

# Employment uncertainty and fertility intentions: Stability or resilience?

Arianna Gatta<sup>1</sup>, Francesco Mattioli<sup>2</sup>, Letizia Mencarini <sup>2</sup> and Daniele Vignoli <sup>3</sup>

<sup>1</sup>European University Institute, <sup>2</sup>Bocconi University, <sup>3</sup>University of Florence

*The role of employment uncertainty as a fertility driver has previously been studied with a limited set of constructs, leading to inconclusive results. We address this oversight by considering perceived stability of employment and perceived resilience to potential job loss as two key dimensions of employment uncertainty in relation to fertility decision-making. The present study relies on the 2017 Italian Trustlab survey and its employment uncertainty module. We find that perception of resilience to job loss is a powerful predictor of fertility intentions, whereas perception of employment stability has only a limited impact. The observed relationship between resilience and fertility intentions is robust to the inclusion of person-specific risk attitude and does not depend on the unemployment rate or the share of fixed-term contracts in the area of residence. We conclude that the notion of employment uncertainty includes distinct expectations towards the future, which should be considered separately to understand fertility decision-making.*

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## Introduction

In recent years, the notion of employment uncertainty has become increasingly common in the writings of social scientists, not least in fertility research (Kreyenfeld et al. 2012; Comolli et al. 2020; Vignoli et al. 2020a, 2020b). The Great Recession (2007–09) with its downturns in both financial and labour markets has meant a greater interest in understanding whether employment uncertainty affects fertility intentions and fertility behaviour (Morgan et al. 2011; Taylor et al. 2011; Schneider 2015). But although the literature on the topic is booming, there is a series of theoretical lacunae around the idea of employment uncertainty.

Employment uncertainty is a relative concept—relative to expectations that economic prospects are stable at a given level (Comolli and Vignoli 2021). In fertility studies, it is customarily operationalized as present and past labour market disadvantages—primarily through unemployment and time-

limited employment (Mills and Blossfeld 2003; Kreyenfeld et al. 2012; for a meta-analysis of European research findings, see Alderotti et al. 2021). Nonetheless, empirical evidence on the nexus between employment uncertainty and fertility remains inconclusive (Sobotka et al. 2011; Kreyenfeld et al. 2012). We posit that a key reason for this heterogeneous pattern is that studies have failed to capture the multidimensionality and the prospective nature of employment uncertainty (Vignoli et al. 2020b). In this paper, we operationalize employment uncertainty through two indicators of future economic prospects and test their relevance for fertility intentions. We distinguish between perceived uncertainty regarding stability in employment and perceived uncertainty with respect to the capacity to be resilient (i.e. to recover from adverse events, such as job loss). We argue that being uncertain with respect to employment stability vs being resilient in the face of a lost job might have different consequences for fertility intentions. Fertility intentions

may be more responsive to the perception that recovery will be possible even in the case of job loss, rather than being a function of the perception of having stable employment. This is, to the best of our knowledge, the first attempt to focus on resilience in a study of employment uncertainty and fertility intentions.

In this study we consider the perceptions of stability and resilience in employment as two distinct uncertainty expectations around jobs. We additionally verify whether the association between these two expectations and fertility intentions: (1) holds net of person-specific idiosyncratic risk preferences; and (2) is moderated by the economic context. First, we acknowledge that conceptualizing uncertainty as an ‘immanent value’—using terminology à la Friedman et al. (1994)—downplays the fact that individuals are heterogeneous in their person-specific risk attitudes (e.g. Sverke and Hellgren 2002). An increasing number of studies have dealt with subjective measures of employment uncertainty (Witte and Wagner 1995; Kreyenfeld 2009; Bhaumik and Nugent 2011; Hofmann and Hohmeyer 2013; Fahlén and Oláh 2018; Glavin et al. 2020). Nonetheless, no study has tested whether their effect on fertility remains after accounting for person-specific risk attitudes, which may affect how people perceive uncertainty and make fertility choices. Second, unfavourable macroeconomic conditions can influence the perception of employment uncertainty, even for those with relatively secure employment prospects (Hoem 2000; Hofmann et al. 2017). As such, these conditions can affect fertility intentions. This study includes moderation models designed to address whether context variables moderate the association between individuals’ perception of employment uncertainty and their fertility intentions.

The empirical analysis relies on a unique survey that includes a number of questions relating to employment uncertainty vis-à-vis respondents’ fertility intentions: the Trustlab survey for Italy (Aassve et al. 2018). Trustlab is a project launched by the Organisation for Economic Co-operation and Development (OECD) in 2016 (Murtin et al. 2018) and aimed at creating the first internationally comparable and nationally representative database on trust and social preferences, using both survey and experimental approaches. Italy represents an interesting laboratory, where the combination of macroeconomic turbulence, targeted and partial labour market deregulation, and weak family policies has created a general atmosphere of uncertainty that makes fertility decisions more difficult to assess (Barbieri et al. 2015; Aassve et al. 2020; Vignoli

et al. 2020c). This state of affairs is accompanied by extraordinary regional differences in terms of fertility levels, unemployment, and share of fixed-term contracts.

## Background

### *Employment uncertainty: Stability vs resilience*

In socio-demographic studies, ‘economic uncertainty’ remains an elusive and highly debated term (Vignoli et al. 2020a). In economics it is conceptualized as an individual’s inability to assign probabilities to outcomes influencing their own economic situation (Knight 1921; Beckert 1996), leading to uncertainty about future economic prospects (Bloom 2014; Moore 2017). Beckert and Bronk (2018) recognized that uncertainty is one of the salient characteristics of a capitalist society. Still, individuals need to take decisions even if uncertainty hinders the possibility of a rational calculation with regard to future events. Imagination and the ability to devise different scenarios together play a major role in planning for the future. In this framework, assessing perceived employment uncertainty means evaluating the expectations attached to different aspects of economic life and understanding how individuals project them into the future (Savelieva et al. 2021). Following Beckert and Bronk’s (2018) frame of reference, and its adaptation to fertility research (the ‘Narrative Framework’, see Vignoli et al. 2020a, 2020b), we view employment uncertainty as a set of expectations related to the labour market that are used for making sense of the future.

We propose a conceptual distinction between perceived employment uncertainty related to the ability to keep the current situation stable and perceived uncertainty linked to an individual’s ability to recover from adverse events. These two prospects may matter differently for fertility intentions because childbearing decisions may be driven not by a reasonable likelihood of receiving an adequate level of income, but rather by the optimistic perception that, even in the worst possible scenario, things will ‘work out’. The concept of resilience, a neglected dimension of uncertainty, provides an opportunity to evaluate the subjective perception of employment uncertainty and its association with fertility (intentions). From a micro perspective, resilience has been defined as ‘a dynamic process encompassing positive adaptation within the context of significant adversity’ (Luthar et al. 2000, p. 543). Rather than

being a fixed psychological trait, resilience is considered to be a dynamic ability that can be actively stimulated (Luthar et al. 2000; Conger and Conger 2002; Luthar 2015). In this study, we rely on a notion of adaptive resilience (Simmie and Martin 2010; Martin 2012; Martin and Sunley 2015), that is, the ability of individuals to react to negative shocks through adaptation and movement to a new equilibrium. It is worth noting that resilience is a relative concept. An individual or system may be resilient to some types of adverse events but not to others (Masten and Wright 2010). Here, we focus on perceived uncertainty and resilience to a negative shock affecting employment status, such as job loss. The perceived uncertainty regarding the ability to recover from failure can matter for fertility intentions. The birth of a child is an event that is likely to be followed by higher financial pressures and poverty risks in the family unit, and reduced job opportunities. This is especially true in Southern Europe (Barbieri and Bozzon 2016).

The current literature does not provide any empirical attempt to understand how uncertainty with respect to economic stability and uncertainty relating to resilience can matter differently for fertility intentions. We introduce resilience as a dimension of employment uncertainty, one that is relevant in determining fertility intentions by contrast to perception of employment stability.

