more children. However, the proportion of women working part-time grows as their family size increases (Figure 5).

Figure 4: Employment rate of individuals aged 20-49 in Italy, by gender, year, and number of children.
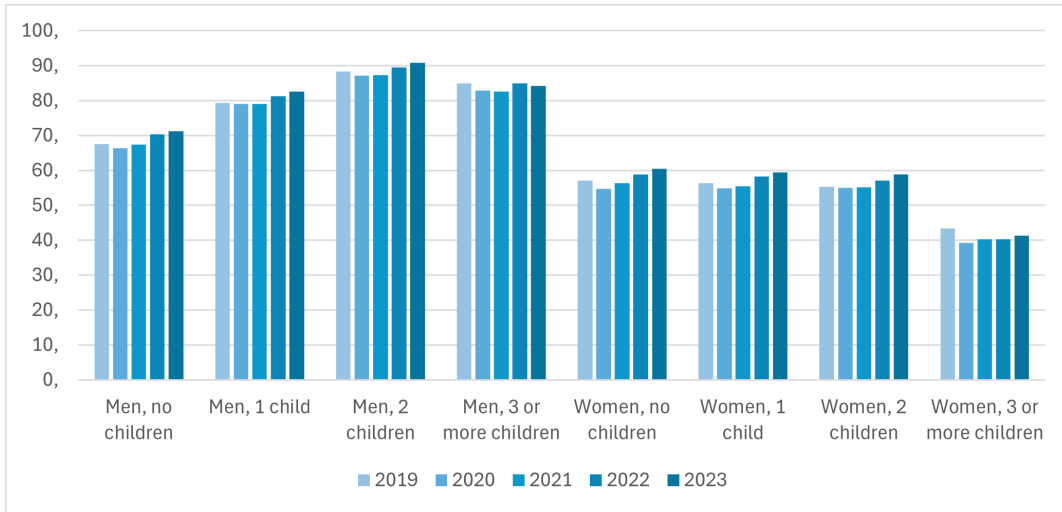
The data shows a discontinuity in 2021, due to the updates established by regulation EU/2019/1700 which provides, in particular, new criteria for identifying employed individuals. The overall duration of the absence from work (more or less than 3 months) becomes the prevailing criterion to define the condition of employed. Source: own elaboration of data from Eurostat, Labor Force Survey.

Figure 5: Percentage of part-time employment of individuals aged 20-49 in Italy, by gender, year, and number of children.
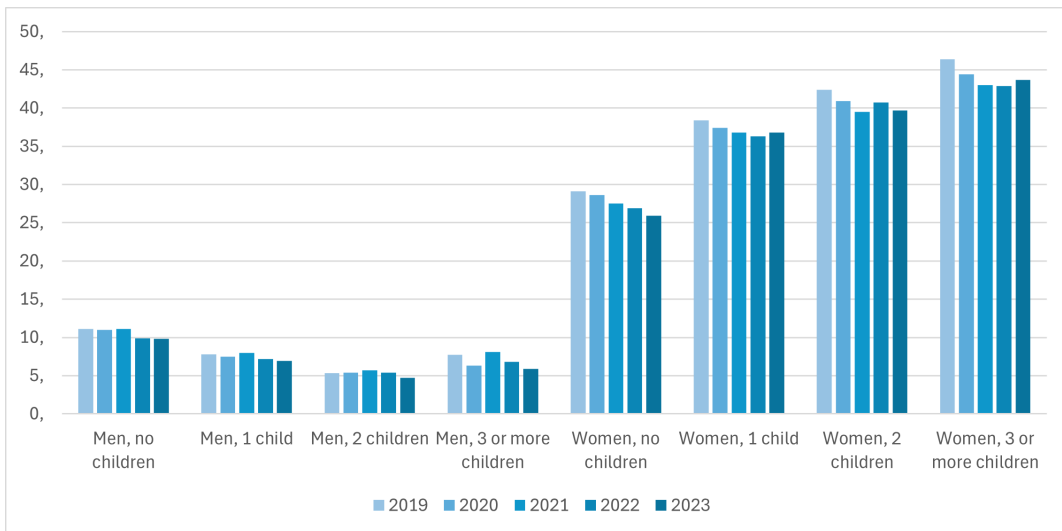
The data shows a discontinuity in 2021, due to the updates established by regulation EU/2019/1700 which provides, in particular, new criteria for identifying employed individuals. The overall duration of the absence from work (more or less than 3 months) becomes the prevailing criterion to define the condition of employed. Source: own elaboration of data from Eurostat, Labor Force Survey.

2.1.3 Family Policies

One way to attenuate the penalty is represented by various forms of family policies, namely maternity leave, paternity leave, parental leave, and childcare subsidies, that are also relevant in the promotion of female and maternal employment and the reduction of gender gaps.

Maternity leaves are job-protected periods, reserved for mothers, occurring around the time of childbirth or adoption, usually funded by the social insurance system, and vary in length and generosity across countries.

In Italy, mothers are entitled to 5 months of flexible compulsory maternity leave at 80% replacement rate. This measure is quite generous compared to other OECD countries. Parental leave, instead, is voluntary and grants both parents up to 6 months each at 30% replacement rate for nine months and is then unpaid. However, take up this form of leave is low and mainly by women, which could be attributed both to social norms and economic considerations.

Parental leaves instead can be shared among parents but are usually taken by mothers to maximize the income of the household (OECD, 2023b; Profeta, 2020). As we can see from Figure 6, across many OECD countries the share of male users of parental leave ranges from values close to zero in countries such as Australia and New Zealand, and reaches higher values around 50% in Luxembourg and Sweden, while in Italy, only 21.2% of users are men.

Figure 6: Gender distribution of recipients/users of publicly-administered paid parental leave/benefits.
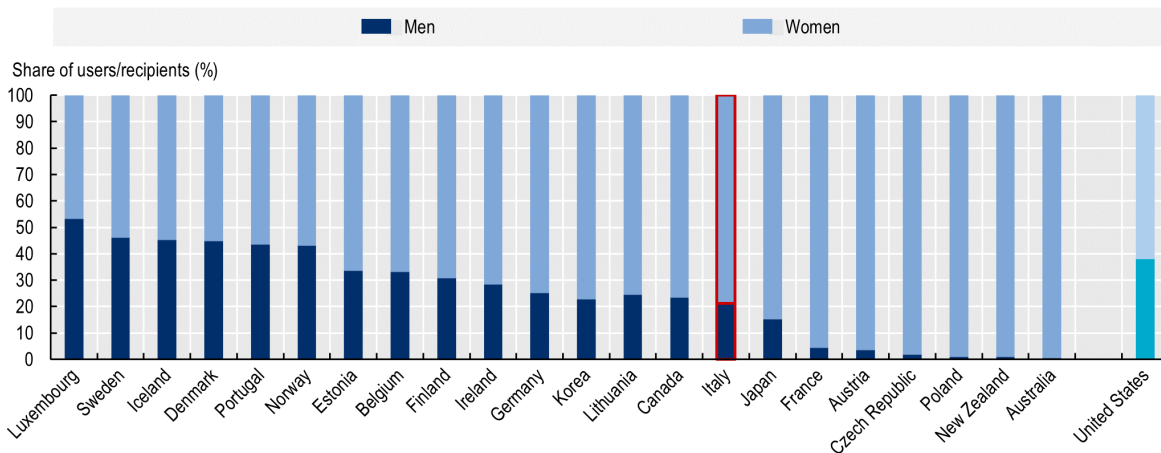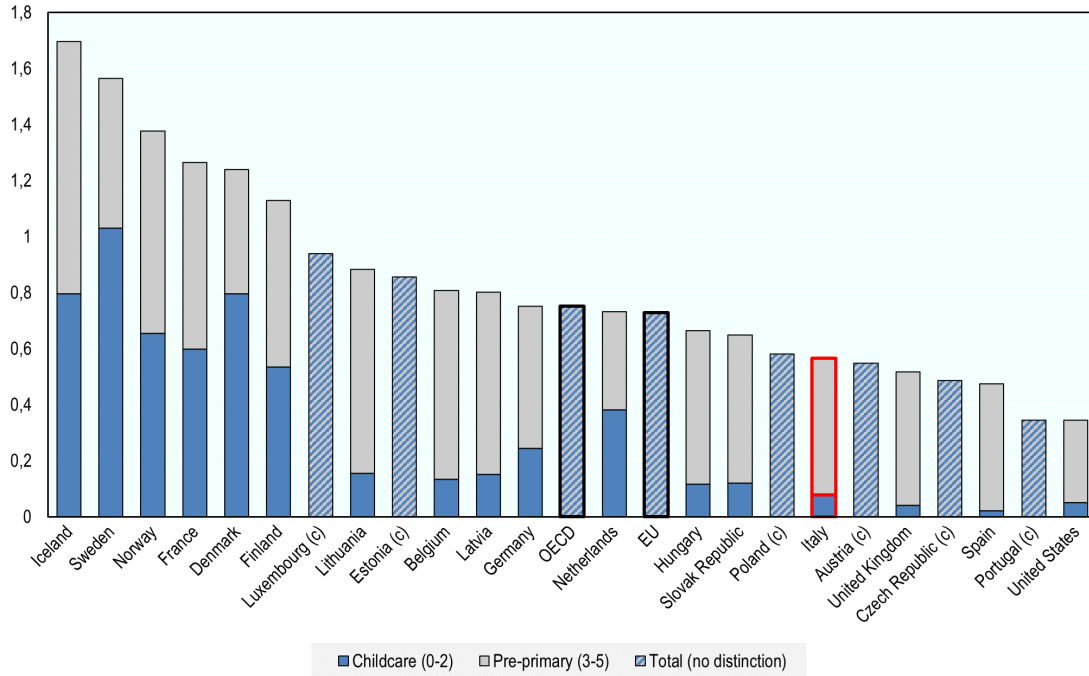

Data refers to 2021 or latest year available. Source: OECD (2023b)

Paternity leaves are periods of leave exclusively for fathers, aimed at increasing their involvement in caring activities, balancing the burden of care between parents, and supporting female participation in the labor market. In Italy, paternity leave is compulsory and consists of 10 days at 100% replacement rate, however, in 2021 the actual take up was limited to about a half of the potential beneficiaries, although the trend has been constantly increasing (INPS, 2022).

Finally, childcare policies are intended to reduce the gender gap by allowing mothers to work by providing them with access to affordable childcare and they consist of childcare provision and cash transfers (Carta et al., 2023; Profeta, 2020).

OECD data (Figure 7) shows that Italian public expenditure on childcare is below the OECD and EU average, and that there is a very uneven distribution of resources between childcare for children aged 0-2 compared to those aged 3-5.

Figure 7: Public expenditure on childcare and pre-primary education and total public expenditure on early childhood education and care, as a % of GDP
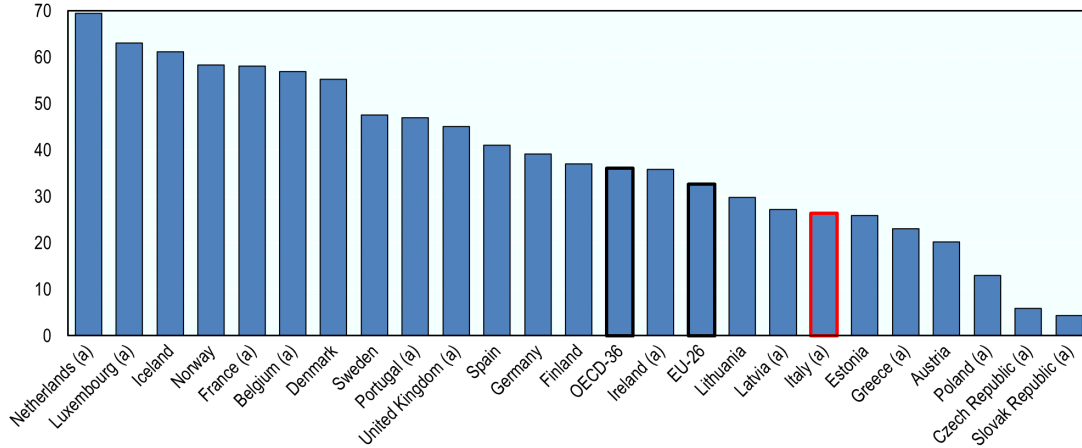

Data refers to 2019 or latest year available. Source: OECD (2023b)

Concerning availability and enrollment in childcare, OECD (2023b) data shows that Italy

has a lower enrolment rate than OECD and EU average for children aged 0-2 (Figure 8).

Figure 8: Percent of children enrolled in early childhood education and care services (ISCED 0 and other registered ECEC services), 0- to 2-year-olds

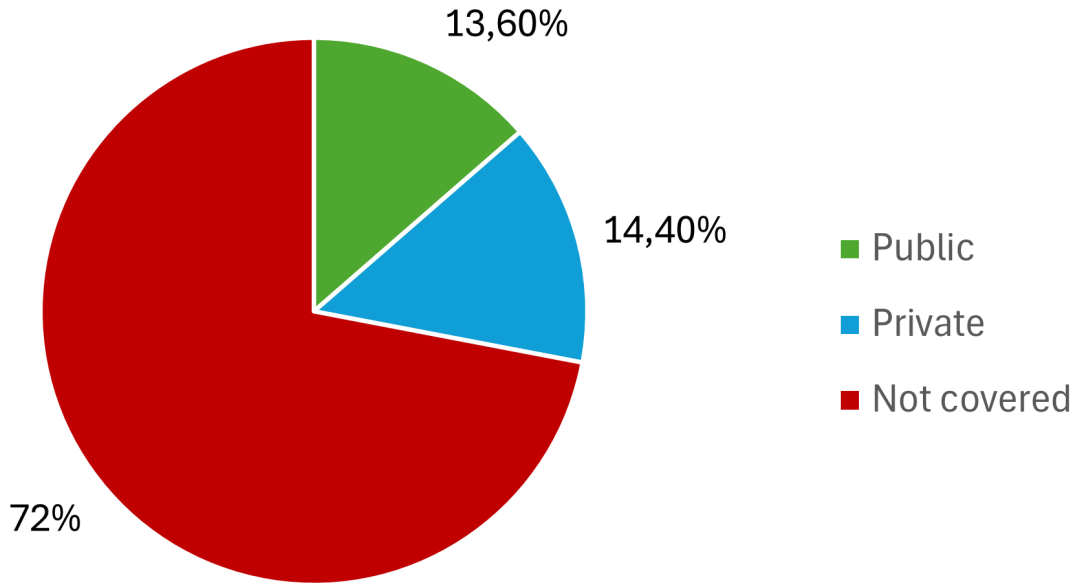Data refers to 2020 or latest year available. Source: OECD (2023b)

This is due to the limited availability of this type of services: ISTAT data for 2021/22 tells that the total provision is limited to 28% of the total number of children, almost equally divided between public and private, with large disparities between the North and the South of Italy (Figure 9). However, the total enrolment for this age group amounts to 33.4% as there are children, especially in Southern regions, who are enrolled in childcare services for the age 3-5 when they are still 2 years old, even when the structures are not adequately equipped. This is often due to economic reasons as these services have lower costs (ISTAT, 2023).

