

# Beyond Numbers: Uncertainty and Non-Numeric Fertility Preferences Among Migrants in Italy

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## Introduction

A significant share of women in countries with high fertility rates provide non-numeric or non-probabilistic answers when asked about their fertility preferences or intentions (Hayford & Agadjanian, 2015; Frye & Bachan, 2017). Scholars have traditionally interpreted such non-numeric responses—e.g., “don’t know” or “up to God”—as indications of fatalistic perspectives regarding fertility. Non-numeric fertility preferences decline most substantially during early stages of fertility transitions, with educational attainment and contraception knowledge as the strongest predictors of this change. This transformation is typically conceptualised as evidence that fertility decline occurs when childbearing decisions enter the “calculus of conscious choice” (Frye & Bachan, 2017). More recent research, however, offers a broader interpretive framework. Non-numeric responses like “I don’t know” or “up to God” may represent rational coping with uncertain futures, reflecting awareness of uncertainty and adaptive flexibility rather than simple fatalism. Uncertainty related to adult and child mortality as well as economic instability has been found to predict non-numeric responses (Hayford & Agadjanian, 2015; Frye & Bachan, 2017; Trinitapoli, 2023). While most studies on non-numeric fertility preferences focus on high-fertility countries, the link with uncertainty has made these preferences a relevant issue also in low-fertility contexts, where growing attention is being paid to how different sources of uncertainty shape fertility behaviour. However, only a limited number of studies in developed countries have examined non-numeric fertility preferences or intentions (Becker & Sutradhar, 2007; Ní Bhrolcháin & Beaujouan, 2012; Bernardi et al., 2015; Badolato et al., 2025). Moreover, existing research rarely distinguishes between categories of non-numeric responses—such as “missing,” “don’t know,” or “up to God”.

No attention has been paid so far to non-numeric/non-probabilistic fertility preferences or intentions among migrant populations originating from developing countries and residing in Europe—a gap that is particularly striking given that uncertainty is a defining feature of the migrant experience and that some groups come from contexts where this type of response is more prevalent. Non-numeric responses may be interpreted either as the result of socialisation processes, reflecting persisting adherence to fatalistic norms surrounding childbearing, or as rational expressions of uncertainty. In the case of migrants, moreover, uncertainty acquires specific forms—linked to legal status, economic instability, and family reunification—that differ markedly from those experienced by native populations. Focusing on migrants, this study aims to fill this gap by investigating the factors associated with non-numeric answers in short-term fertility intentions (within the next three years) among migrants residing in Italy. We distinguish between responses reflecting uncertainty (“I don’t know”) and those expressing fatalistic attitudes (“If God decides”/“Up to God”). Our central hypothesis is that non-numeric responses represent meaningful substantive answers rather than missing data, and that uncertainty- and fatalism-related responses are correlated with distinct socioeconomic characteristics and forms of rationality. Studies on non-numeric fertility responses among migrants have the potential to advance understanding of both the migration–fertility and the uncertainty–fertility nexuses.

## Data and Methods

We use data from the 2019 Regional Observatory for Integration and Multi-ethnicity (ORIM) to explore how economic, legal, and union uncertainties influence short-term fertility intentions. The target population consists

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of migrant men and women (excluding former EU15, North America, and Japan) aged 18 and above, with a final analytic sample of 1,988 respondents. Lombardy provides an ideal research setting. The region is home to over 10 million residents, with migrants accounting for approximately 12% of the population. Lombardy hosts the largest number of migrants in Italy, accounting for about one-quarter of the country's total migrant population, and is recognised as one of the European regions with the highest concentration of migrant residents. These characteristics, along with the availability of unique data collected within the ORIM programme, have led scholars to view Lombardy as an 'experimental laboratory' for studying migration patterns across Italy and Europe. Importantly, ORIM represents the only data source on migrants that, building on advances from the Trustlab surveys (Murtin et al., 2018; Aassve et al., 2018), explicitly measures perceived rather than observed economic uncertainty. ORIM is also the only source of data designed to include individuals with irregular legal status who are characterised by the highest level of legal status uncertainty.