Previous literature has shown that economic uncertainty can affect the fertility intentions of men and women differently within the family unit (Kreyenfeld 2009; Vignoli et al. 2012; Hofmann and Hohmeyer 2013; Modena et al. 2013; Fahlén and Oláh 2018). Oppenheimer (1988) argued that uncertainty is embodied by unstable careers (especially for men), as indicated by low-status jobs, unemployment, and irregular or temporary employment. These employment conditions foster uncertainty in the future, with relevant country variation. When women are the main caregivers and men the primary breadwinners, the economic well-being of the household depends mainly on the market performance of the man (Kalmijn 2011). Little is known about whether perceived uncertainty regarding resilience to potential job loss has a different impact on fertility plans of men vs women.

### *Employment uncertainty and risk attitudes*

Individuals might differ with respect to how they react and take decisions in uncertain economic situations: they are heterogeneous in how they feel and

tolerate uncertainty (Bernardi et al. 2008). Hence, subjective perceptions of uncertainty are influenced by individual attitudes to risk (Knight 1921). There is a distinction, both theoretical and empirical, between uncertainty and risk. While uncertainty relates to the inability to assign a probability to possible events, risk encompasses a known distribution of pay-offs (Tversky and Fox 1995) and the possibility for the individual to choose rationally, based on their own attitudes to risk. Having children is considered risky insofar as it leads to higher expenditure and shrinking income, for at least some time after birth. The extent to which people are willing to have children can depend on their risk propensity (Bellani and Arpino 2021), an attitude that should be measured separately from any assessment of their perceived employment uncertainty.

From an empirical standpoint, using subjective measures of employment uncertainty to predict fertility intentions, without controlling for individual risk attitudes, may lead to biased estimates due to omitted variables (Angrist and Pischke 2009). This point has been neglected in previous research using micro-level measures of employment uncertainty (Huinink 2015), mostly due to lack of survey items regarding risk attitudes.

### *Aggregate-level objective employment uncertainty*

The place where a person lives and their social environment are crucial in driving fertility decision-making (Hoem 2000). Anchoring effects may occur (Kahneman 1992) as individuals form judgements about their own economic prospects based on the economic conditions prevailing around them. In addition, the economic conditions of others may affect individuals' perceptions of employment uncertainty (Schneider 2015), moderating the relationship between subjective perception of employment uncertainty and fertility intentions. This hypothesis is supported by previous empirical evidence. Even individuals with relatively stable job conditions have reported lower fertility intentions in the midst of general economic deterioration (Fiori et al. 2018).

Against this backdrop, the relationship between perceived employment uncertainty and fertility intentions may be moderated by aggregate-level economic conditions, suggesting that an individual's perceptions of their economic prospects may be anchored in the local context. In order to assess this hypothesis, we propose a moderation model, where our indicators of employment uncertainty

are interacted with variables measuring macroeconomic conditions in the area of residence.

### *Economic and non-economic determinants of fertility intentions*

The relationship between the perception of employment uncertainty and fertility intentions may be influenced by other economic and non-economic variables. These variables need to be considered, as they could confound the main relationship of interest.

Age has proven to be an important predictor of fertility intentions and behaviour. The relationship between age and fertility is usually represented by a reverse-U-shaped curve, with a higher probability of childbearing as age increases, reaching a maximum, and then decreasing again (Menken 1985). At the same time, objective and subjective employment uncertainty are age dependent. Younger individuals are more exposed to the employment uncertainty typical of the globalized world (Mills and Blossfeld 2003). Precarious work arrangements are more common among the young, making the transition to adulthood a longer process than it used to be (Heinz 2009).

Parity is also an important predictor of future fertility intentions (Morgan 1982). Intentions to have a child are often considered as parity progression intentions, with childless individuals displaying stronger fertility intentions than those who already have children (Billari et al. 2009). Parenthood is a life-changing event, which might affect both the economic outlook of couples and their intention to have more children. There is evidence that childbearing entails a wage penalty for mothers (Anderson et al. 2002) and a premium for fathers (Glauber 2018), changing the household's economic perspectives. Moreover, employment opportunities may be more limited for women after their first child (McRae 1993; Correll et al. 2007), adding to perceived employment uncertainty.

Structural differences in both childbearing intentions and perceptions of employment uncertainty between men and women suggest that sex is another important socio-demographic factor (Neyer et al. 2013). Prior studies agree that men's objective employment uncertainty is a strong predictor of fertility (Vignoli et al. 2012), whereas evidence that women's objective and perceived employment uncertainty affect fertility is mixed (Kreyenfeld 2009; Hofmann and Hohmeyer 2013; Modena et al. 2013; Fahlén and Oláh 2018).

Regarding socio-economic factors, investment in human capital has a relevant effect on both fertility

decision-making and perception of employment uncertainty. Better educated individuals have an incentive to postpone childbirth to maximize the potential earnings produced by investments in human capital (Rindfuss et al. 1980; Kravdal and Rindfuss 2008). Education is also often considered as a valid marker of economic prospects (Kreyenfeld 2002), as higher levels of education are correlated with lower employment uncertainty and a better ability to plan for the future (Adsera 2011). Thus, individuals may form expectations regarding their future level of employment uncertainty based on their level of education.

Employment status and characteristics are also relevant. The literature highlights the difference between the self-employed and employees. On one hand the self-employed may be more likely to intend to have a child due to their more flexible working hours (Boden 1999; Matysiak and Mynarska 2020); on the other hand greater uncertainty related to fluctuating income from self-employment may encourage women to postpone childbirth (Noseleit 2014).

Household income might be another crucial factor. On one hand, high-income households may be able to react better to employment uncertainty. Thus, all things being equal, their fertility intentions may be stronger (Johnson and Lean 1985). On the other hand, individuals living in high-income families may face higher opportunity costs for spending time on child-rearing activities. Thus, their fertility intentions could be weaker than those of low-income families (Borg 1989; Schultz 2006).

### *Employment uncertainty and fertility in Italy*

Following the oil shocks in the 1970s, the industrial mass production and consumption model that had characterized middle- and high-income countries entered a deep crisis, with different consequences for the European and American labour markets. Unemployment increased sharply all over Europe, leading to a structural inability to create new jobs and a dramatic increase in unemployment rates (especially among youth). On the other side of the Atlantic, the United States experienced successful occupational outcomes, and social observers attributed this success to the 'flexibility' of the North American labour market, as opposed to European markets that were described as too 'rigid' (Blanchard 2006; Cutuli and Guetto 2013). Southern European labour markets have been characterized by 'targeted and partial deregulation' (Esping-Andersen and

Regini 2000, p. 339). There, the deregulation of employment had an impact almost exclusively on labour market entrants, leaving existing work contracts largely unchanged. Researchers have suggested that these characteristics of Southern European labour markets, with their high levels of youth unemployment and precarious patterns of employment entry, preceded the fertility decline of these countries during the 1990s (e.g. McDonald 2000; Adsera 2004).

Italy is a particularly interesting case. In recent decades, the country has faced increasing discontinuity in employment trajectories. Labour market deregulation began in the 1990s. The main assumption behind deregulation was that giving firms more flexibility in hiring and retaining employees would lead to the creation of more jobs. The biggest step in labour market deregulation was taken in 1997 (Treu Law, L.196/1997), while the subsequent reform (Biagi Law, L.30/2003) gave further impulse to flexible forms of employment, which were far less protective for the worker than those that had been in place before (Bernardi and Nazio 2005). Ample literature on the topic has demonstrated that the process of targeted and partial labour market deregulation contributed to the replacement of secure unionized labour with precarious cheaper employment (Barbieri and Sestito 2008; Cutuli and Guetto 2013; Barbieri and Bozzon 2016). In 2016, almost 86 per cent of employees were on a permanent contract, whereas more than 14 per cent were employed through fixed-term arrangements (ISTAT 2017a). However, there is impressive geographical variation in the prevalence of fixed-term contracts. In some southern provinces, the share of fixed-term contracts was as high as 30 per cent, as opposed to northern provinces in which fixed-term contracts ranged from 6 to 12 per cent of all contracts in 2017. The same degree of geographical variation is evident when looking at the provincial unemployment rate. In 2017, it ranged from less than 4 per cent in a few provinces of northern Italy to 24 per cent in some southern provinces.