When looking at the data for children aged 3-5, the situation is completely different (Figure 10). 90.5% of children in this age group are enrolled in preschool, which is above the OECD and EU average. They are divided between public structures (72.4%) and private ones (27.6%) (Milan, 2022).

Despite various forms of family policies, wage differences between men and women still persist, getting worse when distinguishing between women with and without children.

In Italy, gender wage gaps are lower than in other European countries, however this is due to selection issues. Italian women active in the labor market tend to have higher levels

Figure 9: Coverage of childcare for the age 0-2 in Italy.

13,60%

14,40%

72%

- Public
- Private
- Not covered

Source: own elaboration of data from ISTAT (2023)

Figure 10: Percent of children enrolled in early childhood education and care (ISCED 2011 level 0) or primary education (ISCED 2011 level 1), 3- to 5-year-olds
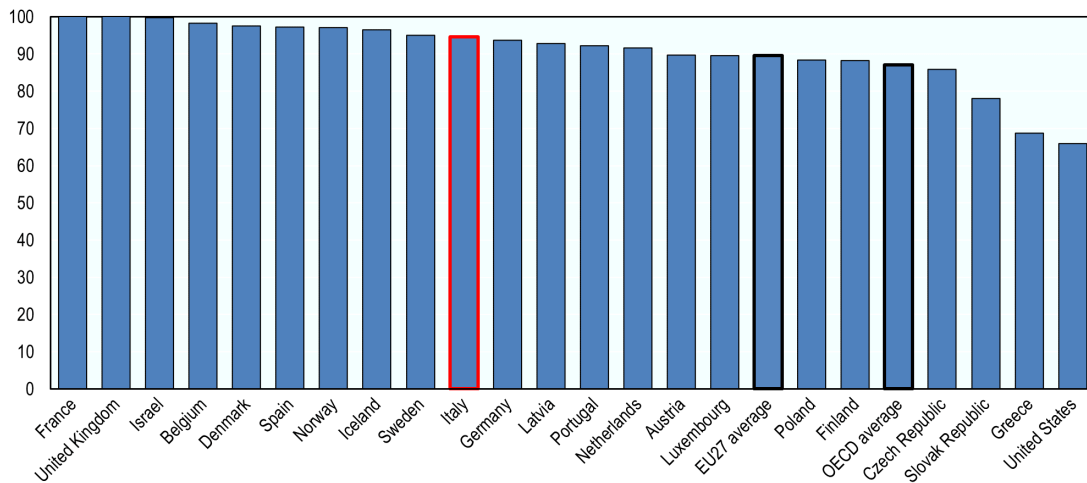
Data refers to 2020 or latest year available. Source: OECD (2023b)

of education and higher-paying jobs, therefore low wages are not observed. However, when accounting for this selection effect, the Italian gender wage gap is in line with other European countries (Carta, 2019; Olivetti and Petrongolo, 2008).

These challenges that women face, together with other factors such as the demographic change in the population of fertile women, have an impact also on birth rates: fertility in Italy is very low, limited to 1.20 children per woman in 2023 and the average age at birth is 32.35. (Minello, 2024)

2.2   Culture and Social Norms

There are multiple factors determining the participation of women, and mothers, in the labor market. Some are structural, as those mentioned above, while others are cultural and include stereotypes in society, family, and the workplace, traditional gender norms affecting the division of labor within the household and consequently the labor supply of women and mothers, education choices, as well as discrimination in the workplace, and the presence of role models.

The European Value Study, a large-scale, cross-national, and longitudinal survey research program on basic human value, investigates this by asking questions that elicit opinions on working women and mothers, as well as gender differences in management skills and so on (the data used here refers to the wave of 2017; data for Italy was collected in 2018).

An interesting question elicits the level of agreement on the following statement:

When jobs are scarce, men have more right to a job than women
(Figure 11)

While in other European countries like France and Sweden, the majority of respondents disagree with the statement, with evident gender gaps, and almost nobody agrees, in Italy the situation is very different. Even though the majority disagrees, there is a large part of respondents who agrees or is neutral.

Two more questions investigate beliefs on what women should or want to do with respect to their decision between working or not. These questions ask to what extent the respondents agree with the following statements:

Figure 11: Agreement with the statement "When jobs are scarce, men have more right to a job than women" by gender and country.
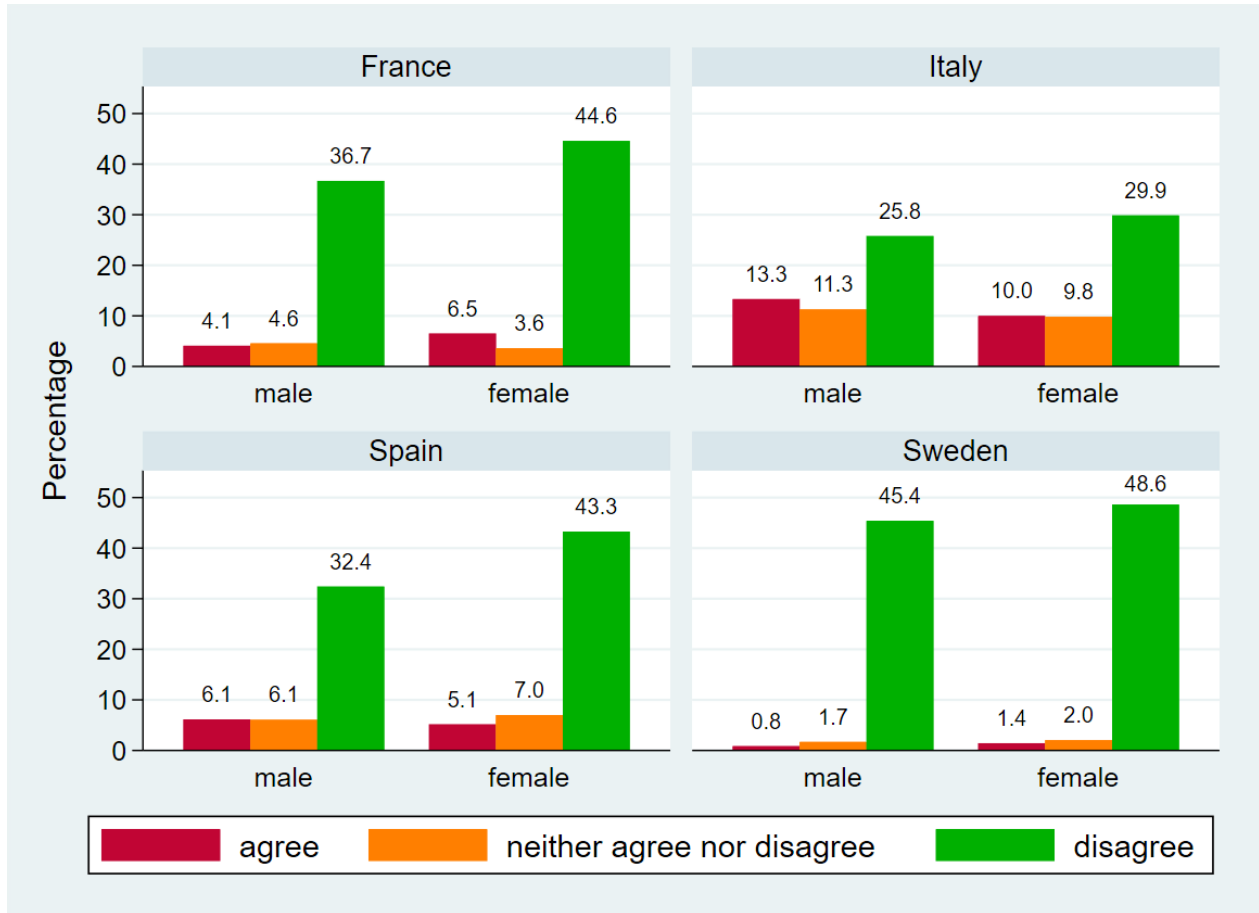
Source: own elaboration of EVS data

A man's job is to earn money; a woman's job is to look after the home and family

(Figure 1 Appendix A)

A job is alright but what most women really want is a home and children

(Figure 2 Appendix A)

Regarding the first statement, most Italian respondents disagree, but a relevant share agrees with it, without any relevant gender difference. In the other countries considered, instead, the vast majority of respondents, especially women, disagrees.

Concerning the second statement, most Italian men agree while women are equally divided between agreement and disagreement. In the other countries, even though a part of

respondents agree, most people disagree. The answers to these questions show how stereotypes and gender roles are still very prevalent in our society and influence our perception of women's decisions on their life and career.

Turning to mothers, one of the most interesting questions asks the level of agreement on the following statement:

When a mother works for pay, the children suffer

(Figure 12)

Figure 12: Agreement with the statement "When a mother works for pay, the children suffer " by gender and country.
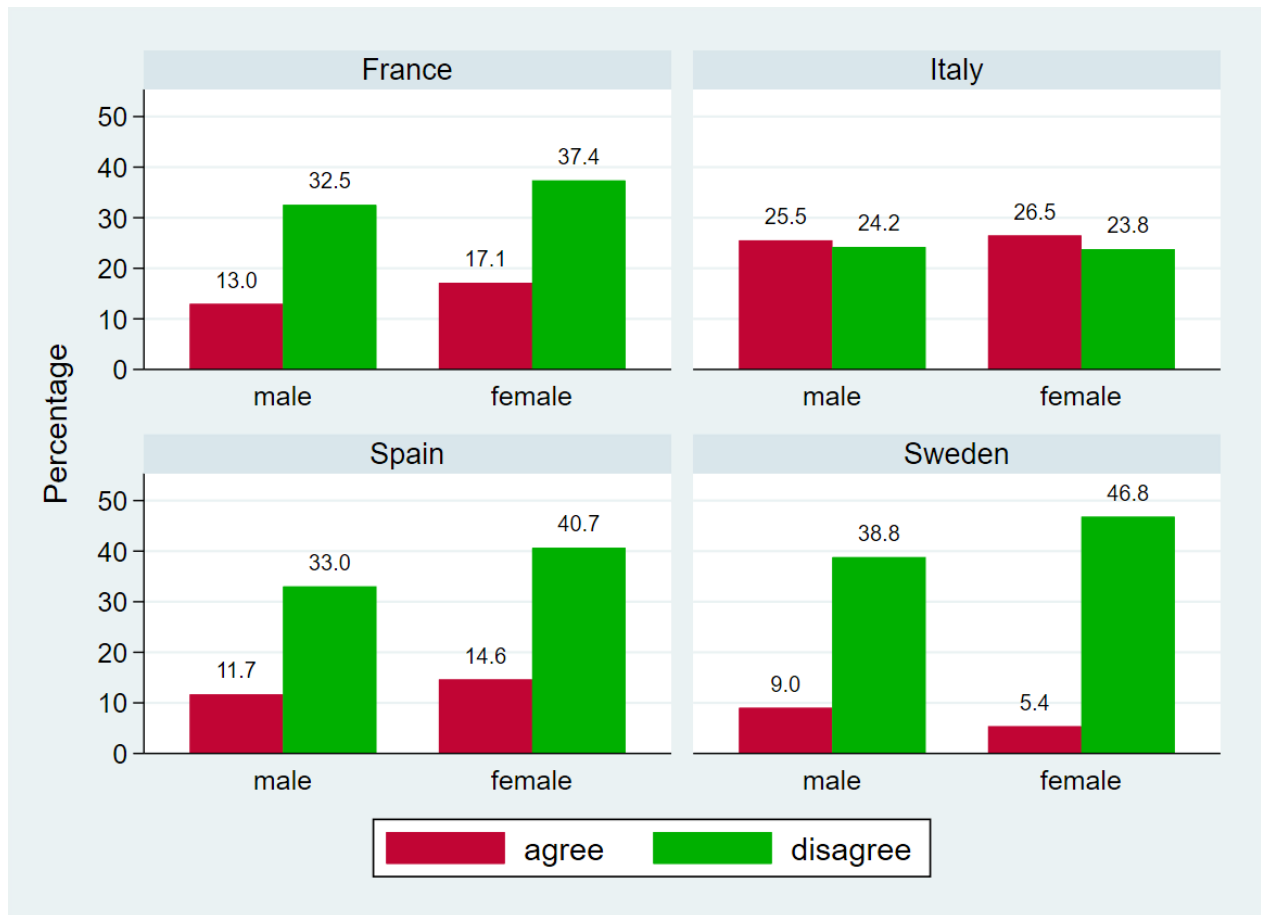
Source: own elaboration of EVS data

The answers show that, while in other European countries like France, Spain, and Sweden, most people disagree with the statement, with relevant gender differences, in Italy respon-

dents are equally divided between agreement and disagreement, suggesting that traditional values and beliefs on gender roles are still strongly rooted in Italian society.

A similar question refers to the following statement:

All in all, family life suffers when the woman has a full-time job
(Figure 3 Appendix A)

While for the other European countries results are in line with those of the previous questions, in Italy people agree even more than they do with respect to the question specific to children.

