Reflections on Mismatches in the Fertility Preferences in Latin America

Reflexiones sobre las contradicciones en las preferencias de fecundidad en Latinoamérica*

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Abstract

This study aims to estimate and analyze four selected indicators of contradictions in female fertility preferences, which are called mismatches. Therefore, we seek to analyze the responses to the questions that women are asked regarding their ideal number of children, their current number of children, their future fertility intentions, and their use of contraceptive methods. Data from demographic and reproductive health surveys from fourteen countries in Latin America between 2006 and 2017 were used. An estimated occurrence of mismatches of 11 % was observed for the countries studied, and cases in which women were classified with a negative discrepancy and said that they do not want more children in the future prevailed. It can be inferred that despite the existence of several inconsistencies, the responses of Latin American women to questions about their fertility preferences are robust and very predictive.

Keywords

Reproductive Preferences
Contradictions
Data Quality
Latin America

Resumen

El objetivo de este estudio es estimar y analizar cuatro indicadores seleccionados de contradicciones con respecto a las preferencias de fecundidad femeninas, llamados desajustes. Este trabajo busca analizar las respuestas que dan las mujeres a las preguntas sobre el número ideal de hijos, el número de hijos nacidos vivos, las intenciones futuras de fecundidad y el uso de métodos anticonceptivos. Se utilizaron datos de encuestas demográficas y de salud reproductiva de catorce países de América Latina entre 2006 y 2017. Se observó un estimado de 11 % de ocurrencia de desajustes para los países estudiados, donde prevalecieron los casos en los que las mujeres se clasificaron con discrepancia negativa al decir que no quieren más hijos en el futuro. Se puede inferir que, a pesar de la existencia de varias inconsistencias, las respuestas de las mujeres latinoamericanas a las preguntas sobre preferencias de fecundidad son robustas y bastante predecibles.

Introduction

The fertility transition process in Latin America, which evidences a substantial decline in the number of children that women have, is a consequence of the changes in the attitude and reproductive preferences that have started to guide the behavior of individuals, especially women (Bongaarts & Hodgson, 2022; Bueno & Pardo, 2023) Therefore, understanding the changes in the reproductive preferences of individuals is one of the key determinants to appreciate the fertility transition and having more robust tools that allow us to foresee the consequences of such transitions in population dynamics.

Although there is no single definition of reproductive preferences, it is known that the definition involves several different dimensions and concepts, such as the ideal family size, the desired number of children, the intentions for children in the future and the fertility achieved. The fertility preferences, in some cases[1] used as a synonym for reproductive preferences, have been the subject of continuous study since the 1970s for their predictive validity of subsequent childbearing (Bankole and Westoff, 1998; Cleland et al., 2020; Hayford and Agadjanian, 2017; Morgan,

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1   Westoff, Charles F. 1991. "Reproductive preferences: A comparative view", DHS Comparative Studies No. 3. Columbia, MD: Macro International and Institute for Resource Development.

1982; Westoff, 1990; Westoff and Ryder, 1977). According to Van Peer (2002), ideal and desired family sizes are generally used as key information to estimate the contradictions in reproductive decisions. However, Thomson (2015) discusses various concepts related to family size, such as desired family size, family size intentions, family size expectations, and ideal family size. Desired family size represents the number of children parents would have without subjective or economic constraints. Family size intentions involve specific behaviors to achieve a particular number of births, while expectations encompass both desires and the likelihood of realizing them. Ideal family size, different from desires, may be influenced by social norms, especially in low-fertility contexts. She suggests that in very low or high fertility contexts, desired family size may not accurately reflect fertility demand due to normative influences. The ideal family size may be more influenced by the factors and norms established by society while intentions are influenced more by individual context and preferences.

Estimates of fertility preferences are mostly obtained through specific questions present in demographic surveys, which have changed over time as people's reproductive behavior has also changed. Therefore, de Silva (1991) comments that there are different types of questions in various surveys focused on this theme of fertility intentions; the author states that McClelland (1983) lists four common types of questions, including 'how many more', 'again', 'projective' and 'ordering', that differed in the ways the questions were asked in surveys (de Silva, 1991, p. 66-68).