In a nutshell, European labour markets experienced strong deregulation in the 1980s and 1990s. Targeted and partial deregulation of the Italian labour market and other aspects of globalization (such as privatizations and liberalizations) generated an unprecedented level of structural uncertainty in contemporary Italy (Bernardi and Nazio 2005). A number of recent studies have dealt with the impact of employment uncertainty on childbearing intentions (Modena et al. 2013; Busetta et al. 2019) and behaviours (e.g. Vignoli et al. 2012; 2020c;

Barbieri et al. 2015) in Italy. Fertility reached lowest-low levels again in 2017, with a total fertility of 1.3 children per woman on average. A limitation of these studies is that they focus solely on objective aspects of employment uncertainty, such as the role of contract type (e.g. Barbieri et al. 2015; Vignoli et al. 2020c), and disregard subjective perceptions. Finally, previous research has focused on whether within-country geographical variations in macroeconomic conditions affect aggregate fertility (Cazzola et al. 2016), but the same research has not considered whether the effect of subjective employment uncertainty on fertility intentions at the individual level is moderated by aggregate-level factors.

## Method

### *Data and sample*

Starting in 2016, the OECD (in connection with the OECD Trust Strategy) sponsored Trustlab, a project aiming to assess the level of trust both in other people, such as strangers and family members, and in institutions, such as the government and the judicial system (Aassve et al. 2018). The project used a variety of tools, including experiments and psychometric measures. The Italian Trustlab data were collected between 11 October and 7 November 2017. The baseline sample is nationally representative of the population aged 18–65 years, and consists of 1,016 respondents, supplemented by a booster sample of 442 women of childbearing age (18–45). The survey, developed with OECD guidance, was administered through an online platform by a polling company. The sampling design for the baseline sample followed a quota sampling design, that is, subjects were recruited in the survey until the distribution of age, sex, and income in the sample reached levels similar to those found in the Italian population. Data are available on a wide variety of topics, such as risk attitudes, personality traits, socio-demographic characteristics, trust, perception of employment uncertainty, and fertility intentions. Representativeness tests carried out on the baseline sample have suggested that it mirrors the Italian population at the regional and provincial levels in terms of age, sex, employment, and marital status (Aassve et al. 2018).

For our analysis, we added the booster sample of women of childbearing age (442 observations) to the representative baseline Trustlab sample (1,016 observations), obtaining a final sample of 1,458 individuals. From this initial sample, we then selected our analytical sample, consisting of employed

individuals aged 18–50 who were cohabiting or married ( $N = 521$ ). We used employed respondents as they can reliably respond to the questions measuring employment stability and resilience. Moreover, we selected cohabiting and married individuals so that fertility intentions can be considered realistic (Neyer et al. 2013): those living in a union are more likely to state fertility preferences predictive of actual future childbearing behaviour (Berrington 2004). In our final analytical sample, there is a high proportion of women (66.7 per cent of respondents). The average age of 37.7 is below the national Italian average age of 44.9 in 2017 (ISTAT 2018) and 38.0 per cent of respondents are childless. This is due to the presence of the booster sample of women of childbearing age and to the selection of individuals aged 18–50 in cohabiting and marital unions, both designed to enable an appropriate analysis of fertility intentions.

In previous studies of the relationship between employment uncertainty and fertility, unemployed individuals were also included in the analysis and unemployment was considered as the most uncertain condition in the scale of perception of employment uncertainty (Fahlén and Oláh 2018). We preferred not to adopt this approach, as it entails comparing a subjective measure (perception of uncertainty) with an objective status (unemployment) in the same variable.

One of the limitations of the Trustlab data is that information about partners' characteristics is not available. Therefore, it was not possible to control for the employment status, income, or pregnancy status of respondents' partners, despite these variables having proven to be relevant in previous studies regarding the relationship between employment uncertainty and fertility intentions (Fahlén and Oláh 2018).

### *Dependent variable*

In our analysis we are interested in how individuals' projections of employment uncertainty into the future determine fertility decision-making; therefore, fertility intentions rather than realized fertility are considered as the outcome of interest (Trinitapoli and Yeatman 2011). Fertility intentions were measured through the question *Do you intend to have a child or another child in the next three years?*, where respondents were asked to answer on the following scale: '1' (*definitely not*), '2' (*probably not*), '3' (*probably yes*), or '4' (*definitely yes*). The indication of a time period of three years is

crucial for reliable answers. Questions on intentions that cover a credibly short time period are generally considered to be acceptable predictors of actual behaviour (Ajzen and Fishbein 1973; Mencarini et al. 2015).

### *Independent variables: Perceived stability and resilience*

Employment uncertainty can be observed along two different dimensions: uncertainty with respect to the stability of future economic conditions and uncertainty with respect to resilience to negative economic shocks. Perceived uncertainty related to economic stability was operationalized through the question on stability perception—*How likely do you think it is that you will still have a job in six months (if you have one now)?*—that allows a response scale ranging from '0' (*very unlikely*) to '10' (*very likely*). The perceived uncertainty with respect to resilience to adverse economic shocks was operationalized through the question on resilience perception—*If you were to lose your job, how likely is it that you would find a job with a similar salary within six months?*—that allows a response scale ranging from '0' (*very unlikely*) to '10' (*very likely*). Subjective indicators of resilience are accepted in the literature (Luthar et al. 2000; Jones and Tanner 2015): individuals often know best the resources available to them in the case of adverse events and are able to provide a well-thought-out assessment of their ability to recover from adversity (Nguyen and James 2013).

The two indicators of stability perception and resilience perception display a statistically significant degree of dependence on one another, but the magnitude of this association is rather small. Pearson's chi-squared test and the likelihood ratio test both reject the null hypothesis of independence of the joint distribution of stability perception and resilience perception at the 1 per cent significance level. At the same time, indicators of the magnitude of the association between these two ordinal variables detect only a small positive association: Cramér's  $V$  amounts to 0.22 (on a scale ranging from '0' = complete independence to '1' = complete dependence), while Goodman and Kruskal's gamma is 0.16 (on a scale ranging from '−1' = perfect negative association to '1' = perfect positive association).

A potential objection could be that resilience perception and stability perception are actually markers of objective employment conditions, such as salary levels. This possibility is excluded by the low

degree of association we find between both personal income and stability perception (Cramér's  $V = 0.19$ ; Goodman and Kruskal's  $\gamma = 0.24$ ) and personal income and resilience perception (Cramér's  $V = 0.15$ ; Goodman and Kruskal's  $\gamma = 0.07$ ).

### Model specification

The impact of the two indicators of employment uncertainty on fertility intentions was assessed using ordered logit models, which can be used under the assumption of proportional odds ratios. In the supplementary material we provide evidence that this assumption is fulfilled in our analysis.

We included in the model specification several controls representing relevant explanatory variables which could confound the relationship between fertility intentions and the indicators of employment uncertainty. The reverse-U-shaped relationship between age and fertility intentions was modelled using a quadratic term. Parity was operationalized as a dummy for childless respondents ('0' = parent; '1' = childless). The small sample size limited the possibility of distinguishing further by higher-order parity; note, however, that two-thirds of the respondents were either childless or had only one child. Sex was included as a dummy variable ('0' = man; '1' = woman), as was education ('0' = highest level of education below university degree; '1' = highest level of education at least university degree). The type of employment was operationalized using a dummy variable that distinguished between being an employee and being self-employed ('0' = employee; '1' = self-employed). In our analytical sample, 38.8 per cent of the respondents had attained a university degree and 23.2 per cent were self-employed. Household income was measured as a continuous variable and included all household earnings in the twelve months preceding the interview; we used its logarithm in the model. Our specification also accounted for regional-level unobserved heterogeneity by including region-specific fixed effects.