More reassuring answer, instead, were given to questions relative to the following statements:

A university education is more important for a boy than for a girl
(Figure 4 Appendix A)

On the whole, men make better business executives than women do
(Figure 5 Appendix)

There is a widespread disagreement on both of them, although it is stronger in other countries, suggesting that attitudes towards gender roles are evolving as more and more women obtain a university degree and access top positions in the corporate world.

Overall, we can see that in Italy, traditional beliefs and gender roles are more rooted than in other European countries such as France, Spain, and Sweden, usually with little or no difference between men and women.

2.3 Political Context

As we are going to analyze articles published in the span of two years, it is worth taking a look at the political changes that there have been during this time.

Figure 13 shows the timeline of the main events that led to the change in the Government and Parliament. The previous Italian government, led by Mario Draghi, from February 2021 to October 2022, was a broad coalition including parties from across the political spectrum, such as the Five Star Movement, Democratic Party, and League. In July 2022, the prime minister resigned and new elections were announced. These elections resulted in a victory for the right-wing coalition led by Giorgia Meloni's party, which secured a majority in both houses of parliament. This outcome signaled a shift towards conservative and nationalist policies, reflecting a broader European trend.

Figure 13: Timeline of the main political events of 2022-23

2.4 Motivation and Expectations

Social norms and gender roles spread through various channels. Together with interactions within family, school, and work environments, well-established traditions and culture, nowadays, with the increasing spreading of new technologies and social media, the circulation of information, news, and opinions, gender norms and stereotypes can be transmitted through not only the classical medium of television, but also through social networks such as Twitter and Instagram, blogs, and newspapers. The rise of these ways of communication and the speed with which news spread make it interesting to investigate how people talk about these topics.

In particular, an analysis of newspaper articles on these topics is interesting in that there could be changes in how and how much these topics are discussed in different newspapers, in particular following the establishment of a new government with a different political orientation.

In principle, we expect that articles talking about working women and working mothers are different in the topics covered, with some overlappings. Concerning women, the most prevalent topics could be related to the discussion of challenges present in the labor market in terms of gender wage gap, the phenomenon of the glass ceiling and the low presence of women at top positions. Moreover, a topic we expect to be widely discussed has to do with maternity and the difficulties of women in juggling family and work duties at the same time, as well as the discriminations they face when looking for a job or in the workplace due to possibility of them having children and being absent from work during maternity leave first, and later due to the need of more flexible working arrangements.

We expect these topics to arise even more prominently in articles regarding working mothers, together with others related to the options they have in terms of maternal and parental leaves. Alongside this, we expect that other forms of government interventions, such as childcare subsidies or tax breaks, are discussed in the news. Finally, we expect that the need for more generous paternity leave, also in relation to advancements made in other countries in this regard, might gain more space in this kind of news.

Moreover, changes in the topics discussed in the news can also be due to the establishment of a government with different political views. In particular, the previous government, led by Prime Minister Mario Draghi, was composed of ministers who were independent or affiliated to parties with various political orientations, while the current government, led by Prime Minister Giorgia Meloni, is composed of ministers who are mostly members of right-wing parties. These differences in government composition, together with the different topics of discussion that might arise both during the electoral campaign and during the policy-making process, might be reflected in the way newspapers talk about certain issues.

In particular, we expect that the change of government may have driven a stronger em-

phasis on certain topics, such as those regarding various forms of leaves for mothers and fathers, and the need for a government interventions sustaining parents, especially mothers, in taking care of children while allowing them to retain their job and having career prospects.

As left-wing parties are less present in the new Parliament and Government, newspapers holding more left-wing views might exploit this to be more critical of the actions, or lack thereof, taken by governing bodies in terms of policies in support of maternity. They might as well take this as an opportunity to shed more light on the current situation and needs of mothers in this respect.

At the same time, right-wing newspapers may be more supportive of the actions of the government and frame them in a way that suggests that what they are doing is effective in supporting maternity and the needs of mothers. Moreover, they could exploit the fact that for the first time a woman, and a mother, is the Prime Minister, and propose her as an example of how mothers can pursue a career and have children at the same time. This, instead, would be described as an exception by more moderate and left-wing newspapers, in that it does not reflect or represent the reality of the majority of women and mothers who do not have access to the same financial and structural support as someone who holds a top position that can be that of a Prime Minister, a manager of a firm, and so on. Moreover, across all political orientations, the presence of a female Prime Minister could foster the debate on the presence of women at top positions and the discrimination women face in the labor market, which would be discussed from different angles depending on the views of the single newspaper.

Overall, we expect that newspapers discuss similar topics from different angles or frame them in different ways in order to shed light on current issues, and criticize or support government actions depending on their political views.

3 Data and Methods

3.1 Mediacloud Data

In order to retrieve newspaper data on this subject, we used Media Cloud (mediacloud.org), an open-source platform that collects and archives a huge text dataset of newspaper articles published online. It does so by detecting RSS feeds from media sources.

We ran two distinct queries to obtain two datasets of articles containing keywords for *working women* or *working mothers*:

- "donne che lavorano" OR "donna che lavora" - from 01.01.2022 to 30.09.2023. ("women who work" and "woman who works" respectively) (579 articles).

- "madre che lavora" OR "madri che lavorano" OR "madre lavoratrice" OR "madri lavoratrici" OR "mamma che lavora" OR "mamme che lavorano" OR "mamma lavoratrice" OR "mamme lavoratrici" - from 01.01.2022 to 30.11.2023 ("mother who works", "mothers who work", "working mother", "working mothers", "mum who works", "mums who work", "working mum", and "working mums" respectively) (562 articles)

The difference in the end date is due to a problem that occurred in the download that made it necessary to use a dataset for "working women" that had been previously downloaded and that does not include the keywords "donna lavoratrice" and "donne lavoratrici" ("working woman" and "working women" respectively). For what concerns data between 01.10.2023 and 30.11.2023, we added it manually by conducting the same queries on Google News for each of the newspapers included in the analysis (19 articles).

Another problem that arised in the search concerns data between 01.01.2022 and 05.05.2022: due to the failure of the Postgres database used by Media Cloud, data for this period was unavailable. This issue was solved through searches on Google News, similarly to the one regarding the missing articles for the "women" dataset (23 articles for the "women" dataset and 22 for the "mothers" dataset).

Moreover, given the absence of the first Italian newspaper by coverage, *Il Corriere della*

Sera, we added those articles manually through Google News searches (72 articles for the "women" dataset and 60 for the "mothers" dataset). This absence was due to the fact that Media Cloud cannot retrieve articles that are subject to a subscription to the newspaper.

In order to have a balanced dataset, in terms of political orientations, we have selected a variety of sources for our analysis. These include: two press agencies (*Ansa* and *Adnkronos*) which in principle should be neutral, two right-wing newspapers (*Libero* and *Il Giornale*), two left-wing ones (*La Repubblica* and *Il Fatto Quotidiano*), and two moderate ones (*Il Sole 24 Ore* and *Il Corriere della Sera*). These sources were chosen according to the highest number of articles matching the queries.

From these datasets, we removed all the articles that were published in the local issues of the newspapers, in order to have data that concerned the whole country, as well as articles reporting international news. We excluded from our analysis also those articles that were off-topic, despite matching the queries, and those that only mentioned the topic in at most one or two sentences in the whole article, therefore making it irrelevant to the analysis.

Some articles were missing from the newspapers' websites and were therefore excluded.

Finally, 3 articles were excluded since the keyword was present in the webpage but not in the article itself. The final sample consists of 208 articles: 91 for the "women" dataset and 117 for the "mothers" dataset.

For each article, we downloaded the full text, maintaining the division in paragraphs and we indicated whether or not our topic of interest is the main topic of the article. Alongside the full text, metadata such as the date of publication and the author is also available. Then, we removed stop-words since they do not convey relevant information. They are words that are used to construct sentences and have an auxiliary function, such as conjunctions and prepositions. Moreover, we removed all two-word associations that contained those stopwords. The stop-words we removed are:

"poi", "infatti", "anche", "così", "più", "meno", "non", "sempre", "cioè", "via", "vie", "po", "molto", "infine", "comunque", "ciò", "già", "però", "quindi", "dove", "circa", "ancora", "ancor", "è", "abbiamo", "quasi", "oltre", "ora".

A summary of the number of articles per source is displayed in table 1.

	"women"	"mothers"
Corriere della Sera	18	19
Il Sole 24 Ore	13	16
Il Giornale	6	16
Libero	13	16
La Repubblica	10	13
Il Fatto Quotidiano	5	11
AdnKronos	12	19
Ansa	14	7
	91	117

Table 1: Number of articles per source

3.2 Topic Models

Topic modeling is a type of text-mining technique that allows to infer the hidden topic structure of an unstructured collection of documents, quickly and efficiently.

There are two approaches to text analysis, specifically Natural Language Processing (NLP) and statistical-based algorithms. While NLP interprets text by analyzing its grammatical structure, this aspect is not relevant in statistical-based algorithms, that use the "bag-of-words" approach, where the order in which words are used within the document is disregarded, yet retaining information on the co-occurrence of words (Roberts et al., 2016). This type of approach conveys text into a document-term matrix where each row represents a document and each column represents a word, and the entries of the matrix are the number of occurrences of every word in the document.

The most common and simplest type of topic model is the Latent Dirichlet Allocation (LDA), developed by Blei et al. (2003). It is a generative process model where documents are represented as a random mixture over latent topics and each topic is characterized by a distribution over words. This model reflects the intuition that all the documents in the collection share the same set of topics, but each document exhibits those topics in different proportions (Blei, 2012). The goal of topic modeling is to discover the topics from a large collection of documents, while the topic structure is hidden.

However, LDA presents various limitations. First, words used within a topic cannot be influenced by covariates, therefore this model does not provide richer insights on how metadata affects this aspect. The same topic can, in fact, be represented differently in different contexts: for example, newspaper articles can talk about the same topic but use different words.

Then, LDA does not allow correlation between topics, limiting the understanding of how they relate across different contexts. In reality, different topics often appear together, for example the topics 'elections' and 'economy' may often appear together.

3.3 The Structural Topic Model

For these reasons, Roberts et al. (2013) developed the Structural Topic Model (STM), as an extension of LDA, with the aim of overcoming its limitations. The three critical differences between the two models are the following: first, the topics can be correlated; second, each document has its own prior distribution over topics as a function of covariates, rather than sharing a global mean, and it is therefore "structured"; third, within a topic, covariates can determine the distribution of words. Therefore, the model is enriched by the possibility of allowing covariates to influence both topic content and topic prevalence, rather than assuming that they are constant across all documents (Roberts et al., 2014).

The Structural Topic Model is composed of the following elements. First, there is a corpus of documents, indexed by $d \in \{1, \ldots, D\}$. Each document is composed of words, whose position is indexed by $n \in \{1, \ldots, N_d\}$, therefore, for each word $w_{d,n}$, its position and document is known. Every word is taken from a vocabulary indexed by $V_v \in \{V_1, \ldots, V_V\}$.

Moreover, the model also assumes that a number of topics K, indexed $k \in \{1, \ldots, K\}$ has been chosen by the analyst. Additionally, further observed information is given by two matrices, one for topic prevalence (denoted by $\mathbf{X}$) and one for topic content (denoted by $\mathbf{Y}$), where each row defines a vector of covariates for a given document. These covariates are included when the analyst believes that they influence how much the document discusses a particular topic (prevalence) and which words are used (content), with possible overlapping (Roberts et al., 2016).

In STM, topic proportion is defined by θ_d with $d \in \{1, \ldots, D\}$, a vector that says how much of the document d is made up of a given topic.

Topic prevalence, instead, is defined by β_k, a vector where each column value is the probability of a word being generated by that topic.

Given the elements described above, a data generative process is defined for each document, and then the data sample is used to estimate the parameters of the model. The distributions for each element are the following:

$$\boldsymbol{\gamma}_k \sim \text{Normal}_p(0, \sigma_k^2 I_p), \quad \text{for } k = 1, \ldots, K-1, \tag{1}$$

$$\boldsymbol{\theta}_d \sim \text{LogisticNormal}_{K-1}(\boldsymbol{\Gamma}' \mathbf{x}_d', \boldsymbol{\Sigma}), \tag{2}$$

$$\mathbf{z}_{d,n} \sim \text{Multinomial}_K(\boldsymbol{\theta}_d), \quad \text{for } n = 1, \ldots, N_d, \tag{3}$$

$$\mathbf{w}_{d,n} \sim \text{Multinomial}_V(\mathbf{B}\mathbf{z}_{d,n}), \quad \text{for } n = 1, \ldots, N_d, \tag{4}$$

$$\beta_{d,k,v} = \frac{\exp\left(m_v + \kappa_{k,v}^{(t)} + \kappa_{y_d,v}^{(c)} + \kappa_{y_d,k,v}^{(i)}\right)}{\sum_\nu \exp\left(m_\nu + \kappa_{k,\nu}^{(t)} + \kappa_{y_d,\nu}^{(c)} + \kappa_{y_d,k,\nu}^{(i)}\right)}, \quad \text{for } \nu = 1, \ldots, V \text{ and } k = 1, \ldots, K, \tag{5}$$

where $[\gamma_1, |, \ldots, |, \gamma_{K-1}]$ is a $P \times (K-1)$ a matrix of coefficients for the topic prevalence model and $\{\kappa^t ., \kappa^c ., \kappa^i .\}$ is a collection of coefficients for the topical content model.

A data-generating process for document d is as follows: given the topic proportion vector θ_d or each word within document d, a topic is sampled from a multinomial distribution $\mathbf{z}_{d,n} \sim \text{Multinomial}_K(\boldsymbol{\theta}_d),$ and conditional on such a topic, a word is chosen from the appropriate distribution over terms $\mathbf{B}\mathbf{z}_{d,n}$ also denoted $\boldsymbol{\beta}_{zd,n}$ for simplicity. Figure 14 provides a representation of this process.

In our model, we allowed the following covariates to influence topic prevalence: *date*, *group* (referring to either 'women' or 'mothers') and the *political orientation* of newspapers that were categorized into left, right, center, or agency. Topic content instead was influenced by the *group* covariate.