Our dependent variable captures short-term childbearing intentions. Respondents were asked whether they planned to have (another) child within the next three years. We consider numeric-like probabilistic categories ranging from “definitely not” to “definitely yes” as reflecting an individualised and planned approach to fertility. As a key design assumption of this study, we analyse non-numeric responses separately, hypothesising that “don't know” denotes explicit uncertainty, often linked to structural or situational constraints rather than to cultural or religious norms. By contrast, “if it happens” or “if God wills” conveys a fatalistic, traditional, or religious framing of childbearing, rather than deliberate reproductive planning.

As main independent variables, we include a set of measures capturing different dimensions of uncertainty.

- *Legal status uncertainty* is categorised as: No legal status uncertainty (Italian citizenship, no residence permit required, or unlimited permit), medium legal status uncertainty (fixed-term residence permit, valid or in renewal), or high legal status uncertainty (asylum seeker, irregular status, or no response).
- *Objective economic uncertainty* is operationalised through a combination of employment status and job contract regularity (unemployed, inactive, regularly employed, irregularly employed, self-employed).
- *Subjective economic uncertainty* is captured through expectations about the family's economic condition over the next 12 months (worse, same, better).
- *Union uncertainty* combines civil status with cohabitation arrangements, encompassing those without partners: married and cohabiting, married but not cohabiting, in partnership and cohabiting, in partnership but not cohabiting, and single. For migrants, non-cohabitation often signifies not merely separate households but residence in different countries—a pattern particularly relevant for understanding transnational family dynamics.

Our control variables are: Gender, Age, Religion, Age at arrival, Education, Parity, Family of origin size and area of origin.

We employ stepwise multinomial logistic regression with clustered standard errors at the citizenship level to account for unobserved heterogeneity by country of origin.

### **Preliminary results**

Responses to the question “Do you intend to have a child/another child in the next three years?” show that only about one in five respondents (18.2%) express a clear positive fertility intention (probably yes or definitely yes), while a majority (57.1%) indicate negative intentions. Nearly one-quarter of migrants provide non-numeric answers.

**Table 1: Distribution of Short-term Fertility Intentions Among Migrants in Lombardy**

Do you intend to have a child/another child in the next three years?	Freq.	Percent	Cum.
Definitely no	876	44.2	44.2
Probably no	257	12.9	57.1
Probably yes	205	10.4	67.4
Definitely yes	154	7.8	75.2
If it happens/If God wills	156	7.9	83.1
Don't know	336	16.9	100.0

**Table 2: Relative risk ratios (RRRs) from multinomial logistic regressions predicting the likelihood of providing non-numeric fertility responses (“If God wills” and “Don’t know”) versus numeric-like probabilistic ones. Uncertainty-related variables.**

		God's will		Does not know	
		RRR	P> z	RRR	P> z
Legal status uncertainty	Ref. No uncertainty				
	Medium (Fixed term)	<b>2.100</b>	<b>0.000</b>	<b>1.360</b>	<b>0.000</b>
	Unstable (irregular/asylum seeker)	<b>2.411</b>	<b>0.000</b>	<b>1.351</b>	<b>0.018</b>
Couple uncertainty	Ref. Married and cohabiting				
	Married and not cohabiting	0.983	0.837	<b>1.556</b>	<b>0.000</b>
	Partnership and cohabiting	<b>0.203</b>	<b>0.000</b>	<b>0.655</b>	<b>0.000</b>
	Partnership and not cohabiting	<b>0.400</b>	<b>0.010</b>	1.694	0.158
	No partnership	0.513	0.190	1.451	0.431
Present job uncertainty	Ref. Secure job				
	Inactive	0.864	0.185	0.816	0.226
	Insecure job	0.946	0.696	0.932	0.650
Economic expectations (12 months ahead)	Ref. Better				
	Same	0.859	0.239	1.077	0.456
	Worst	0.758	0.171	0.953	0.818

*Legal status uncertainty* emerges as the strongest predictor of both types of non-numeric answers. Compared with respondents with stable legal status, those holding fixed-term permits show significantly higher odds of responding “If God wills” (RRR = 2.10,  $p < 0.001$ ) and “Don’t know” (RRR = 1.36,  $p < 0.001$ ). The effect is even stronger among asylum seekers or those with irregular status (RRR = 2.41 and 1.35, respectively). This suggests rational coping with disruptive factors related to migration. Surprisingly, we find no evidence of a relationship with *economic expectations*, suggesting that economic uncertainty might be correlated with more defined (negative) intentions. The relationship with *union uncertainty* proves complex and nuanced. Cohabitation is negatively correlated with “God's will” responses, possibly reflecting lower religiosity. Married but non-cohabiting couples show the highest uncertainty, potentially indicating transnational couple dynamics. Non-cohabiting couples demonstrate less fatalistic attitudes, suggesting different cultural acceptability and meanings of cohabitation arrangements.