In recent decades, many studies have been conducted to show the usefulness and limitations of measures of reproductive preferences in predicting fertility behavior. Despite the high usage of these indicators in demographic research, these indicators suffer much criticism. The controversies include, in particular, the validity of the questions and answers about the desired/ideal family size and future fertility intentions from which most indicators are normally derived (Westoff, 1990; Thomson, 1997; Morgan and King, 2001; Goldstein et al., 2003; Gauthier, 2007; Santelli et al., 2009).

The information about fertility preferences and desire for children is divided into two groups: retrospective and prospective. In the first group there is information about fertility desire during pregnancy, which comes from the question "When you became pregnant with [name], had you

wanted to get pregnant at that time?" and, if the answer was no, "Did you want to have a child later or did you not want (any more) children?" Also, you can learn about the idealized number of children, where you ask "If you could go back to the time you had no children and you could choose exactly the number of children you would have in your entire life, how many would that be?". Due to their retrospective nature, both questions have a great ex-post rationalization effect in favor of desired children. Furthermore, the latter also has the implicit assumption of constant fertility desires (regardless of the sexual composition of living children and changes in material conditions, among other things). These two important effects may compromise the validity of these two questions. On the other hand, from the prospective approach, one can learn the desire for children in the future by asking "Would you like to have (one/other) child(ren) or would you prefer not to have (more) children?" to infer the status of subsequent births. Answers to questions about future fertility predictions have been shown to be more reliable than answers to retrospective questions. The main disadvantage of the direct prospective approach is the requirement for longitudinal observation of the same women, preferably over a short observation period to ensure the stability of individual preferences (Casterline and El-Zeini, 2007, 2022; Clelland et al., 2020; Morgan, 1981; Morgan and Rackin, 2010).

Ní Bhrolcháin and Beaujouan (2019) argue that all of these questions have some degree of imprecision as they cannot genuinely and rationally capture people's fertility preferences, leading to inaccurate estimates. This is because, according to the authors, fertility preferences are not fixed; on the contrary, they are quite flexible and vary throughout the life course of individuals, in addition to being influenced by the context in which these individuals exist, for example, economic conditions, marital status, gender context and public services of children care as shown by Trinitapoli and Yeatman (2018).

According to studies on reproductive contradictions, several factors can influence the mismatch between the number of children desired and those with future intentions to have children, which is the main source of the contradictions related to fertility preferences. One of the first studies that indicated the occurrence of these inconsistencies was the study by Palmore and Concepcion (1981) using the World Fertility Survey (WFS) for Indonesia. The authors showed that 1 % of Indonesian women responded at the time to wanting more children in the future even though they

already had more children born alive than what had been declared to be ideal. However, 9 % answered that they would not like to have more children, even though they had not yet reached their ideal fertility at the time of the survey.

More recently, the study by Kalamar and Hindim (2015), which used data from the Demographic Health Surveys (DHS) for 38 developing countries, found contradictory answers to questions about fertility preferences between men and women. The authors found a large variation in the estimates, depending on the type of contradiction and the country analyzed. The country with the lowest percentage of contradiction was Albania, with less than 1 %; the largest was Armenia, with almost 30 % inconsistency. The prevalence of contradictory responses was similar between men and women. The rate of mismatch 1, referring to the discrepancy between not wanting more children without reaching the ideal fertility, was greater than the rate of mismatch 2, in which respondents declared wanting more children, even having already reached the number declared ideal, for all the cases analyzed.

That is, several problems and biases embedded in the answers given to such questions are known, generating inconsistencies, known as mismatches. In this paper, mismatch refers to the inconsistency between the information provided about fertility preferences (whether retrospective or prospective) and the fertility achieved or the use of contraceptive method adopted. The detection of behavior contrary to what is expected considering the declared fertility preference produces mismatch, which adds up to four deviant behaviors, which will be detailed in the next section.

The occurrence of these inconsistencies is due to several factors, among which gender relations and the participation of women in the labor market (Roy et al., 2008), economic moment and employment situation (Philipov et al., 2009; Trinitapoli and Yeatman, 2018), and the replacement effect of infant mortality and sex preference (Yeatman et al., 2013) stand out. According to Liefbroer (2009), revisions of the intention of fertility below the number initially desired can be made intentionally by individuals themselves to minimize the negative consequences of not reaching the objectives initially intended for fertility. This occurs because, as highlighted by Iacovou and Tavares (2011), intentions change over time, due to unmet needs for children or the age of the individuals interviewed, which impact the dynamic nature of fertility intentions throughout life.