Figure 14: Description of the STM
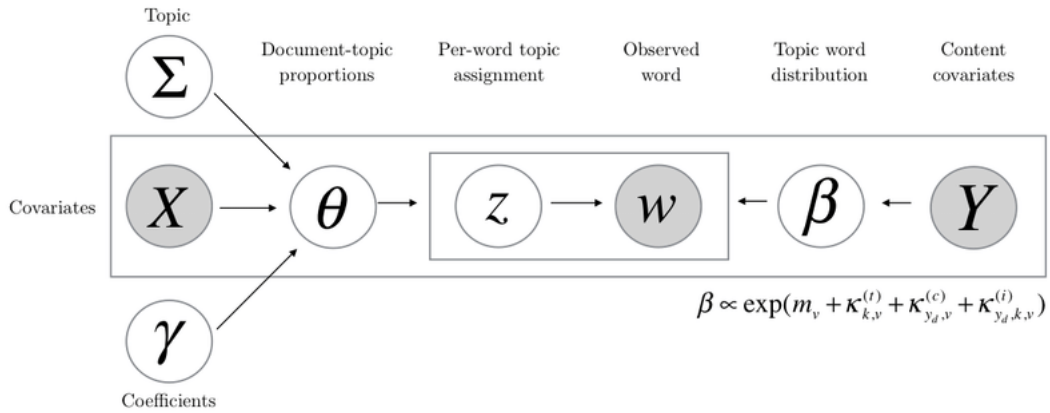
The number of topics K=10 was chosen after running the model several times with different values of K, excluding values yielding duplicate or incoherent topics. The other parameters of the STM model are the following: *max.em.its = 100; emtol = 1e-05; init.type = "Spectral"*.

4   Results

A first aspect to consider when analyzing newspaper articles on topics relative to work and to differences between genders, and between people with or without children, is the large difference in the number of articles by gender. While our analysis for working women and mothers could rely on around 200 articles over the span of two years, for the same time frame, there are around 20 articles regarding working fathers and barely any article on working men, suggesting that the public discourse almost completely revolves around the labor choices and challenges faced by women and mothers, while for men this is not a topic of discussion. This in part reflects the actual gender disparity of the labor market but at the same time perpetuates gender norms and stereotypes that see the man as the breadwinner and the woman as the caregiver in the family.

This overrepresentation of women in the context of work and extreme underrepresentation of men, especially when considering mothers and fathers, suggests an assumption that the burden of childrearing should fall on mothers for the most part, while fathers should focus on work and career achievements, rather than involving in family responsibilities.

Another aspect worth noting is that, at a first glance, articles regarding working women often talk about their family responsibilities and their role as mothers, thus suggesting that even when the discourse is inherent to their professional lives, there is a connection to their roles within the family. This framing reinforces the stereotype that the primary role of women in society, and their own identity, are shaped around their roles as caregivers, regardless of their career accomplishments. Rather, the latter are sometimes seen as achievements at the expense of the time they could and should have spent at home with family.

The word clouds in Figures 15 and 16 show that the most frequent words occurring in articles regarding working women (Figure 15) are for example "opportunità", "pari", "parità", "presenza", "aziende", "divario", "presidente", "figli", "uomini", and "pregiudizi". This suggests that when newspapers talk about working women, they cover topics such as equal opportunities, gender equality, and prejudices, but also their presence in the corporate world, and finally their role as mothers.

In the articles regarding working mothers (Figure 16), instead, the most frequent words

include "figli", "congedo", "parentale", "presidente", "premier", "governo", "legge", "fiscale", "asili", "nido" suggesting that some of the most relevant topics of discussion are that of parental leave and the role of government in supporting working mothers. Moreover, words referring to the president and prime minister suggest that articles also talk about women and mothers in top positions.

The most frequent word in both groups is "solo", meaning "only" or "just". This word is certainly more informative when paired with others, but at first glance it suggests that the articles might mention that only a certain percentage of women or mothers work, or that certain types of subsidies are only available for certain categories of women and so on.

The following two sentences extracted from the dataset and serve as an example of the usage of this word:

"Elisabetta Franchi: "Io da imprenditore preferisco gli uomini nei ruoli chiave. Le donne? Solo se sono 'anta'"" [1]

"La situazione peggiore si riscontra nel Mezzogiorno, dove lavora solo il 35.3% delle donne con figli piccoli, quasi la metà rispetto al Centro (62.7%) e al Nord (64.3%)." [2]

4.1 Description and Analysis of the Topics

The number of topics we estimated is 10 and a summary of topic prevalence is shown in Figure 17. Every topic is shown with the 8 most common words.

For each of the 10 topics, Figures 6, 7, 8, 9 in Appendix B show the most common words and associations, distinguishing between women and mothers.

4.1.1 Topic 1

The most frequent words and two-word associations in topic 1, for articles about working women, are "colmare divario", "promuovere diversità", "inclusione", "carriera", "opportunità", "imprenditoria femminile", and "amministratrice delegata". These words suggest that

---

[1] "Elisabetta Franchi: "As an entrepreneur I prefer men in key roles. Women? Only above 40 years old""

[2] "The worst situation is found in the South, where only 35.3% of women with young children are employed, almost half compared to the Center (62.7%) and the North (64.3%)."
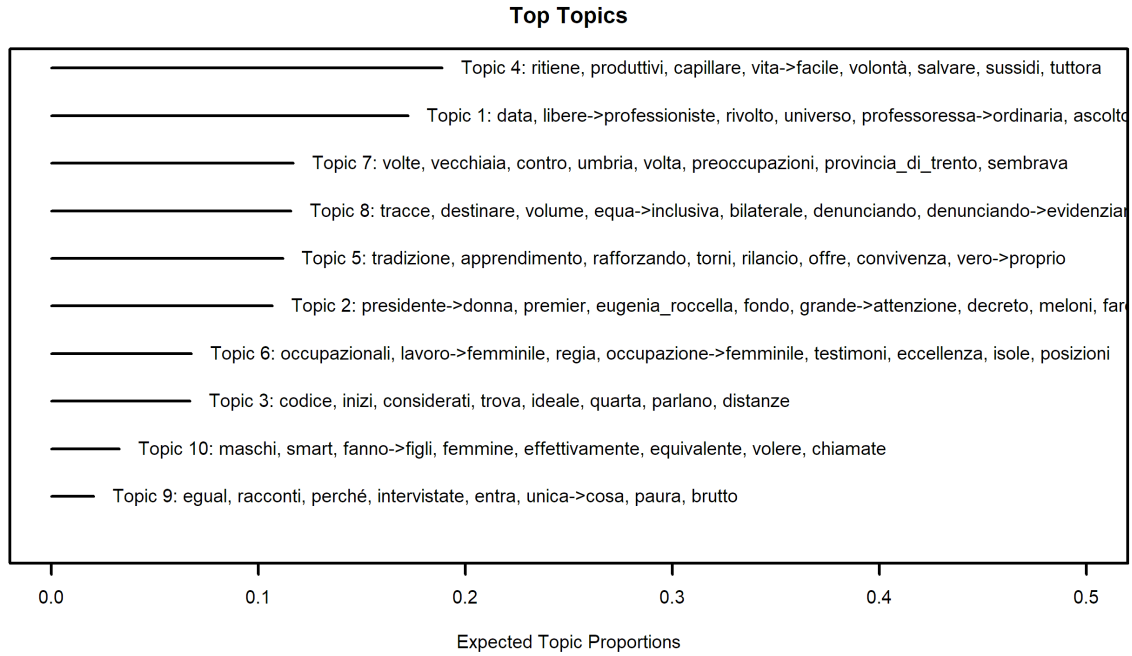
Figure 15: Most frequent words in the articles on working women

Figure 16: Most frequent words in the articles on working mothers

Figure 17: Topic Proportion

Top Topics

Topic 4: ritiene, produttivi, capillare, vita->facile, volontà, salvare, sussidi, tuttora
Topic 1: data, libere->professioniste, rivolto, universo, professoressa->ordinaria, ascolto
Topic 7: volte, vecchiaia, contro, umbria, volta, preoccupazioni, provincia_di_trento, sembrava
Topic 8: tracce, destinare, volume, equa->inclusiva, bilaterale, denunciando, denunciando->evidenzia
Topic 5: tradizione, apprendimento, rafforzando, torni, rilancio, offre, convivenza, vero->proprio
Topic 2: presidente->donna, premier, eugenia_roccella, fondo, grande->attenzione, decreto, meloni, far
Topic 6: occupazionali, lavoro->femminile, regia, occupazione->femminile, testimoni, eccellenza, isole, posizioni
Topic 3: codice, inizi, considerati, trova, ideale, quarta, parlano, distanze
Topic 10: maschi, smart, fanno->figli, femmine, effettivamente, equivalente, volere, chiamate
Topic 9: egual, racconti, perché, intervistate, entra, unica->cosa, paura, brutto

Expected Topic Proportions

the first topic regards the promotion of diversity and the inclusion of women within various hierarchies in the workplace and the need to close the gender gap and grant women more opportunities in this environment.

Concerning working mothers, the most frequent words for this topic are "congedo parentale", "lavoratrici autonome", "lavoratrici domestiche", "libere professioniste" and "padre lavoratore" which suggest that the topic revolves around the issue of parental leave and who can benefit from it, distinguishing between different types of female workers and working fathers.

Moreover it mentions words such as "opzione donna", "anzianità", and "età anagrafica" which suggest that this topic also regards the retirement possibilities for women, including "Opzione Donna", which is a type of anticipated retirement, available to women who meet specific requisites. In particular, its increased discussion is due to the fact that the new government changed the requirements, by increasing the minimum age to access this pension option, and allowing mothers to retire from one to two years earlier depending on the number of children.

We can take a look at the visual comparison of the words used in this topic between articles on women and mothers (Figure 18).

Figure 18: Graphical representation of topic perspectives
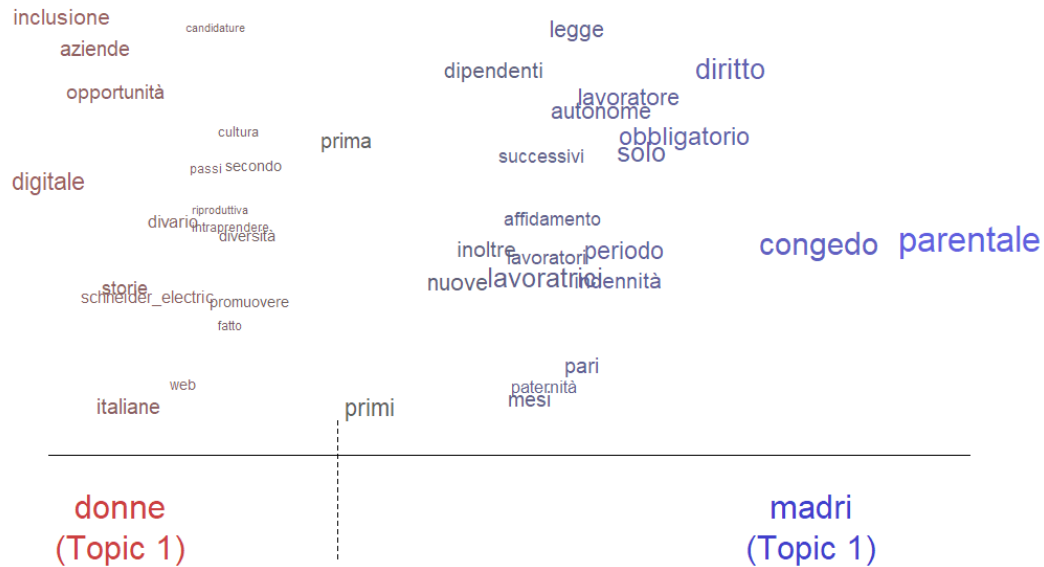
This type of plot shows the most frequent words for the topic and their difference in the probability of occurrence. The color of words refers to the group in which they are discussed more frequently (red for women, blue for mothers), while their size represents the frequency. We can see that some words are specific to articles about either women or mothers, while others are shared, and are shown closer to the middle line.

We can see that, for topic 1, there is a sharp division of the aspects that are treated in the articles. Those on women are mostly about the promotion of women in the corporate world in order to achieve more equality and diversity, while articles on mothers are mostly about parental leave, with a focus on who can and has to take it.

Moreover, the topic is discussed in different proportions over the two-year period, as we

can see in Figure 19.

Figure 19: Topic proportion over time, by group
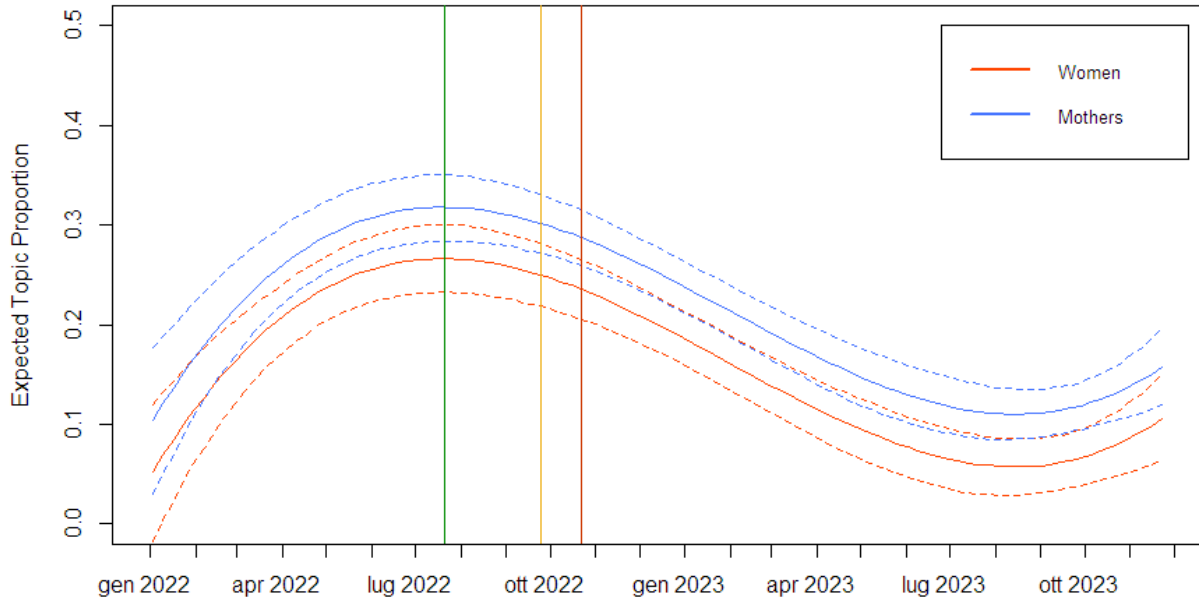
Note: the three vertical lines represent the resignation of the former Prime Minister, the elections, and the establishment of the new Government and Parliament, respectively.