In addition to the two indicators of prospective employment uncertainty, individual heterogeneity vis-à-vis risk attitudes was also considered. Risk attitudes were measured through the following survey question: *How do you see yourself: are you generally a person who is fully prepared to take risks or do you try to avoid taking risks?* Answers ranged from '0' = 'completely unwilling to take risks' to '10' = 'very willing to take risks'. In the Italian Trustlab questionnaire, the question about risk attitudes was asked before the set of questions used to derive the two

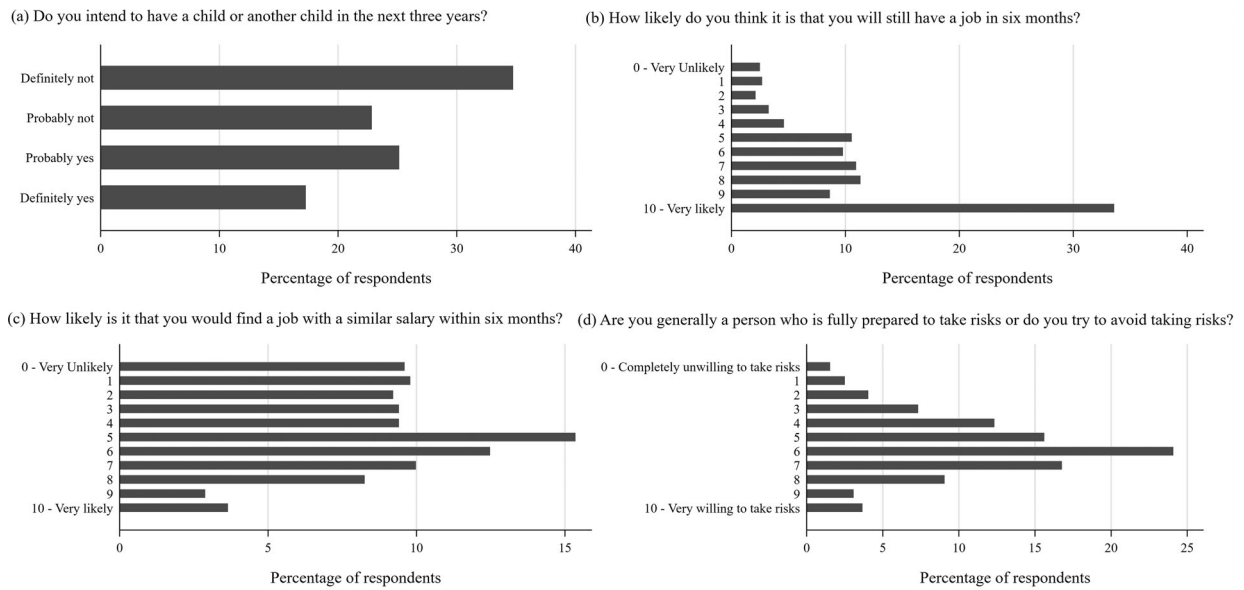
indicators of perceived uncertainty. Therefore, it is unlikely that our measure of risk attitudes is influenced by the salience of economic uncertainty that may have been prompted by previous questions.

The distributions of the ordinal variables of interest (fertility intentions, stability perception, resilience perception, and risk attitude) are available in Figure 1.

We also aim at understanding to what extent area-level economic conditions moderate the relationship between employment uncertainty and fertility intentions. Thus, we chose the smallest level of aggregation available for the area-level variables. In 2017 there were 107 provinces in total in Italy, and the respondents in our sample covered 99 of them. However, for some provinces the number of respondents was too small to perform a valid moderation analysis. In order to overcome this shortcoming, we created a new territorial unit by averaging the data from adjacent provinces. We refer to this new territorial unit as a 'macro-province'. Ultimately, we computed the share of fixed-term contracts and the unemployment rate for a total of 65 macro-provinces, using the Italian Labour Force Survey (LFS) 2017, a representative sample of the Italian population used for official Italian labour market statistics (ISTAT 2017b). The share of fixed-term contracts at the macro-provincial level in 2017 was calculated as the average over the four trimesters of the LFS. On average, 31,727 employed individuals were interviewed in each trimester. The unemployment rate at the macro-provincial level in 2017 was aggregated from the provincial-level measures available from the Italian National Institute of Statistics (ISTAT) and derived from the LFS 2017.

From the LFS, we also derived macro-provincial measures of the perception of employment uncertainty, providing an area-level counterpart to our micro-level indicators of perceived stability and resilience obtained from the Trustlab survey. We computed the share of individuals who answered 'No' to the question *Do you think it is likely that you will lose/stop your current job in the next six months?* (a marker of stability) and the share of individuals who answered 'Yes' to the question *Would you find it easy finding/starting a job similar to the one you are currently employed in?* (a marker of resilience).

Figure 2 displays the north-south gradients at the provincial level for the unemployment rate, incidence of fixed-term work arrangements, and perceived uncertainty with regard to stability and resilience in employment. These results are in line with the literature that shows differences between



**Figure 1** Distributions of main variables of interest: (a) Fertility intentions; (b) Stability perception; (c) Resilience perception; and (d) Risk attitude

*Note:* The sample includes employed individuals aged 18–50 who are married or cohabiting and living in Italy. The sample size is  $N = 521$  for panels (a), (b), and (c) and  $N = 519$  for panel (d).

*Source:* Authors' calculations from Trustlab 2017 survey data.

the north and south with respect to several socio-economic factors (Caltabiano et al. 2019; Innocenti et al. 2021). When introducing macro-context moderators into the regression models, we adjusted the estimates by clustering standard errors at the macro-provincial level of geographic detail (65 macro-provinces). This approach specifies that observations are independent across clusters (i.e. macro-provinces) but not within clusters.