**Table 3: Relative risk ratios (RRRs) from multinomial logistic regressions predicting the likelihood of providing non-numeric fertility responses (“If God wills” and “Don’t know”) versus numeric-like probabilistic ones. Control variables.**

		God's will		Does not know	
		RRR	P> z	RRR	P> z
Gender (ref. Man)	Woman (ref. Man)	1.024	0.537	<b>0.780</b>	<b>0.000</b>
Age		1.006	0.711	<b>0.961</b>	<b>0.000</b>
Age at arrival		0.992	0.340	<b>1.027</b>	<b>0.000</b>
Parity (ref. 0)	1	0.957	0.579	0.945	0.325
	2+	0.502	0.199	0.816	0.673
Religion (ref. Muslim)	Christian	<b>0.567</b>	<b>0.000</b>	0.913	0.321
	Buddhist, Sikh, Hindu	<b>0.175</b>	<b>0.000</b>	0.823	0.119
	Other or no religion	<b>0.376</b>	<b>0.000</b>	1.136	0.529
Education (ref. Primary)	Lower secondary	<b>0.879</b>	<b>0.018</b>	1.136	0.118
	Upper secondary	<b>0.745</b>	<b>0.006</b>	0.952	0.538
	Tertiary	<b>0.706</b>	<b>0.000</b>	0.932	0.511
Number of brothers/sisters		1.043	0.067	<b>0.953</b>	<b>0.047</b>
Area of origin (ref. Europe)	Asia	1.335	0.178	1.067	0.688
	Northern Africa	1.556	0.056	1.307	0.093
	<b>Sub-Saharan Africa</b>	<b>2.403</b>	<b>0.008</b>	1.345	0.335
	<b>Latin America</b>	<b>0.320</b>	<b>0.000</b>	0.777	0.082

Gender, age and age at migration patterns indicate that women are significantly less likely than men to provide “don’t know” responses, suggesting greater decisional clarity, while no gender difference emerges for “If God wills”. This finding is noteworthy given that fertility is often perceived as primarily a woman's domain, and may reflect gendered cultural and religious fatalistic framing or men's greater sensitivity to uncertainty. Older respondents are less likely to report uncertainty, pointing to more defined fertility intentions with age. Conversely, those who arrive at older ages are more uncertain. We also find no relationship with parity. Religion and education display strong and consistent associations with fatalistic responses. Compared with Muslims, Christians and adherents of Eastern religions (RRR = 0.18,  $p < 0.001$ ) show substantially lower odds of answering “If God wills”. This aligns with fertility being more often framed within religious norms as a matter of divine will rather than individual planning among muslim migrants. Similarly, higher education levels—especially tertiary—are negatively associated with fatalistic responses, reinforcing the idea that fatalism decreases with education. None of these factors, however, significantly predict “don’t know” answers.

## Conclusions

This research shows that non-numeric fertility preferences among migrants represent distinct rationalities rather than mere absence of preference. The prominence of legal rather than economic uncertainty in shaping these responses highlights the unique vulnerabilities of migrant populations and suggests that integration policies addressing legal status may have important implications for reproductive planning. The distinction between uncertainty and fatalistic responses reveals heterogeneous coping mechanisms within migrant communities, challenging uniform interpretations of non-numeric fertility preferences. Our findings reveal crucial relationships beyond uncertainty that merit further exploration, including gendered aspects in which men provide more uncertainty-related answers, the complex relationship between age and socialisation (which are not related to “up to God” answers), and the significant role of religion, particularly among Muslims. By treating non-numeric responses as substantive rather than missing data, we reveal how migrants navigate the complex intersection of structural constraints, cultural frameworks, and personal aspirations in their fertility intentions. These insights advance our understanding of how migration-specific uncertainties shape reproductive decision-making, moving beyond traditional frameworks that focus primarily on economic factors or cultural assimilation. The findings have important implications for both migration and fertility research, suggesting the need for more nuanced approaches to understanding reproductive decision-making in contexts of heightened uncertainty.

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