There is no relevant difference between the two subgroups, but the expected topic proportion increases in the first half of 2022, peaking around the period of transition between the two governments, to decrease later. Finally, it has an increase towards the end of 2023.

Finally, it is interesting to see how newspapers of different political orientations gave different space to this topic (Figure 20).

Right-wing (in violet) and moderate (in green) newspapers talked about it much more in 2022 than left-wing ones (in pink) and press agencies (grey), suggesting that it is a topic that they deemed more relevant and important to discuss.

4.1.2 Topic 2

Topic 2, for women, contains words such as "rivoluzione rosa" and "intelligenza artificiale", "professioni tecniche", "figure apicali", and then "ospedaliero assistenziale, and "medico", which together suggest that it focuses on the participation of women in technical sectors, hos-

Figure 20: Topic proportion over time, by newspapers' political orientation
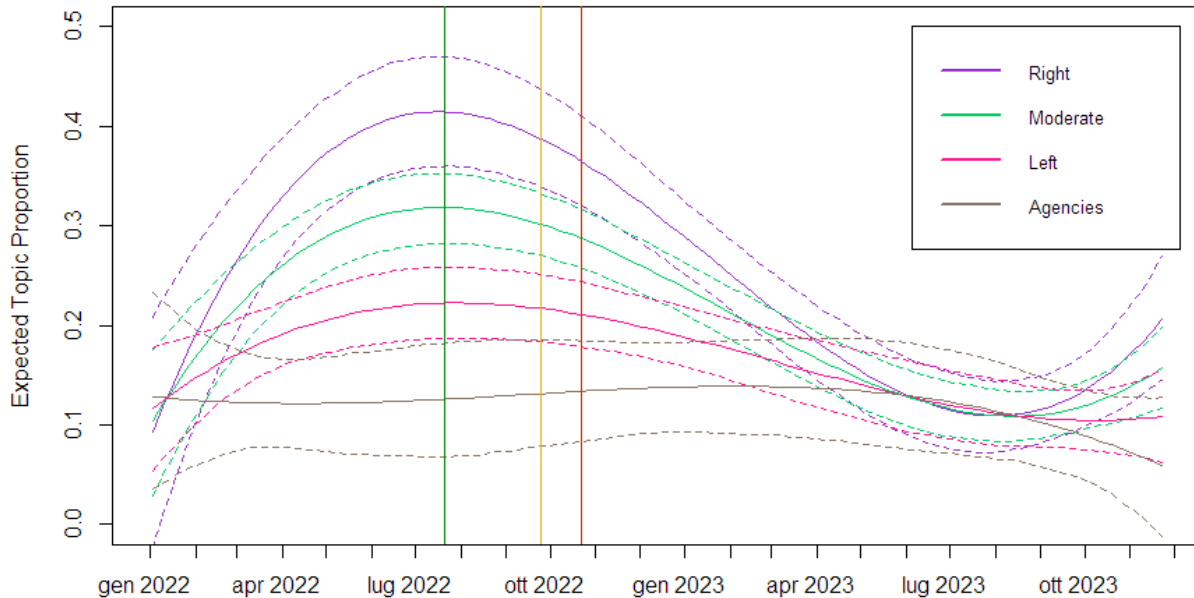
Note: the three vertical lines represent the resignation of the former Prime Minister, the elections, and the establishment of the new Government and Parliament, respectively.

pitals, also in top positions. Moreover words such as "premier", "giorgia meloni", "madre", "donna", "figlia", "figli", suggest that this topic is also about the role of women as mothers, and specifically talks about Prime Minister Giorgia Meloni as a woman and a mother who also pursued a demanding career.

Concerning mothers, instead, it includes words such as "premier" and "Giorgia Meloni", similarly to those regarding women, and then "salario minimo", "asilo nido", "asilo gratis", "manovra", "contributo", "natalità", and "congedo paritario", all suggesting that this topic regards the budget law especially for what concerns parental leave and state support to mothers, and the interventions in support of natality.

Following topic 1, we can see that topic 2 talks about state aid to mothers, in terms of childcare and other forms of help included in the budget law (Figure 21). This is indeed reflected in an increase in the expected topic proportion towards the end of 2023, around the time of discussion of the budget law (Figure 22). Moreover, a word that is common to both groups, women and mothers, is "Giorgia Meloni", and the word "premier" is frequently used

in relation to mothers. This suggests that the figure of the Italian Prime Minister is often related to the discussion on motherhood, but it also explains why the topic was discussed more during 2023 rather than the early months of 2022.

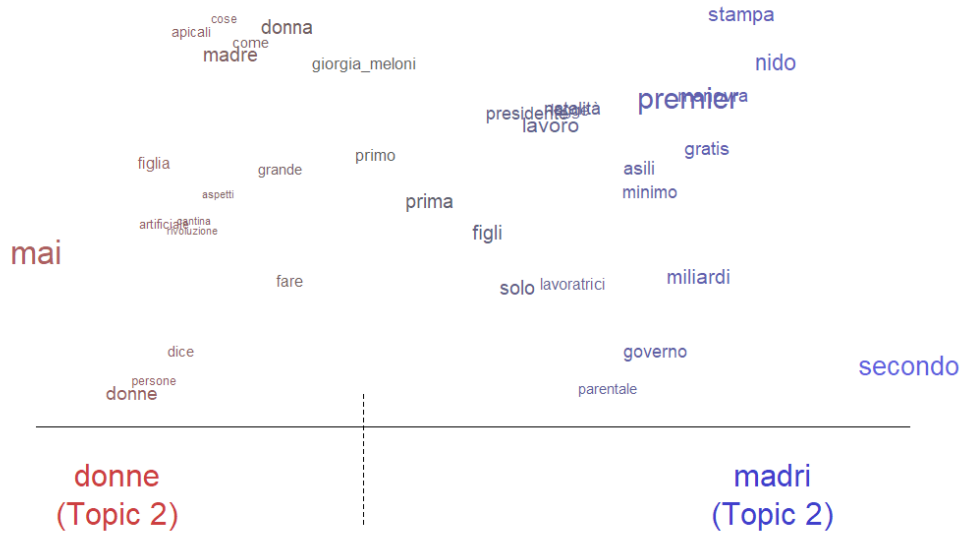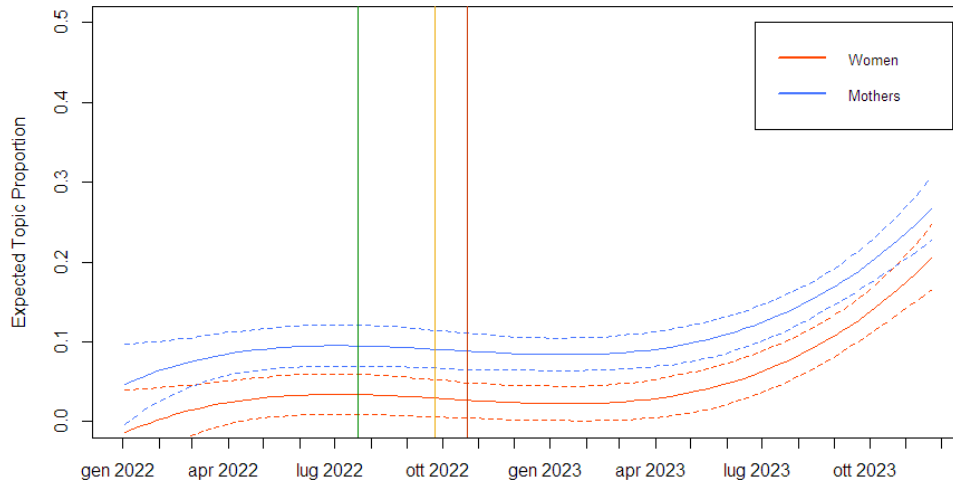Figure 21: Graphical representation of topic perspectives

Figure 22: Topic proportion over time, by group

Note: the three vertical lines represent the resignation of the former Prime Minister, the elections, and the establishment of the new Government and Parliament, respectively.

4.1.3 Topic 3

Topic 3, for women, contains words "fare figli", "super donne", "orari flessibili", "pari opportunità", which suggest that the topic revolves around the role of women as mothers and the possibility of having flexible working hours.

It is worth noting that the second most frequent association of this topic, "super women", recalls the ideal of *super women* who are expected to excel at multitasking despite bearing multiple responsibilities both at home and at work, while in fact they would need more support in carrying out caregiving duties for family members and in raising children, to prevent them from having to leave their jobs. This expression, however comes with significant social and familial pressure, leading to feelings of overwhelming and burnout.

Concerning mothers, instead, it includes words such as "redditi bassi", "aiutare donne", and "lasciare lavoro", suggesting that it concerns the need of low-income women for financial support, and the struggles that come with leaving their jobs.

4.1.4 Topic 4

Topic 4, for women, includes words such as "trovare lavoro", "congedi parentali", "pari opportunità", "prendersi cura", "baby sitter", "carico sbilanciato", "mantenere famiglia", "cancellare individualità", "donne", "uomini", "figli", "ruolo". These words suggest that the topic is about family dynamics and gender roles. In particular, it mentions issues like that of balancing responsibilities within the family, talking about parental leaves and babysitters, as well as financial support of the family, which is probably referred to as a male role.

Concerning mothers, instead, it includes words such as "eliminare disparità", "lavorativo familiare", "agevolazioni fiscali", "maternità ostacolo", "parità", suggesting that the topic revolves around the need to support mothers in juggling work and family responsibilities, also through tax breaks, in order to achieve equality.

We can look at Figure 23 to see how there are constantly more articles regarding working women than mothers, even though the topic is about family dynamics and gender roles, and maternity, which in principle should be related more to mothers.

43

Figure 23: Topic proportion over time, by group
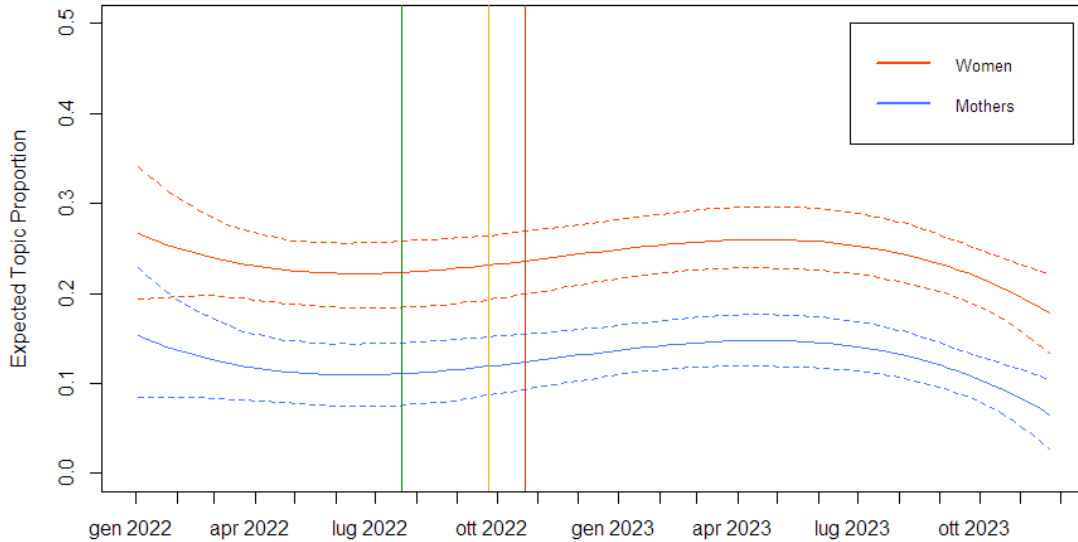
Note: the three colored lines represent the resignation of the former Prime Minister, the elections, and the establishment of the new Government and Parliament, respectively.

4.1.5 Topic 5

Topic 5, for women, includes words such as "divario occupazionale, "desiderio riproduttivo", "promuovere inserimento", "supporterà donne", "tech", "aulab", "coding factory", suggesting that the topic is about initiatives to encourage women to enter traditionally male-dominated sectors like technological ones. Among the words mentioned there is Aulab, an Italian tech education platform that provides specialized training in digital and technological fields. Recently, they started offering scholarships to attend their courses to women, in order to boost their careers and promote their inclusion in the labor market.

Concerning mothers, instead, the most frequent words are "sfondare soffitto", "salari", "madri ostacolo", "figlio", suggesting that the topic revolves around the issues of gender wage gap and of the "glass ceiling", which is even harder to break for mothers, given the challenges they face in balancing family and career.

44

4.1.6 Topic 6

Topic 6, for women, includes words such as "presenza femminile", "occupazione femminile", "ridurre gap", "giovani donne", "divario retributivo", "empowerment femminile", and "professioniste sanitarie", which suggest that the topic is about professional opportunities for women, especially young ones, in the healthcare sector. Moreover, it covers the issue of wage gap and the need to reduce it.

Concerning mothers, instead, it includes words such as "dimettersi", "mettere bambino", "strutture", "presenza femminile", and "sfida demografica", which suggest that the topic is about the difficulties that mothers face in managing family and work responsibilities, such as the lack of childcare structures like kindergartens, often forcing them to leave their job to stay home with their children. These challenges are therefore strictly interconnected with the decrease of natality and the demographic challenges that the country is facing.

4.1.7 Topic 7

Topic 7, for women contains words such as "donne medico", "lavoro sessuale" and "atlete"; it is a topic that gathers many different aspects of work such as that of medical professions and sexual work, while also talking about physical activity and athletes.