Analyses of the quality of information on declared fertility desires and intentions or expectations of family size and achieved fertility have already been conducted in developed and developing countries. They show, in general, that the fertility preferences collected in the surveys do not fully correspond to future fertility results at the individual and aggregate levels but provide additional information on the future fertility course (Bankole, 1995; Bongaarts, 1992; Kodzi et al., 2010). In other words, understanding incompatibilities clarifies the predictive power of reproductive preferences, helping to think in advance about the future of fertility.

However, despite the relevance, the theme of mismatch on the reproductive preferences hasn't been explored in the Latin American context. Additionally, fertility in the region is quite low, which is the context where reproductive preferences have gained relevance (Hu and Chiang, 2021). Furthermore, although there are some studies on this topic (Kalamar and Hindim, 2015), there is no study addressing the inaccuracies estimated on this approach, where the mismatch between the fertility preference and the behavior of contraceptive methods use was included. Although studies have found a small relationship between the use of contraception and reproductive preferences in developing countries (Agadjanian, 2005; Higgins et al., 2012; Santelli et al., 2009), other studies have demonstrated the importance of using contraception to achieve desired fertility in developing countries, where the authors speculated that the strength of the association is related to how well preferences are implemented by contraceptive use (Ahinkorah et al., 2021; Babalola et al., 2017; Cleland et al., 2020; UNFPA, 2022).

In this sense, this work intends to study the possible inconsistencies in the fertility preferences reported by women in different Latin American countries, seeking to better understand the quality of information in these contexts. Therefore, this study's objective is to estimate and analyze four selected indicators of contradictions in female reproductive preferences, called mismatches, to verify the level of the inconsistencies committed by Latin American women aged 15 to 49 years. Therefore, an attempt is made to analyze the responses that women give to questions about the ideal number of children, the current number of children, the future fertility intentions, and the use of contraceptive methods present in DHS type surveys. This will be done for as many countries as possible and considering the most recent survey conducted. With this, it will be possible to verify the different inconsistencies in the answers to questions regarding

reproductive intentions/preferences and the differences and similarities between the countries analyzed. More abstractly, this study discusses the accuracy of women's responses to questions about their reproductive preferences. High rates of contradiction can lead to the conclusion that the answers would not meet the expected standard of the social norm, having little predictability regarding the behavior itself. In contrast, low rates would indicate that responses follow the social pattern, with a high chance of actually predicting future fertility behavior.

In this sense, what are the inconsistencies in the comparison of fertility preference responses and achieved fertility and the use of contraception among Latin American women? Do these incompatibilities differ according to the woman's age? How do these mismatches relate to the predictability of future fertility behavior in the region?

The study will include the estimated determination of four incompatibility indicators, according to the different possibilities of inconsistency for specific issues. It also intends to verify the distribution of these inconsistencies by women's age groups. Thus, it is believed that by observing the contradictions between the number of desired children, the current number of children, future fertility intentions, and the use of contraceptive methods, it will be possible to examine whether what occurs in other countries, described in the literature, also applies to the case of Latin America.

Methodology

Database and countries analyzed

Data from various surveys available for countries were used, namely, the DHS, the Reproductive Health Survey (RHS), and national surveys on demography and reproductive health, conducted by local research institutes, which had information on the topic of fertility preferences. Data from the most recent editions and surveys available for all Latin American countries, which include data from 2006 to 2015, were used. Unfortunately, as there was no standardization in the years of these surveys' conductions, comparisons between countries were not always robust due to the time difference in calculating the indicators. Even so, it is believed that the lack of availability of more recent data in some countries did not cause major compromises to the analyses, which could render the study unfeasible.

The 14 countries analyzed in this article were the following: Brazil, Bolivia, Colombia, Ecuador, Guatemala, Guyana, Haiti, Honduras, Mexico, Nicaragua, Paraguay, Peru, Dominican Republic and Uruguay. Table 1 shows the list of selected countries, the survey used as data source, the reference year and the sample size in each country.

During the data processing stage, some observations were excluded from the databases. From all fourteen databases analyzed, three included women aged outside the reproductive period (ages between 15 until 49 years old), and three others were missing information, missing data or NA (Not Aplicable) in the variables corresponding to age. In addition, in

Table 1. Countries studied, data sources, year and sample.