## Results

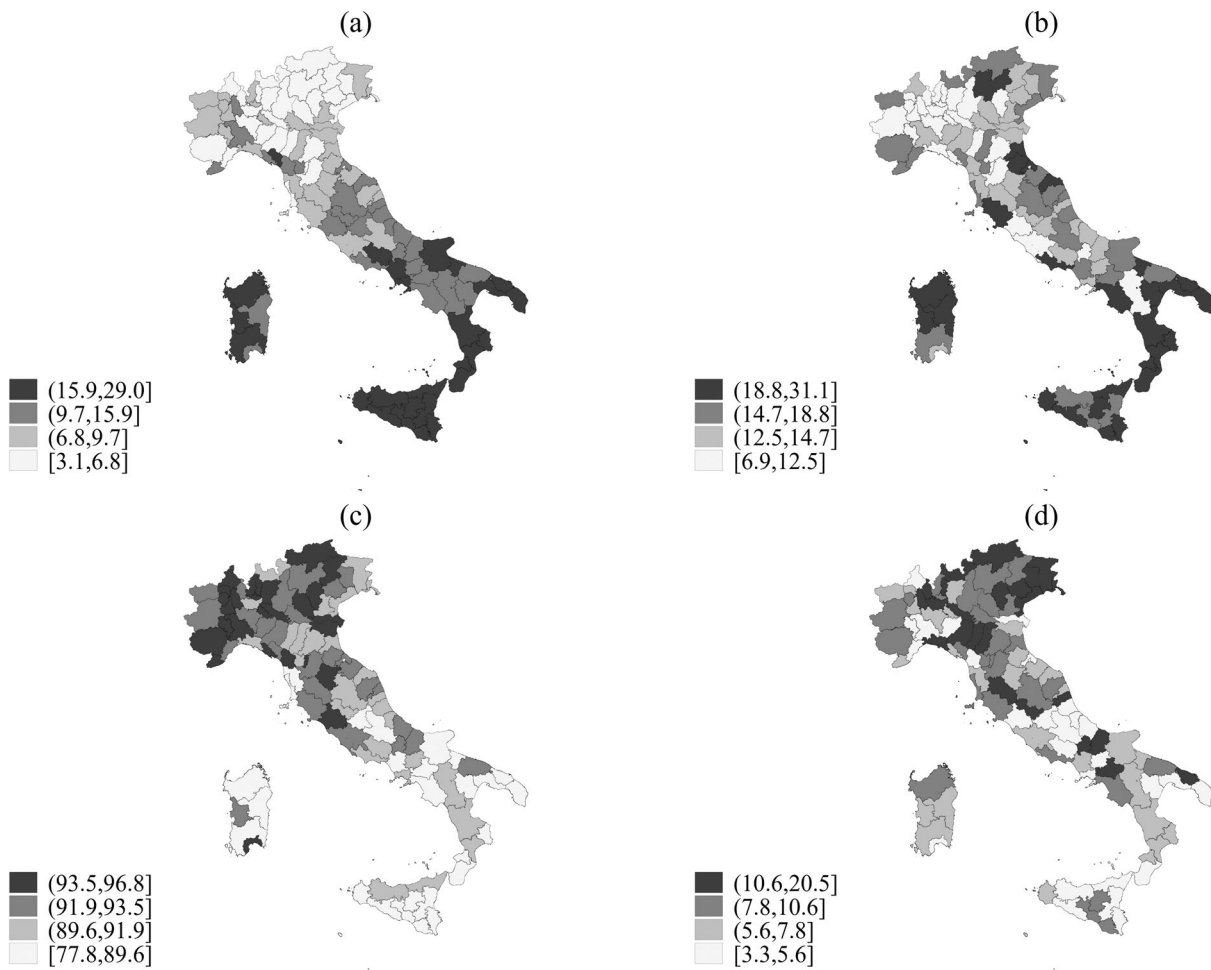
### *The roles of stability and resilience perception as determinants of fertility intentions*

Table 1 shows three different main specifications, each controlling for risk attitudes (the (b) models) or not (the (a) models). In model 1(a) the dependent variable (fertility intentions) is regressed on the stability perception indicator, whereas in model 2(a) it is regressed on the resilience perception indicator. In model 3(a) both indicators of employment uncertainty are included in the specification. Resilience perception (i.e. confidence in the ability to find a job after job loss) has the stronger influence on fertility intentions; stability perception (i.e. the self-rated likelihood of keeping a job) does not offer precise statistical estimates at conventional thresholds. When both indicators are included in the model

(Table 1, model 3(a)), resilience perception remains the more important predictor of fertility intentions (only being childless and age exert a stronger effect). Its magnitude, though, decreases slightly compared with the specification in model 2(a).

For Table 2 we calculated the Average Marginal Effects (AMEs) considering the richer specification of model 3(b) in Table 1, which includes risk attitudes (results discussed in the next subsection). Increasing the confidence of individuals in their ability to find a job in the case of job loss by one point on the perceived resilience scale increases the probability of definitely intending to have a (nother) child by 1.0 percentage point. At the same time, an increase of one unit on the ten-point scale of resilience perception produces, on average, a decrease of 1.3 percentage points in the probability of definitely not intending to have a(nother) child. If we consider the effect in terms of standard deviation changes (the standard deviation of the resilience perception variable is 2.76), a one standard deviation increase in the resilience perception variable produces a 2.76-percentage-point increase in the probability of definitely intending to have a child, and a 3.59-percentage-point decrease in the probability of definitely not intending to have a child. Table 2 also suggests that the AME of a change of one unit in stability perception on fertility intentions is non-significant at all levels of the dependent variable. In all, resilience perception is a





**Figure 2** Geographical distribution of area-level variables in Italy in 2017: (a) Unemployment rate; (b) Percentage of fixed-term contracts; (c) Area-level stability perception; and (d) Area-level resilience perception

*Notes:* The variable in panel (c) is calculated as the average percentage of employed individuals across the four trimesters of the 2017 LFS that answered *No* to the question *Do you think it is likely that you will lose/stop your current job in the next six months?* The variable in panel (d) is calculated as the average percentage of employed individuals across the four trimesters of the 2017 LFS that answered *Yes* to the question *Would you find it easy finding/starting a job similar to the one you are currently employed in?*

*Source:* Authors' calculations from ISTAT LFS data, 2017.

relevant predictor for fertility intentions, whereas stability perception seems to play a negligible role. These findings are robust to the use of different variable transformations (non-linear specifications and y-standardization of stability and resilience perception) and model specifications (linear probability models), as further described in the supplementary material.

The set of findings highlighted so far may be heterogeneous by sex. Table 3 shows the AMEs of the two indicators of employment uncertainty on fertility intentions, considering the baseline specification (model 3(b), Table 1) for the subsamples of men and women. While resilience perception has a positive influence on fertility intentions for men, this effect disappears for women. A one-point change in the

scale of resilience perception generates a 1.5-percentage-point increase in the probability of definitely intending to have a child for men (significant at the 5 per cent level), whereas for women the same change in resilience perception increases the probability of definitely intending to have a child by only 0.5 percentage points, and the effect found is not statistically significant at conventional levels. At the same time, stability perception is not significantly related to fertility intentions, irrespective of sex. This means that the overall effect of resilience perception is dominated by the effect we detect among men.

In the supplementary material we provide an extensive set of robustness checks. Our results remain unchanged after also controlling for

**Table 1** Odds ratios for determinants of intending to have a(nother) child in the next three years, ordered logistic regression models: employed individuals aged 18–50 who are married/cohabiting and living in Italy, 2017

Variables	Model 1		Model 2		Model 3	
	(a)	(b)	(a)	(b)	(a)	(b)
Stability perception	1.044 (0.034)	1.041 (0.035)	–	–	1.027 (0.034)	1.026 (0.035)
Resilience perception	–	–	1.102*** (0.036)	1.093*** (0.036)	1.097*** (0.036)	1.088** (0.036)
Risk attitudes	–	1.096** (0.048)	–	1.082* (0.048)	–	1.083* (0.048)
Age	1.847*** (0.253)	1.882*** (0.257)	1.846*** (0.251)	1.878*** (0.256)	1.843*** (0.250)	1.876*** (0.255)
Age squared	0.990*** (0.002)	0.989*** (0.002)	0.990*** (0.002)	0.990*** (0.002)	0.990*** (0.002)	0.990*** (0.002)
Household income (log)	1.087 (0.084)	1.088 (0.083)	1.079 (0.082)	1.081 (0.081)	1.072 (0.081)	1.074 (0.081)
Female	0.743 (0.145)	0.737 (0.143)	0.747 (0.142)	0.739 (0.140)	0.764 (0.149)	0.755 (0.146)
Tertiary educated	0.979 (0.189)	0.983 (0.192)	0.940 (0.183)	0.949 (0.186)	0.927 (0.181)	0.935 (0.185)
Self-employed	1.213 (0.255)	1.201 (0.257)	1.139 (0.231)	1.135 (0.234)	1.175 (0.245)	1.169 (0.248)
Childless	2.649*** (0.533)	2.648*** (0.536)	2.613*** (0.528)	2.605*** (0.528)	2.638*** (0.535)	2.632*** (0.537)
Observations	521	519	521	519	521	519
Region fixed effects	Yes	Yes	Yes	Yes	Yes	Yes

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

Notes: Odds ratios originate from ordered logistic regression. Robust standard errors shown in parentheses. Unlike the (a) models, the (b) models control for risk attitudes (which are missing for two respondents). See 'Method' section for full details of variables and model specifications.

Source: Authors' calculations from Trustlab 2017 survey data.