Concerning mothers, instead, it includes words such as "sgravio contributivo", "contratto part-time", "tutele", "famiglia lavoro", "madri laureate", "licenza media", "differenze geografiche", "regioni", highlighting differences across regions in the protection and favorable working arrangements that mothers receive in the context of work when faced with family responsibilities. Moreover, the topic is related to different educational levels of mothers.

4.1.8 Topic 8

Topic 8, for women, includes words such as "norme sociali", "pari opportunità", "aliquote basse", "tassazione differenziata", "conciliare lavoro", "desiderio riproduttivo", "richiesto part-time", "mancano nido", suggesting that the topic is about the need to manage work and family at the same time, and how this need clashes with the lack of daycare centers, resulting in the need for part-time contracts. Moreover, this topic is about tax benefits for

mothers and the implementation of lower tax rates. Finally, the most frequent term, "social norms", suggest that they play an important role in determining women's decision to work and employers' willingness to hire them, since they may face the need to combine multiple responsibilities at the same time.

Concerning mothers, instead, the topic includes words such as "figli", "assegno unico", "fragilità", "cultura aziendale", "cultura inclusiva", "pari opportunità", "sostiene genitorialità", "offrendo supporto", suggesting that this topic is about the support to parenthood which can come in different forms such as economic support (assegno unico) and more broadly speaking an inclusive culture also in the workplace, more sensitive to everyone's needs.

4.1.9   Topic 9

Topic 9, for women, includes words such as "pregiudizi", "danneggia donne", "hanno paura", "subìto discriminazioni", suggesting that the topic revolves around discrimination and prejudices that harm women and that make them feel scared, perhaps in a workplace context.

Concerning mothers, instead, the topic focuses on covid and contains words such as "face mask" and "contagion".

4.1.10   Topic 10

Topic 10, for women, includes words such as "fanno figli", "superano maschi", "ragazze superano", "pari opportunità", "asili nido", "aiutare donne", "prendersi cura", "colmare gap", suggesting that the topic revolves around the fact that women can perform at least as well as men in the workplace, and therefore they deserve equal opportunities. Once again, articles about working women mention the fact that they could have children and make reference to their caregiving duties.

Moreover, it is worth noting the choice of words when talking about women, who are referred to as "girls". While this may not seem an issue at first, it is actually belittling, and is used to delegitimize their professional roles and diminish the value of their contributions.

Concerning mothers, instead, the most frequent words are "conciliare lavoro", "maternità", "cura", "effettiva parità", "fanno figli", "Elisabetta Franchi", "cultura patriarcale", "asili aziendali", suggesting that the topic revolves around the unequal culture that pervades

the corporate world, that reflects the patriarchal structure of society, where women are discriminated, especially during their fertile age, due to the fact that they *might* have children one day. This in turns leads to an anticipatory action by firms, which avoid hiring them, in favor of older women, or men, to avoid having to deal with their absence due to maternity leaves and other family duties once their children grow up. This is an aspect that drove public discourse on these issues when, in May 2022, the Italian fashion entrepreneur Elisabetta Franchi, declared that she only hires women over the age of 40, precisely to avoid the issues mentioned above.

Something that stands out from the comparative analysis of each topic, is that even though articles have been filtered distinguishing between those regarding working women and those on working mothers, articles on women often talk about them stressing on their role of mothers, frequently using words that refer to family responsibilities, children, parental leaves, and so on. This suggests that media narratives continue to link women's professional identity with their family roles, fostering expectations on them to manage the two at the same time. Concerning working mothers, as expected, topics are focused on the needs to manage multiple responsibilities at the same time and the different types of support that are available, or needed, such as different forms of leave and fiscal support, as well as the issues of inequality.

4.2   Left- vs Right-Wing Newspapers

While there were not many differences in topic proportion among newspapers of different political orientations, with few exceptions, it is interesting to see Figure 24 comparing the expected topic proportion in left- and right-wing newspapers. Topic 1 and 3 are the most distant from the center, while the others are very close to it, suggesting a balance in how much they have been discussed by newspapers of opposite views.

Figure 24: Topic contrast

Left vs right
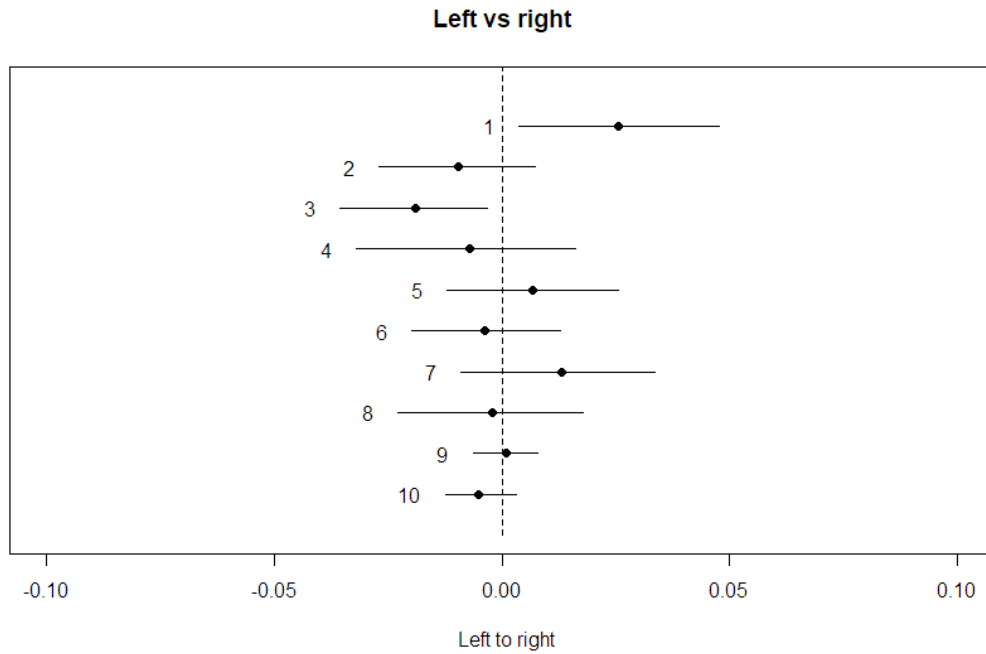
4.3 Topic Correlation

Moreover, Figure 25 shows the correlation between topics, that refers to how often they co-occur in the documents analyzed. Dashed (red) lines show negative correlation, suggesting that they are less likely to co-occur, while solid (green) lines show positive correlation between topics, meaning they are likely to appear together. The size of the nodes reflects topic proportions shown in Figure 17. Consistently with the assumption of the model that topics should be exclusive, we can see from the image that most of them are negatively correlated, while only topic 10 is slightly positively correlated with topic 4 and 6.

Figure 25: Topic correlation
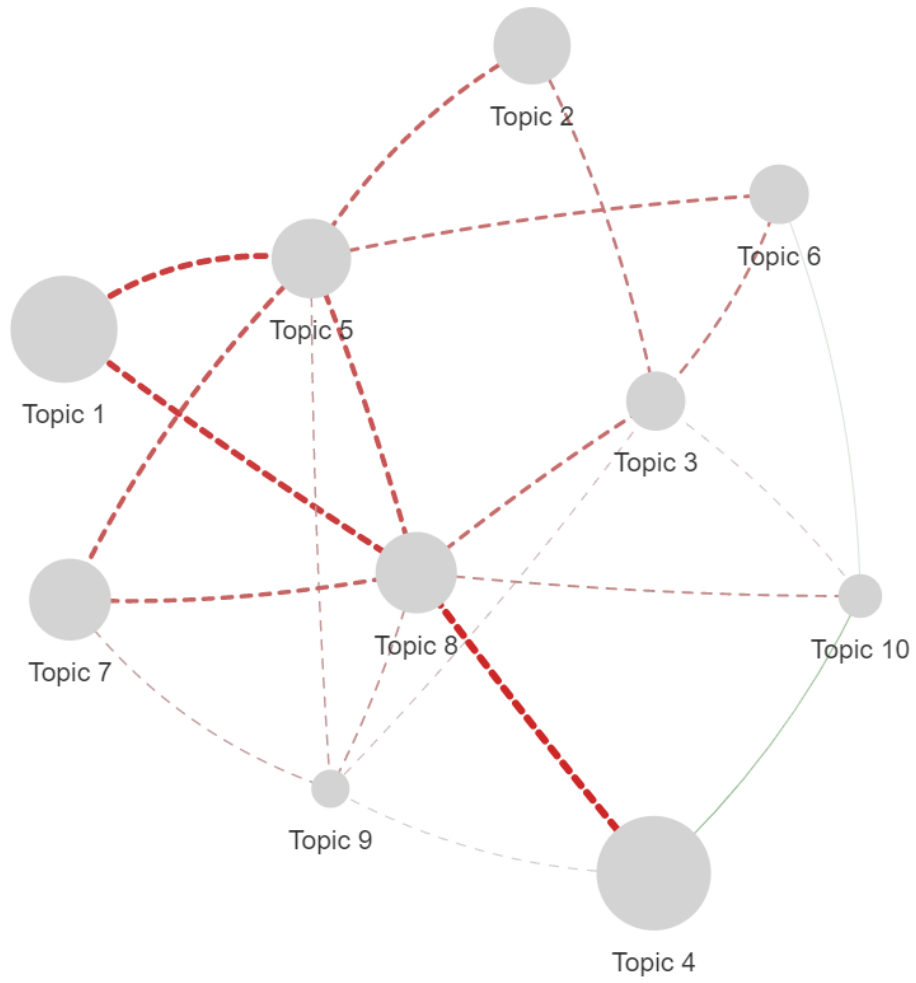
Conclusion

In this thesis we studied the media narratives surrounding the topics of working women and working mothers, with a particular interest in whether and how they changed following the change in the political leadership of the country.

The analysis of newspaper articles revealed that the discourses on working women and mothers often overlap, as both stress on topics such as family responsibilities and parental leaves. A few topics were discussed in different proportions over time, with fluctuations around the time of the transition between governments or increases around the time of the passing of budget laws. Moreover, the way newspapers talked about motherhood and career often referred to the Prime Minister Giorgia Meloni, suggesting that the fact that she covers such a position while also having family responsibilities fueled the discourse on what are the actual possibilities of women and mothers to juggle family and career at the same time.

Finally, when looking at the coverage of the various topics in newspapers of different political orientations, there was no substantial difference, with the exception of topic one that was covered more extensively by right-wing newspapers.

Overall, it is interesting to consider that the pattern that emerged from this analysis is often focused on the concepts of family and motherhood, highlighting relevant social expectations on women and mothers but at the same time the fact that this is also an issue to tackle. In contrast, there is no debate on working men or fathers, suggesting a gender bias that assumes that they are less involved in family responsibilities. This disparity in media coverage reflects and perpetuates traditional gender norms and sheds light on the need for a more balanced and inclusive conversation on work and family dynamics.

This thesis, however, does not come without limitations. In particular, the "women" dataset could be extended to include the following keywords: "donne lavoratrici" e "donna lavoratrice", so as to correspond to those of the "mothers" dataset. Moreover, this work can be extended by including more newspapers in the dataset, and by extending the time frame in order to discover whether there are long-term changes in the way these topics are discussed.

References

Akerlof, G. A. (1980). A theory of social custom, of which unemployment may be one consequence. *The quarterly journal of economics*, 94(4):749–775.

Akerlof, G. A. and Kranton, R. E. (2000). Economics and identity. *The quarterly journal of economics*, 115(3):715–753.

Arrow, K. (1971). The theory of discrimination.

Bai, X., Zhang, X., Li, K. X., Zhou, Y., and Yuen, K. F. (2021). Research topics and trends in the maritime transport: A structural topic model. *Transport Policy*, 102:11–24.

Baker, M. and Milligan, K. (2008). How does job-protected maternity leave affect mothers' employment? *Journal of Labor Economics*, 26(4):655–691.

Becker, G. S. (1957). The economics of discrimination (chicago: University of chicago).

Bertrand, M. (2011). New perspectives on gender. In *Handbook of labor economics*, volume 4, pages 1543–1590. Elsevier.

Bettinger, E. P. and Long, B. T. (2005). Do faculty serve as role models? the impact of instructor gender on female students. *American Economic Review*, 95(2):152–157.

Blei, D. M. (2012). Probabilistic topic models. *Communications of the ACM*, 55(4):77–84.

Blei, D. M., Ng, A. Y., and Jordan, M. I. (2003). Latent dirichlet allocation. *Journal of machine Learning research*, 3(Jan):993–1022.

Boussalis, C., Dukalskis, A., and Gerschewski, J. (2023). Why it matters what autocrats say: Assessing competing theories of propaganda. *Problems of Post-Communism*, 70(3):241–252.

Bovini, G., Cattadori, N., De Philippis, M., and Sestito, P. (2023a). The short and medium term effects of full-day schooling on learning and maternal labor supply.

Bovini, G., De Philippis, M., and Rizzica, L. (2023b). The origins of gender wage gaps: the role of school to work transition. *Temi di Discussione (Working Papers) forthcoming, Bank of Italy.*

Brenøe, A. A. (2022). Brothers increase women's gender conformity. *Journal of Population Economics*, 35(4):1859–1896.

Brilli, Y., Del Boca, D., and Pronzato, C. D. (2016). Does child care availability play a role in maternal employment and children's development? evidence from italy. *Review of Economics of the Household*, 14:27–51.

Buono, I. and Polselli, A. (2022). An international map of gender gaps. *Bank of Italy Occasional Paper*, (714).

Busby, E. C., Howat, A. J., and Myers, C. D. (2023). Changing stereotypes of partisans in the trump era. *Political Science Research and Methods*, pages 1–8.

Campa, P., Casarico, A., and Profeta, P. (2011). Gender culture and gender gap in employment. *CESifo Economic Studies*, 57(1):156–182.

Cappadozzi, T. (2019). I tempi della vita quotidiana. lavoro, conciliazione, parità di genere e benessere soggettivo.

Carlana, M. (2019). Implicit stereotypes: Evidence from teachers' gender bias. *The Quarterly Journal of Economics*, 134(3):1163–1224.