Country	Data source	Year	Initial sample	Final sample	Without sample
Bolivia	(DHS) Demographic Health Surveys	2008	16,939	16,672	267
Brazil	(PNDS) National Demographic Health Surveys	2006	15,575	15,393	182
Colombia	(DHS) Demographic Health Surveys	2015	38,718	35,798	2,920
Ecuador	(ENSANUT) National Nutrition and Health Surveys	2012	18,213	17,474	739
Guatemala	(DHS) Demographic Health Surveys	2014	25,914	25,792	122
Guyana	(DHS) Demographic Health Surveys	2009	4,996	4,830	166
Haiti	(DHS) Demographic Health Surveys	2017	15,513	14,354	1,159
Honduras	(DHS) Demographic Health Surveys	2012	22,757	22,471	286
Mexico	(ENADID) National Demographic Dynamic Surveys	2014	98,711	89,178	9,533
Nicaragua	(RHS) Reproductive Health Survey	2007	19,140	12,598	6,542
Paraguay	(ENDSSR) National Demographic Health, Sexual and Reproductive Surveys	2008	6,540	6,106	434
Peru	(ENDES) National Demographic Health and Familiar Survey	2016	34,002	33,121	881
Dominican Republic	(DHS) Demographic Health Surveys	2013	9,372	9,355	17
Uruguay	(ENCOR) National Fertility and Reproductive Behavior Survey	2015	3,487	1,811	1,676

Note: In Paraguay, information was collected from women aged 15 to 44 years; in Uruguay, information was collected from women aged 15 to 45.

Source: Own elaboration based on the microdata of each survey (DHS, RHS and national surveys).

thirteen countries, the interviewees gave nonnumerical answers ("up to God" or "God's will") to the variables that questioned the ideal number of children; in seven countries, the presence of missing data in these same variables was noted. Both nonnumerical responses and missing data were excluded, given the low number of cases and the necessity of this information to estimate the mismatches, considering that the ideal number of children is used to calculate the discrepancies. The women who presented missing data, did not answer or did not know how to answer any of the questions presented were removed from the sample.

Measurement of mismatches

The work of Kalamar and Hindin (2015) was used as a reference for the measurement of mismatches. To determine if a woman commits one of the mismatches, it is necessary to calculate the fertility discrepancy through the difference between the number of surviving children (calculated by the difference between children born alive and dead children plus one if the woman is pregnant)[2] and the number of children desired (estimated through the question on the ideal number of children). Figure 1 shows the main steps for measuring the mismatches.

If the number of surviving children is lower than the number of children desired, that is, the difference between them is less than zero, then there is a negative discrepancy; in these cases, if the woman responds that she no longer wishes to have children, there is a mismatch 1. This is because it would be expected that this woman, who has not reached her desired fertility, would answer that she would still like to have children. Suppose the discrepancy is null (that is, the woman has exactly the desired number of children) and the woman responds that she would like to have (more) children. In that case, there is a mismatch 2 since it would be expected that this woman would not want to have other children once she had the desired number of children. In cases where the discrepancy is positive (that is, the number of surviving children is higher than the number of desired children) and the woman replies that she would still like to have children, there is a mismatch 3 since it would be expected that a woman who has surpassed her desired fertility does not want to have more children.

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2   The number of surviving children was to reduce the impact of child mortality, post-hoc rationalization, and household bargaining (Trinitapoli and Yeatman, 2018).

We also considered the inconsistency related to the use of contraceptive methods and a woman's fertility intention, that is, a mismatch 4. In this case, women are faced with the situation in which they would have fewer children than the ideal number of children, and they answer as to wanting to have more children with certainty or total certainty at the moment (in the figure represented by "now"; however, they are using modern contraceptive methods. This is contradictory because what is expected of women who have not yet reached the ideal number of children and answer that they want to have children at the moment is that they would not use modern contraception.[3]

The other cases in which women who do not have a discrepancy or have a positive discrepancy respond that they would not like to have children and do not use modern contraception were not considered mismatches, although women in this group were expected to use contraception when they no longer wish to have children. This group was labeled as having a possible contraceptive unmet need, in which the lack of use of modern contraception would possibly be associated with a lack of access to family planning methods. This group involves another important debate in the area of sexual and reproductive health; however, because it requires greater methodological accuracy for its estimation, it will not be the focus of the analysis of this article.