**Table 2** Average marginal effects of stability and resilience perception on each of the four levels of the dependent variable (fertility intention), through ordered logistic regression: employed individuals aged 18–50 who are married/cohabiting and living in Italy, 2017 ( $N = 519$ )

Variables	Definitely not = 1	Probably not = 2	Probably yes = 3	Definitely yes = 4
Stability perception	–0.004 (0.005)	–0.000 (0.001)	0.001 (0.002)	0.003 (0.004)
Resilience perception	–0.013*** (0.005)	–0.002** (0.000)	0.005** (0.002)	0.010** (0.004)

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

Notes: The coefficients represent the average marginal effects of the stability perception, and resilience perception variables when they are both included in the ordered logistic regression model, following model 3(b) in Table 1. The specification includes: controls for risk attitude; sex; a quadratic term for age; whether the respondent has a university qualification; (log) household income in the last twelve months; a dummy for childless respondents; and one for self-employed respondents. Regional fixed effects are included in the specification. Robust standard errors shown in parentheses.

Source: As for Table 1.

whether the respondent is the main earner in the household. Moreover, our results are not affected by the inclusion in the sample of unemployed or non-cohabiting respondents, who might be more affected by employment uncertainty (tables available on request).

### *The role of person-specific risk attitude*

For each model we tested whether our conclusions change after the inclusion of risk attitudes (models 1(b), 2(b), and 3(b) in Table 1). The socio-demographic controls maintain the expected signs.

**Table 3** Average marginal effects of stability and resilience perception on each of the four levels of the dependent variable (fertility intention), by sex, through ordered logistic regression: employed individuals aged 18–50 who are married/cohabiting and living in Italy, 2017

Variables	Definitely not = 1	Probably not = 2	Probably yes = 3	Definitely yes = 4
<i>Female subsample (N = 345)</i>				
Stability perception	−0.007 (0.006)	−0.001 (0.001)	0.002 (0.002)	0.006 (0.005)
Resilience perception	−0.005 (0.006)	−0.000 (0.001)	0.002 (0.002)	0.005 (0.005)
<i>Male subsample (N = 174)</i>				
Stability perception	0.001 (0.012)	0.000 (0.001)	−0.000 (0.005)	−0.001 (0.008)
Resilience perception	−0.022** (0.010)	−0.002 (0.001)	0.009** (0.004)	0.015** (0.007)

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

*Notes:* The coefficients represent the average marginal effects of the stability perception and resilience perception variables when they are both included in the ordered logistic regression model following model 3(b) in Table 1, after splitting the sample by sex. The specification includes: controls for risk attitude; a quadratic term for age; whether the respondent has a university qualification; (log) household income in the last twelve months; a dummy for childless respondents; and one for self-employed respondents. Regional fixed effects are included in the specification. Robust standard errors shown in parentheses.

*Source:* As for Table 1.

Childlessness and age are still among the most important predictors of fertility intentions.

Controlling our estimates for risk attitudes results in a slight reduction in the magnitude and significance of the coefficients of the two indicators of perceived employment uncertainty, but the predictive role of resilience perception is confirmed. We also considered the possibility that risk attitudes moderate the relationships between the two indicators of perceived employment uncertainty and fertility intentions (tables are available in the supplementary material). However, while risk attitudes seem to play a role in shifting fertility intentions, there is no evidence of a heterogeneous effect of the two indicators of employment uncertainty on fertility intentions that is dependent on risk attitudes.

### *The role of the economic context*

It might be argued that variability in individual (micro-level) responses is driven by differences in terms of perception of employment uncertainty in a given locality. In order to test this hypothesis, we computed two indicators of individual perception of employment uncertainty net of the average area-level perception of employment uncertainty: the variables ‘micro–macro stability perception’ and ‘micro–macro resilience perception’. These variables were calculated as the difference between the individual employment uncertainty variables and their area-level counterparts at the macro-provincial level. In order to make the two sets of variables

comparable, the ten-point scale individual-level indicators of stability perception and resilience perception were rescaled to be in the range 0–1. These newly constructed variables represent respondents’ expectations with regard to their employment compared with other people in their macro-province of residence. Results are displayed in models 1 and 2 of Table 4. This analysis suggests on one hand that assigning a higher probability than average to the likelihood of an individual keeping their job (micro–macro stability perception variable) does not significantly affect the probability of fertility intentions being stronger. On the other hand, being more confident than average in finding a job, in the case of job loss (micro–macro resilience perception variable), significantly increases the chances of fertility intentions being stronger. Not only is the significance of the coefficient of micro–macro resilience perception substantively larger than that of the coefficient of micro–macro stability perception, but also the magnitude. This result strengthens the robustness of our findings: resilience-related uncertainty is far more relevant than stability-related uncertainty in determining fertility intentions.

We then considered the possibility that local economic conditions moderate the relationship between employment uncertainty and fertility intentions. The unemployment rate and share of fixed-term contracts in the Italian macro-provinces were divided into tertiles and interacted with our two indicators of perceived employment uncertainty. The main effect of the area-level variables corresponds to their influence when the employment uncertainty

**Table 4** Regressing fertility intentions on resilience perception and stability perception using micro-level variables from Trustlab (model 1) and micro-level variables net of area-level ones (model 2): employed individuals aged 18–50 who are married/cohabiting and living in Italy, 2017

Variables	Model 1	Model 2
Stability perception	1.026 (0.035)	–
Resilience perception	1.088** (0.036)	–
Micro–macro stability perception	–	1.266 (0.447)
Micro–macro resilience perception	–	2.344** (0.825)
Risk attitudes	1.083* (0.048)	1.083* (0.052)
Age	1.876*** (0.255)	1.879*** (0.250)
Age squared	0.990*** (0.002)	0.990*** (0.002)
Household income (log)	1.074 (0.081)	1.074 (0.073)
Female	0.755 (0.146)	0.754 (0.140)
Tertiary educated	0.935 (0.185)	0.939 (0.195)
Self-employed	1.169 (0.248)	1.166 (0.256)
Childless	2.632*** (0.537)	2.631*** (0.491)
Observations	519	519
Region fixed effects	Yes	Yes

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

*Notes:* Odds ratios originate from ordered logistic regression. The micro–macro stability perception variable is calculated as the difference between the individual-level stability perception variable available in Trustlab and the macro-provincial-level stability perception variable calculated from the Italian LFS, 2017. The micro–macro resilience perception variable is calculated as the difference between the individual-level resilience perception variable available in Trustlab and the macro-provincial-level resilience perception variable calculated from the Italian LFS, 2017. Estimates of model 1 correspond to estimates of model 3(b) in Table 1. Robust standard errors, clustered at the macro-provincial-level in model 2, are shown in parentheses.

*Source:* Authors' calculations from Trustlab 2017 survey data and the Italian Labour Force Survey 2017.

indicators are set at their mean (demeaned). The main effect of the indicators of employment uncertainty refers to their influence when the area-level variables of objective employment uncertainty are set at their first (lowest) tertile. From Table 5 we can see that the relationship between the resilience perception variable and fertility intentions is not significantly moderated by the presence of unemployment or a high share of individuals employed through fixed-term contracts (models 1 and 2, Table 5). Stability perception, instead, is significantly moderated by the level of unemployment. The positive effect of stability perception on fertility intentions decreases when the respondent is living in a high-unemployment province, as shown by the odds ratio of the interaction between stability perception and the third unemployment tertile (model 1, Table 5) being significantly below one. The same

is true when we look at fixed-term contracts. A large share of fixed-term contracts in the macro-province of residence inverts the sign of the main effect of stability perception on fertility intentions, as shown by the odds ratio of the interaction between stability perception and the third tertile of fixed-term contracts (model 2, Table 5) also being below one.