Carrell, S. E., Page, M. E., and West, J. E. (2010). Sex and science: How professor gender perpetuates the gender gap. *The Quarterly journal of economics*, 125(3):1101–1144.

Carta, F. (2019). Female labour supply in italy: the role of parental leave and child care policies. Technical report, Bank of Italy, Economic Research and International Relations Area.

Carta, F., De Philippis, M., Rizzica, L., and Viviano, E. (2023). *Women, labour markets and economic growth.* Banca d'Italia.

Cavapozzi, D., Francesconi, M., and Nicoletti, C. (2021). The impact of gender role norms on mothers' labor supply. *Journal of Economic Behavior & Organization*, 186:113–134.

Chandelier, M., Steuckardt, A., Mathevet, R., Diwersy, S., and Gimenez, O. (2018). Content analysis of newspaper coverage of wolf recolonization in france using structural topic modeling. *Biological conservation*, 220:254–261.

Chen, X., Faviez, C., Schuck, S., Lillo-Le-Louët, A., Texier, N., Dahamna, B., Huot, C., Foulquié, P., Pereira, S., Leroux, V., et al. (2018). Mining patients' narratives in social media for pharmacovigilance: adverse effects and misuse of methylphenidate. *Frontiers in pharmacology*, 9:541.

Chuang, J., Fish, S., Larochelle, D., Li, W. P., and Weiss, R. (2014). Large-scale topical analysis of multiple online news sources with media cloud. *NewsKDD: Data Science for News Publishing, at KDD*.

Chung, G., Rodriguez, M., Lanier, P., and Gibbs, D. (2022). Text-mining open-ended survey responses using structural topic modeling: a practical demonstration to understand parents' coping methods during the covid-19 pandemic in singapore. *Journal of Technology in Human Services*, 40(4):296–318.

Cortés, P., Koşar, G., Pan, J., and Zafar, B. (2022). Should mothers work? how perceptions of the social norm affect individual attitudes toward work in the us. Technical report, National Bureau of Economic Research.

Cruciani, C. and Santagiustina, C. R. (2023). The present and future of sustainability disclosure in equity investment funds' precontractual documents: mapping esg discourse through stm. *Finance Research Letters*, page 104033.

De Philippis, M. (2017). The dynamics of the italian labour force participation rate: determinants and implications for the employment and unemployment rate. *Bank of Italy Occasional Paper*, (396).

Eagly, A. H. (2013). *Sex differences in social behavior: A social-role interpretation*. Psychology Press.

EVS (2022). European values study 2017: Integrated dataset (evs 2017). GESIS, Cologne. ZA7500 Data file Version 5.0.0, https://doi.org/10.4232/1.13897.

Fernandez, R. (2007). Women, work, and culture. *Journal of the European Economic Association*, 5(2-3):305–332.

Fernández, R., Fogli, A., and Olivetti, C. (2004). Mothers and sons: Preference formation and female labor force dynamics. *The Quarterly Journal of Economics*, 119(4):1249–1299.

Fogli, A. and Veldkamp, L. (2011). Nature or nurture? learning and the geography of female labor force participation. *Econometrica*, 79(4):1103–1138.

Girsberger, E. M., Hassani-Nezhad, L., Karunanethy, K., and Lalive, R. (2023). Mothers at work: How mandating a short maternity leave affects work and fertility. *Labour Economics*, 84:102364.

Givord, P. and Marbot, C. (2015). Does the cost of child care affect female labor market participation? an evaluation of a french reform of childcare subsidies. *Labour Economics*, 36:99–111.

Goldin, C. (2014). A pollution theory of discrimination: male and female differences in occupations and earnings. In *Human capital in history: The American record*, pages 313–348. University of Chicago Press.

Goldin, C. and Rouse, C. (2000). Orchestrating impartiality: The impact of "blind" auditions on female musicians. *American economic review*, 90(4):715–741.

Havnes, T. and Mogstad, M. (2011). Money for nothing? universal child care and maternal employment. *Journal of Public Economics*, 95(11-12):1455–1465.

INPS (2022). Conoscere il paese per costruire il futuro. xxi rapporto annuale. technical report.

ISTAT (2023). Offerta di nidi e servizi integrativi per la prima infanzia — anno educativo 2021/2022.

Kleven, H., Landais, C., Posch, J., Steinhauer, A., and Zweimüller, J. (2019). Child penalties across countries: Evidence and explanations. In *AEA Papers and Proceedings*, volume 109, pages 122–126. American Economic Association 2014 Broadway, Suite 305, Nashville, TN 37203.

Lalive, R., Schlosser, A., Steinhauer, A., and Zweimüller, J. (2014). Parental leave and mothers' careers: The relative importance of job protection and cash benefits. *Review of Economic Studies*, 81(1):219–265.

Lefebvre, P. and Merrigan, P. (2008). Child-care policy and the labor supply of mothers with young children: A natural experiment from canada. *Journal of Labor Economics*, 26(3):519–548.

Lomazzi, V. and Seddig, D. (2020). Gender role attitudes in the international social survey programme: Cross-national comparability and relationships to cultural values. *Cross-Cultural Research*, 54(4):398–431.

Lu, H.-M., Wei, C.-P., and Hsiao, F.-Y. (2016). Modeling healthcare data using multiple-channel latent dirichlet allocation. *Journal of biomedical informatics*, 60:210–223.

Milan, G. (2022). Nidi e servizi educativi per bambini tra 0 e 6 anni: un quadro d'insieme.

Minello, A. (2024). Le equilibriste - la maternità in italia. save the children.

Modena, F., Rettore, E., and Tanzi, G. M. (2022). Asymmetries in the gender effect of high-performing peers: Evidence from tertiary education. *Labour Economics*, 78:102225.

Nixon, L. A. and Robinson, M. D. (1999). The educational attainment of young women: Role model effects of female high school faculty. *Demography*, 36:185–194.

Nollenberger, N. and Rodríguez-Planas, N. (2015). Full-time universal childcare in a context of low maternal employment: Quasi-experimental evidence from spain. *Labour Economics*, 36:124–136.

OECD (2023a). Employment database.

OECD (2023b). Family database.

Olivetti, C. and Petrongolo, B. (2008). Unequal pay or unequal employment? a cross-country analysis of gender gaps. *Journal of labor economics*, 26(4):621–654.

Olivetti, C. and Petrongolo, B. (2016). The evolution of gender gaps in industrialized countries. *Annual review of Economics*, 8:405–434.

Olivetti, C. and Petrongolo, B. (2017). The economic consequences of family policies: lessons from a century of legislation in high-income countries. *Journal of Economic Perspectives*, 31(1):205–230.

Profeta, P. (2020). *Gender equality and public policy: Measuring progress in Europe*. Cambridge University Press.

Roberts, M. E., Stewart, B. M., and Airoldi, E. M. (2016). A model of text for experimentation in the social sciences. *Journal of the American Statistical Association*, 111(515):988–1003.

Roberts, M. E., Stewart, B. M., Tingley, D., Airoldi, E. M., et al. (2013). The structural topic model and applied social science. In *Advances in neural information processing systems workshop on topic models: computation, application, and evaluation*, volume 4, pages 1–20. Harrahs and Harveys, Lake Tahoe.

Roberts, M. E., Stewart, B. M., Tingley, D., Lucas, C., Leder-Luis, J., Gadarian, S. K., Albertson, B., and Rand, D. G. (2014). Structural topic models for open-ended survey responses. *American journal of political science*, 58(4):1064–1082.

Rusanov, A., Miotto, R., and Weng, C. (2018). Trends in anesthesiology research: a machine learning approach to theme discovery and summarization. *JAMIA open*, 1(2):283–293.

Santagiustina, C. R. M. A. and Warglien, M. (2022). The architecture of partisan debates: The online controversy on the no-deal brexit. *PLoS one*, 17(6):e0270236.

Schmidt, A., Ivanova, A., and Schäfer, M. S. (2013). Media attention for climate change around the world: A comparative analysis of newspaper coverage in 27 countries. *Global Environmental Change*, 23(5):1233–1248.

Schönberg, U. and Ludsteck, J. (2014). Expansions in maternity leave coverage and mothers' labor market outcomes after childbirth. *Journal of Labor Economics*, 32(3):469–505.

World Bank (2023). World bank open data portal.

Appendix A: European Values Study

Figure 1: Agreement with the statement "A man's job is to earn money; a woman's job is to look after the home and family" by gender and country.
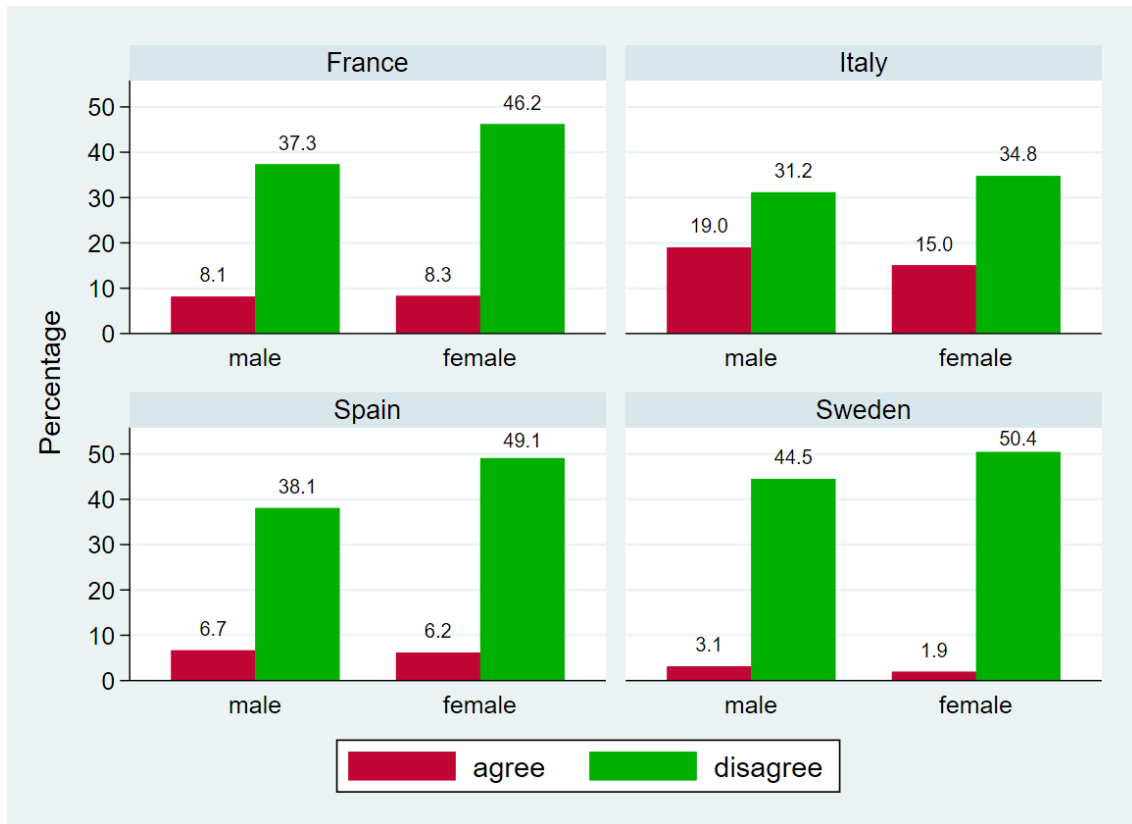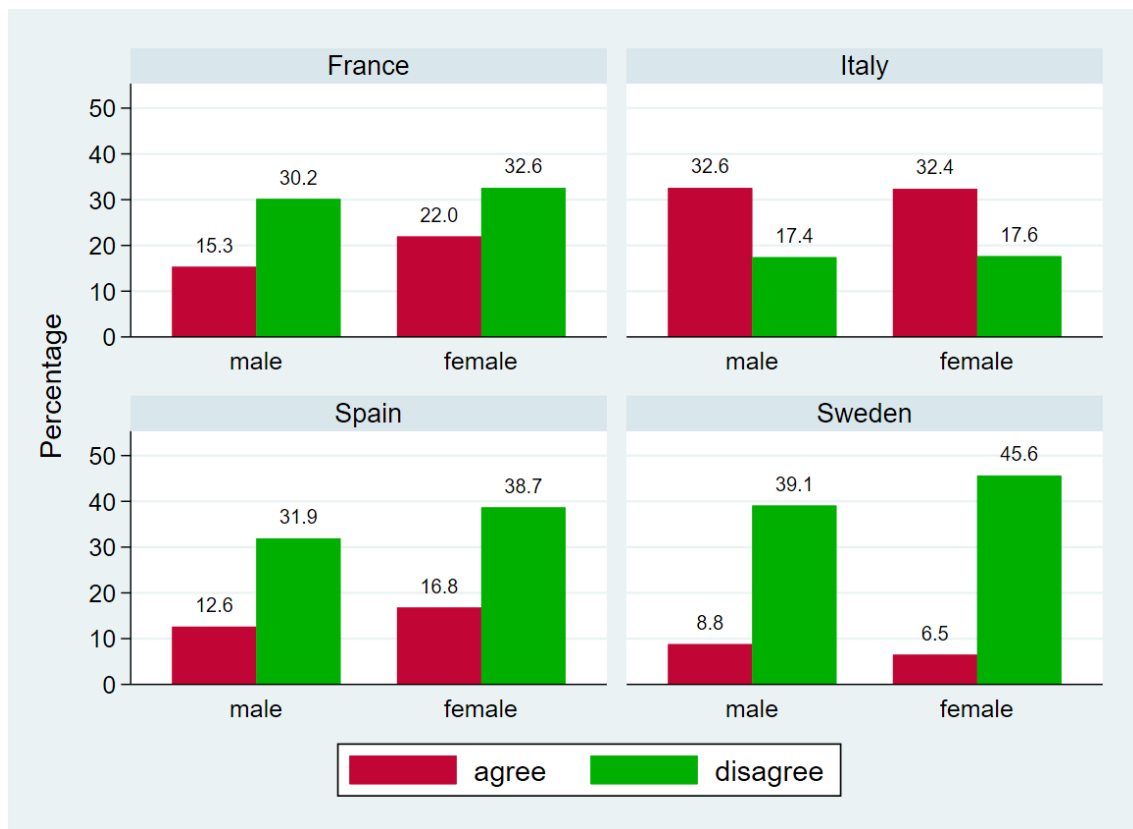