The Statistical Package for Social Sciences (SPSS) was used for the data treatment, calculation and analysis of the indicators. The weighting variables for each of the datasets were included so that the data were representative of the countries analyzed. Descriptive analyses were used and for some indicators testing for statistical significance was established to assess the association between mismatches and Total Fertility Rate (TFR).

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3   The databases differ in their inquiries regarding intentions toward having children, both in responses to questions about desires to have children on future (wanting children, opting to wait, or choosing not to have any) and in the categories of responses regarding the timing of childbearing. Some studies report responses such as wanting to wait until fully prepared, being unsure, having not yet considered it, or not desiring children at all. In these cases, the data used were from women who express complete confidence in their intentions and subsequently examine the timing of their childbearing decisions. Responses to this question also vary, including preferences to have immediately, within the current year, not waiting. These formats were used as proxies to indicate a woman's intention to have a child at the time of the survey.

Figure 1. Scheme for measuring mismatches and the need for contraception.
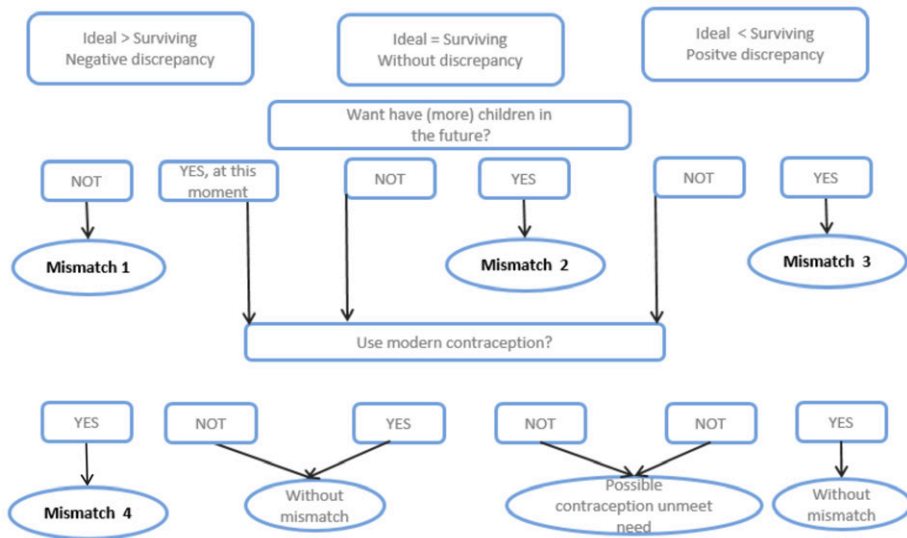
Source: Own elaboration from Kalamar and Hindin (2015).

Issues related to individual wishes and plans, which directly influence people's lives, are very susceptible to changes over time. Age has been crucial in the observed changes in individuals' fertility preferences. When young people make decisions about how many children they idealize or intend to have they base them on their preferences at that moment, without taking into account all the effects that their lives may suffer throughout the life cycle, such as finding a partner, experiences with (parenting)maternity, infertility, sterilization, among others. Over time and age, the experiences gained will affect the ideal number of children and the intention to have children in the future, for more or less (Mills et al., 2011). According to Iacovou and Tavares (2011), reproductive intentions can vary greatly throughout women's lives, since women can make different reviews and adjustments to their intentions over time. These tend to be reduced as the period advances. In this sense, this article analyzed the mismatch by age, which was divided into seven quinquennial age groups: 15 to 19 years, 20 to 24 years, 25 to 29 years, 30 to 34 years, 35 to 39 years, 40 to 44 years and 45 to 49 years. Additionally, the TFR was analyzed, obtained from the reports of DHS, RHS or national surveys.

Results and discussions

The occurrence of a low percentage of mismatches was generally observed. The sum of all mismatches for the group of countries analyzed was, on average, 10.9 %, as seen in Table 2. Peru and Uruguay had the highest percentages of inconsistencies (15.7 and 15.1 %, respectively), and Nicaragua and Mexico had the lowest percentages (5.3 and 6.8 %, respectively). When analyzing the types of mismatches, it is noted that for all the countries examined, the highest percentage of inconsistencies occurs in mismatch 1, followed by mismatch 2, 3 and 4. That is, there is a great contribution from mismatch 1s. Similar results were found in the study by Kalamar and Hindin (2015) in which the most contradictions were also found for this type of mismatch. The fact that the highest percentage is verified for mismatch 1 can be explained by the instability in fertility intentions, as already mentioned in the literature, given that the ideal number of children is reconsidered by the interviewees during the life cycle, in the context of economic and social limitations due to the ex-post rationalization effect.