The raw coefficients of the interaction terms are not straightforward to interpret due to the non-linearity of the ordered logit specification (Ai and Norton 2003; Karaca-Mandic et al. 2012). We plotted the AMEs of each indicator of employment uncertainty on fertility intentions, at different tertiles of unemployment (Figure 3) and shares of fixed-term contracts (Figure 4). The results are in line with the pattern observed in Table 5. The AMEs of resilience perception follow a similar pattern across different

**Table 5** Moderation effects of unemployment rate and percentage of fixed-term contracts at the macro-provincial level on the relationship between employment uncertainty and fertility intentions: employed individuals aged 18–50 who are married/cohabiting and living in Italy, 2017

Variables	Model 1	Model 2
Stability perception (demeaned)	1.093* (0.053)	1.074 (0.050)
Resilience perception (demeaned)	1.056 (0.058)	1.098*** (0.037)
<i>Unemployment rate (reference category = First tertile)</i>		
Second tertile unemployment rate	0.763 (0.230)	–
Third tertile unemployment rate	0.781 (0.270)	–
Stability perception × second tertile unemployment	0.994 (0.067)	–
Stability perception × third tertile unemployment	0.840** (0.059)	–
Resilience perception × second tertile unemployment	0.987 (0.068)	–
Resilience perception × third tertile unemployment	1.099 (0.114)	–
<i>Fixed-term contract percentage (reference category = First tertile)</i>		
Second tertile fixed-term contract percentage	–	0.355** (0.175)
Third tertile fixed-term contract percentage	–	0.237*** (0.117)
Stability perception × second tertile fixed-term contracts	–	1.005 (0.084)
Stability perception × third tertile fixed-term contracts	–	0.870** (0.061)
Resilience perception × second tertile fixed-term contracts	–	0.924 (0.064)
Resilience perception × third tertile fixed-term contracts	–	1.047 (0.087)
Observations	519	519
Regional fixed effects	Yes	Yes
Socio-demographic controls	Yes	Yes

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.10$ .

*Notes:* Odds ratios originate from ordered logistic regression. The specification includes: controls for risk attitude; sex; a quadratic term for age; whether the respondent has a university qualification; (log) household income in the last twelve months; a dummy for childless respondents; and one for self-employed respondents. The macro-provincial unemployment rate and the fixed-term contracts percentage are calculated by aggregating data from the Italian LFS, 2017. Robust standard errors, clustered at the macro-provincial level, are shown in parentheses.

*Source:* As for Table 4.

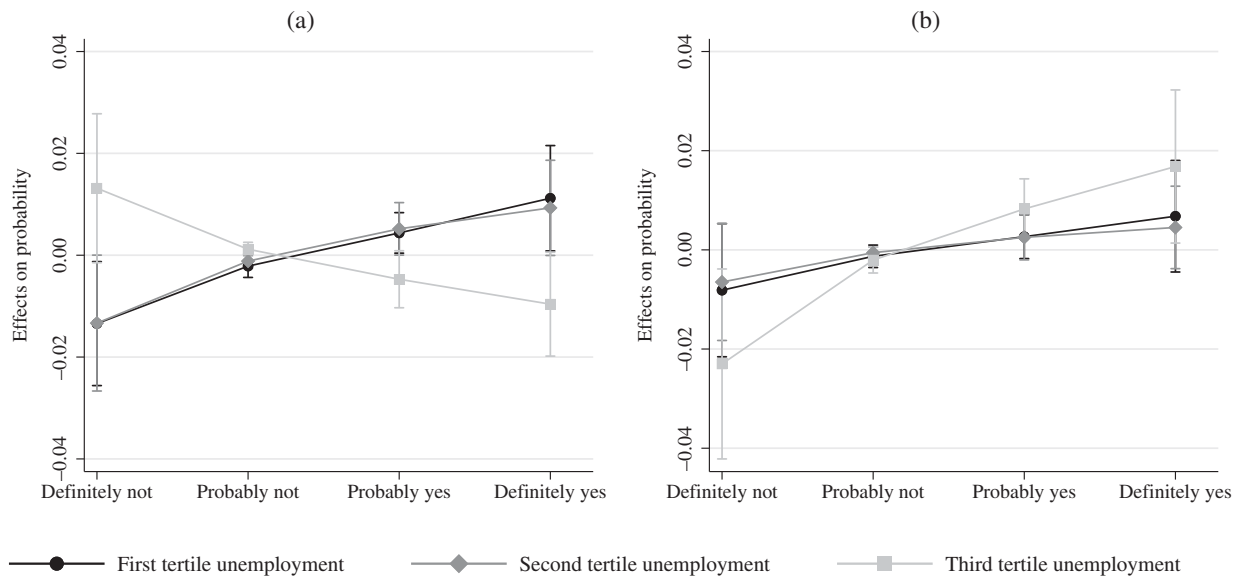
tertiles for unemployment and share of fixed-term contracts (Figures 3(b) and 4(b)). On the other hand, the trend of the AME of stability perception changes as the macroeconomic conditions in the macro-province of residence deteriorate (Figures 3(a) and 4(a)). Negative macroeconomic conditions—summarized by high unemployment and a high percentage of fixed-term contracts in certain macro-provinces—offset the positive relationship between stability perception and fertility intentions.

In the supplementary material, we also show that the association outlined so far between employment uncertainty and fertility intentions—that is, the

larger role of resilience perception compared with stability perception—is robust to the inclusion of area-level childcare availability in the model specification.

## Discussion

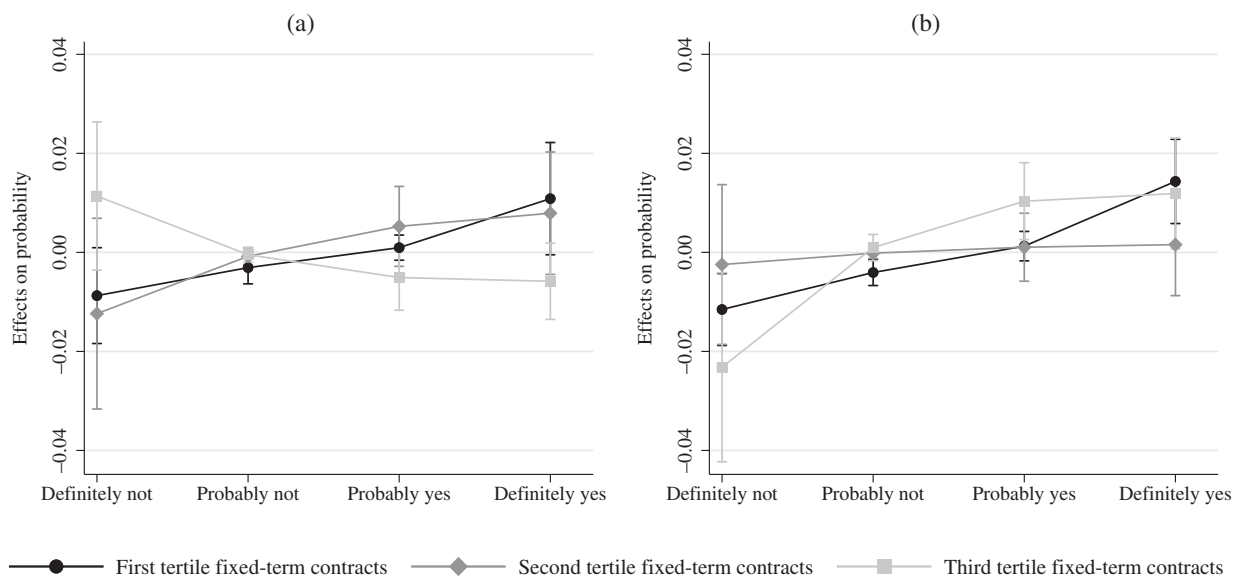
This paper contributes to the literature on the relationship between employment uncertainty and fertility intentions. We introduced resilience perception, defined as respondents' perceived uncertainty with regard to the ability to recover from negative



**Figure 3** Average marginal effects of (a) stability perception and (b) resilience perception on fertility intentions, by unemployment rate tertile

*Notes:* The estimation refers to the specification in Table 5, model 1, including 519 observations. Charts show point estimates and 90 per cent confidence intervals. The AMEs are calculated on the four levels of the dependent variable (fertility intentions), measured through the question *Do you intend to have a child or another child in the next three years?*, and answers range from ‘1’ (*definitely not*) to ‘4’ (*definitely yes*).