Source: own elaboration of EVS data

Figure 2: Agreement with the statement "A job is alright but what most women really want is a home and children" by gender and country.
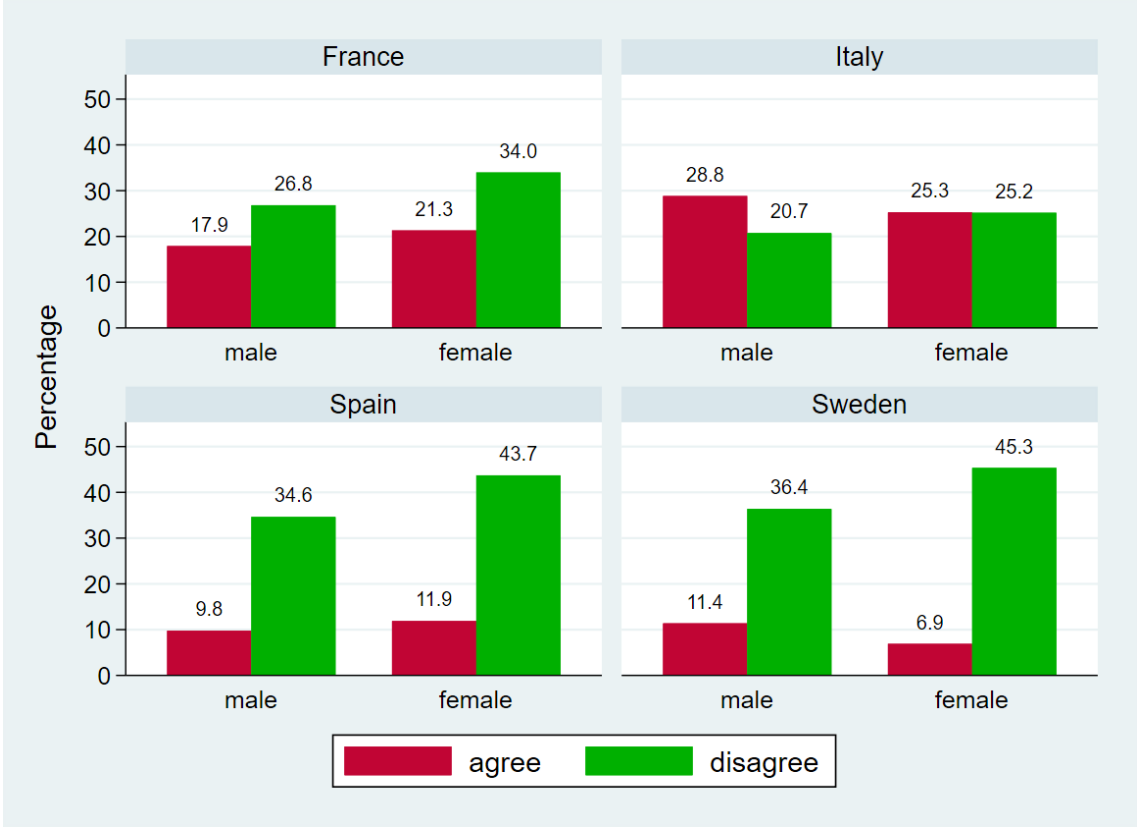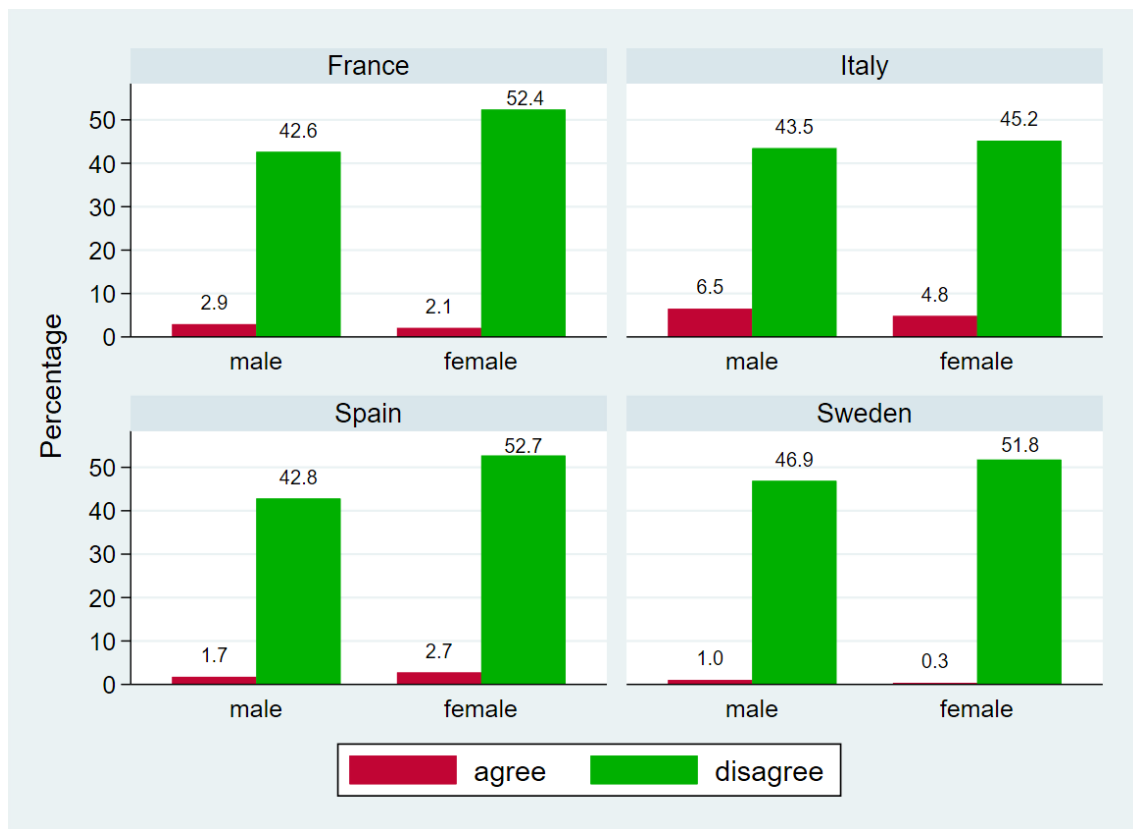

Source: own elaboration of EVS data

Figure 3: Agreement with the statement "All in all, family life suffers when the woman has a full-time job" by gender and country.
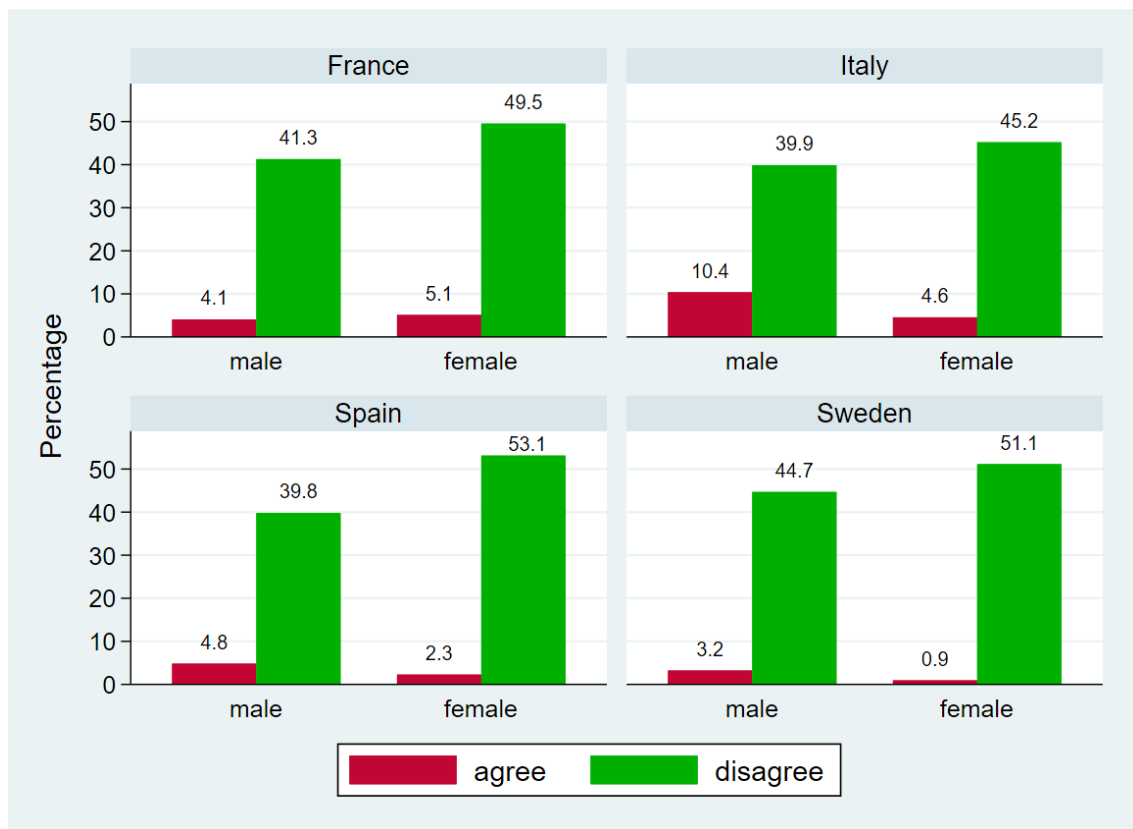

Source: own elaboration of EVS data

Figure 4: Agreement with the statement "A university education is more important for a boy than for a girl" by gender and country.

Source: own elaboration of EVS data

Figure 5: Agreement with the statement "On the whole, men make better business executives than women do" by gender and country.

Source: own elaboration of EVS data

Appendix B: Results of the Analysis

Figure 6: Most frequent words in terms of probability by topic for the "women" group.
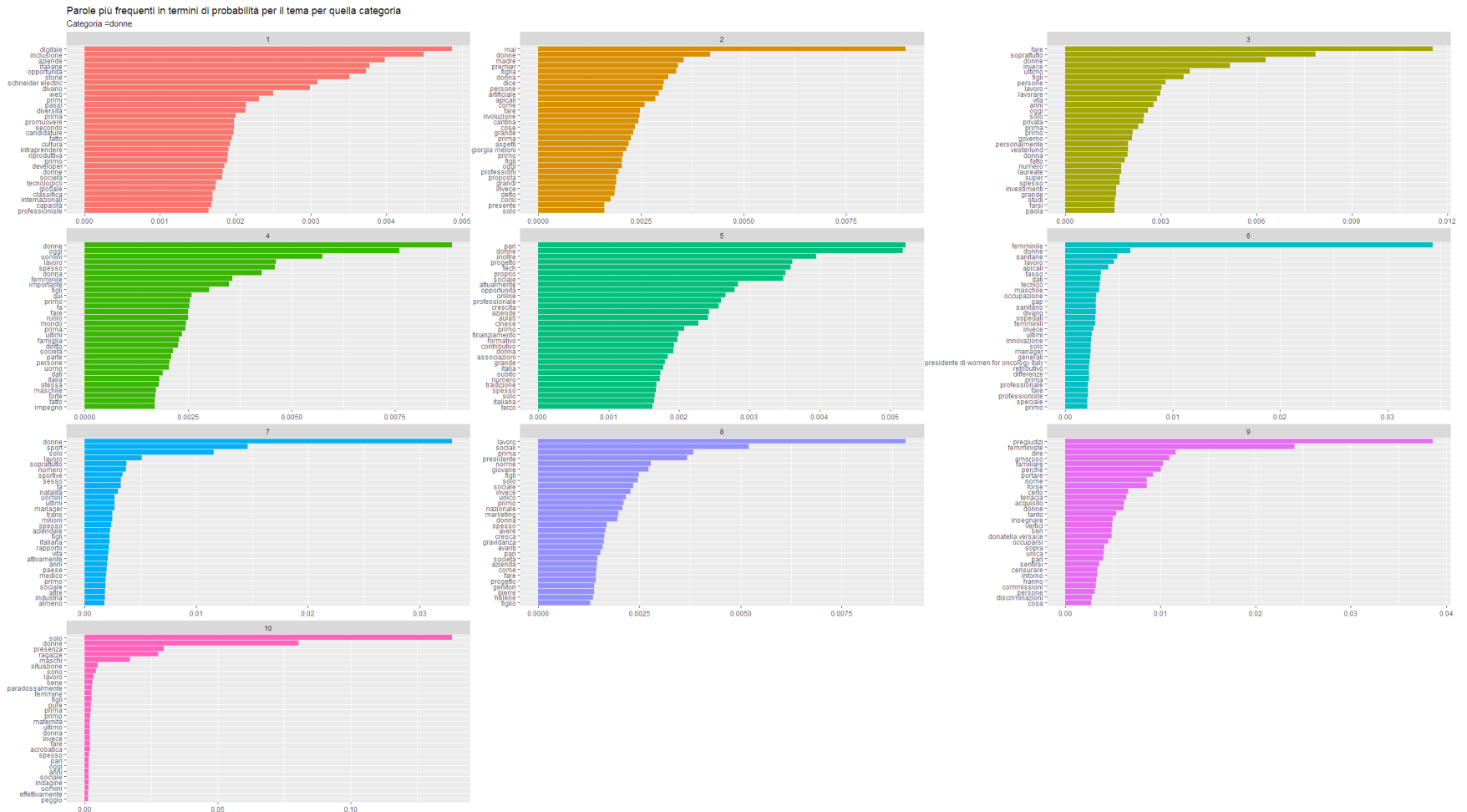
Figure 7: Most frequent words in terms of probability by topic for the "mothers" group.

Parole più frequenti in termini di probabilità per il tema per quella categoria
Categoria = madri

Figure 8: Most frequent associations in terms of probability by topic for the "women" group.

Figure 9: Most frequent associations in terms of probability by topic for the "mothers" group.