*Source:* As for Figure 1.



**Figure 4** Average marginal effects of (a) stability perception and (b) resilience perception on fertility intentions, by percentage of fixed-term contracts tertile

*Notes:* The estimation refers to the specification in Table 5, model 2, including 519 observations. Charts show point estimates and 90 per cent confidence intervals. The AMEs are calculated on the four levels of the dependent variable (fertility intentions), measured through the question *Do you intend to have a child or another child in the next three years?*, and answers range from ‘1’ (*definitely not*) to ‘4’ (*definitely yes*).

*Source:* As for Figure 1.

shocks, such as a job loss. In past research the underlying assumption has been that what matters for fertility intentions is uncertainty with regard to job

stability (e.g. Kreyenfeld 2009; Modena et al. 2013; Fahlén and Oláh 2018). However, this has neglected the importance of uncertainty with respect to

resilience to job loss. Ultimately, our contribution is threefold.

First, our results suggest that employment uncertainty is an important dimension in addressing fertility intentions, and that individuals' employment expectations are crucial. On one hand, perceived resilience to job loss seems of particular relevance for fertility planning, outperforming uncertainties related to the stability of current employment; so that only the 'fertility fundamentals'—being childless and age—exerted a stronger influence on fertility intentions. On the other hand, not only was the AME of stability perception on fertility intentions non-significant, but its magnitude for all levels of the dependent variable was close to zero. There is, therefore, an important distinction between perceived uncertainty of employment retention and resilience to possible lay-offs. What really enables individuals to state a preference for childbearing in the near future is the perception that even in the case of job loss they would be able to recover. Childbearing decisions are more responsive to resilience perception, possibly also because individuals anticipate that after a child is born 'nothing stays the same' (Anderson et al. 2002, p.354). In fact, childbearing increases uncertainty with regard to the evolution of any existing career path, both in terms of employment stability and in terms of earnings influencing total future family income.

Given the relevance of adopting a gendered lens in the study of the relationship between economic uncertainty and fertility intentions (Kreyenfeld 2009; Vignoli et al. 2012, 2020c; Hofmann and Hohmeyer 2013; Modena et al. 2013; Fahlén and Oláh 2018), we considered whether our results were heterogeneous for men and women. We found that the perception of being able to recover from job loss played a relevant role only for men, who may be expected to be the main pillar of the family even in the face of economically adverse events, whereas this may represent less of a concern for women. At the same time, perceived employment stability was of little relevance for the fertility decision-making of either men or women. Our results need to be considered with caution, however, given the limited sample size available. Perceived resilience to potential job loss is a dimension of uncertainty that deserves to be explored more in future research studying fertility intentions from a gender perspective.

Second, our indicators may have captured individuals' attitudes towards risk, rather than the operationalized dimensions of employment uncertainty. We separated the influence of risk from that of

uncertainty empirically, a task that has rarely been accomplished in previous research on fertility intentions despite being of high theoretical relevance (Knight 1921). This was addressed by including risk attitudes among the control variables. The observed significance and strength of association between perceived stability/resilience and fertility intentions remained similar after the introduction of risk in the model specification. Nonetheless, the inclusion of attitudes to risk lowered the magnitude of the coefficients of the indicators of employment uncertainty, suggesting that this is a relevant control that should be included in models assessing the effect of employment uncertainty on fertility intentions.

Third, we considered whether the macroeconomic context moderated the relationships between our two indicators for perceived employment uncertainty and fertility intentions. Importantly, the effect of the variable related to perceived individual resilience to job loss did not vary significantly across areas with quite different shares of fixed-term contracts, unemployment rates, or childcare availability. At the same time, the effect of perceived employment stability on fertility intentions *was* moderated by the share of fixed-term contracts and by the unemployment rate at the macro-provincial level. Respondents who live in economically disadvantaged areas and perceive a high degree of employment stability may be afraid to lose their position. Consequently, they are less inclined to intend to have a child, as this may raise their uncertainty in the future (Karabchuk 2018).

We concentrated here on the link between employment uncertainty and fertility *intentions*, but our approach is also applicable to fertility *behaviour*. Fertility intentions reflect the combined effect of desired fertility and objective constraints (Thomson and Brandreth 1995), and have generally been regarded as a fairly suitable predictor of actual behaviour at the individual level (Westoff and Ryder 1977; Schoen et al. 1999), provided that a time frame for the realization of the intention is set. Available evidence for Italy shows that negative fertility intentions are a powerful predictor of subsequent fertility behaviour, whereas positive fertility intentions tend to overestimate fertility realization to some extent (e.g. Rinesi et al. 2011; Mencarini et al. 2015). In our study, to gain a substantive interpretation of our findings, we showed that a one-point increase in the perceived resilience scale on average produced a 1.0-percentage-point increase in the probability of definitely intending to have a child. This corresponds to a 2.76-percentage-point increase in the probability of definitely intending to

have a child, for a one-standard-deviation increase in the resilience perception variable. However, fertility intentions may not fully translate into actual fertility. Régnier-Loilier and Vignoli (2011) found that in Italy around 62 per cent of those that definitely intended to have a child actually did so within a three-year time span. This suggests that a one-standard-deviation increase in resilience perception could produce a 1.71-percentage-point increase ( $0.0276 \times 0.62 = 0.0171$ ) in the probability of realized births three years later for those that definitely intend to have a child.

The present paper has important limitations. First, the limited sample size led to imprecise estimates. This is a key drawback, as it inhibits stratification of the analysis by age and parity, despite the fact that such distinctions have proven to be important in previous research (e.g. Hank and Kreyenfeld 2003; Billari et al. 2009). Second, by considering only individuals in a partnership we excluded economically disadvantaged individuals who might struggle to find a partner. Such exclusion may particularly affect men, whose probability of becoming part of a couple is significantly affected by their degree of employment uncertainty (Vignoli et al. 2016). Our estimates are thus conservative: including these men would inflate our estimates of the effect of resilience perception on fertility intentions further upward. In addition, we were unable to include information about partners, which has been found to be relevant in previous studies (Fahlén and Oláh 2018), and it was not possible to check whether respondents or their partners were already pregnant at the time of survey as this information was not collected. Finally, in order to obtain a sample of individuals that were qualified to respond to both the questions underlying our indicators of employment uncertainty, we focused exclusively on the employed. This selection might have biased the coefficients of our indicators of employment uncertainty, underestimating the relevance of stability perception. However, previous literature has shown that even among those in employment, job stability matters for fertility intentions. Permanent jobs facilitate the likelihood of having children, whereas fixed-term contracts inhibit childbearing (e.g. for Italy, see Vignoli et al. 2012, 2020c). In addition, a robustness check showed that including the unemployed and imputing the values of resilience and stability perception did not affect our conclusions significantly. Therefore, it is unlikely that the lack of evidence for a link between stability perception and fertility intentions is due to the choice of a subsample that comprised only employed individuals.

Our study advances the importance of considering the forward-looking nature of employment uncertainty to assess its influence on fertility intentions, net of person-specific heterogeneity in attitudes to risk and the macroeconomic condition of the area of residence. The notion of employment uncertainty includes distinct expectations towards the future (Vignoli et al. 2020b) that should be considered separately in order to understand fertility decision-making better. The concept of uncertainty with respect to resilience to negative employment shocks is crucial for research into fertility decisions.

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- 3 Authors are listed in alphabetical order. Members of the Population and Society Unit (UPS) of the University of Florence are gratefully acknowledged for their comments on a preliminary version of the paper.

## ORCID

Letizia Mencarini  <http://orcid.org/0000-0001-5070-6069>

Daniele Vignoli  <http://orcid.org/0000-0003-1227-5880>

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