Samosir et al. (2018) discuss some situations that may interfere with the responses given by women about fertility preferences, thus affecting the possible contradictions committed. These situations involve, for example, cases of the husband not wanting to have more children and the wife responding to not wanting to have more children in the future, although she had not yet reached her ideal fertility, thus conditioning her desire to that of her partner. Alternatively, due to the large time interval since the birth of her last child, the woman could conclude that it is not appropriate to have another child, even if she has not yet reached her ideal fertility (Samosir et al., 2018). These are some examples of factors that influence the reproductive context of women, which does not always reflect the desires and intentions initially determined, ultimately leading to a lack of correspondence between what women answer in the questionnaires and their reproductive realities. Thus, it is believed that the total share of Latin American women who presented mismatch 1– 11 % – corresponds, in fact, to only a part of this population. This percentage reflects only those women who, consciously, failed to implement their reproductive preferences; however, there is an expressive contingent of those who end up rationalizing their reproductive context and thus answer questions according to their realities and not according to their

wishes and intentions. Thus, these women would not be counted within mismatch 1 since, a priori, there would be no contradiction between the fertility achieved and the answers to questions about future intentions, underestimating the value of this indicator. However, in longitudinal studies, it would be possible to monitor these women throughout their reproductive cycles; certainly, the existence of mismatches for many of them would be captured as it would be possible to isolate the effect of rationalizing their responses.

Table 2 also shows that the mismatch 1, that is, the contradictions committed by women with a negative discrepancy and who say they do not wish to have (more) children, occurred at an average of 7.8 % of cases. Uruguay and Guyana had the highest percentages of mismatch 1, approximately 12 %; the lowest percentages occurred for Nicaragua and Mexico (approximately 4 %). Mismatch 2 occurred at an average of 1.5 % of the time, and the rates were higher for Ecuador (2.5 %). Mismatch 3

Table 2. Percentages of mismatch 1, 2, 3, and 4 and the total and possible need for contraception among women aged 15 to 49, Latin America 2006-2017.

| Country	Types of mismatches				Total mismatches	Without mismatches*	Possible contraception unmeet need	Other situation**
	1	2	3	4				
Mexico	4.2	2.1	0.3	0.3	6.8	22.7	10.3	60.2
Bolivia	9.3	2.1	1.6	0.1	13.2	15.8	45.1	25.9
Colombia	6.4	1.6	1.4	0.7	10.1	17.1	13.9	58.8
Guatemala	7.6	1	0.8	0	9.5	5.9	12.2	72.4
Honduras	8.3	1.5	1.6	0.4	11.8	11.5	10.8	65.9
Dominican Republic	6.7	1.2	1.1	0.8	9.8	10.1	5.6	74.5
Haiti	9.2	1	0.8	0.3	11.2	14	17.5	57.3
Guyana	11.8	1.6	0.9	0.6	14.9	16.8	17	51.4
Brazil	7.7	1.3	0.3	1.3	10.7	17.3	5.1	66.9
Ecuador	6.6	2.5	1.4	0.1	10.7	17.1	13.4	58.8
Nicaragua	4.1	0.6	0.3	0.3	5.3	11	6.2	77.5
Paraguay	5.2	1.3	0.8	0.3	7.6	15.1	5.2	72.1
Peru	9.9	2.2	1.4	2.2	15.7	19.2	17.2	48.0
Uruguay	11.9	1.2	0.7	1.3	15.1	29.4	4.2	51.3
Total	**7.8**	**1.5**	**1**	**0.6**	**10.9**	**15.9**	**13.1**	**60.1**

*Notes: *These situations include cases where women's responses could generate mismatches but were not confirmed. **These situations include the cases in which women's responses could not generate mismatches and thus were not analyzed.*

Source: DHS, RHS and national surveys.

occurred on average for 1 % of women, and the rates were greater for Bolivia and Honduras (1.6 %). Finally, mismatch 4, which occurred at an average rate of 0.6 %, were higher for Peru (2.6 %).

Figure 2 shows the average distribution of the four types of mismatches according to the age of the woman for the group of countries analyzed. It is noted that, in general, mismatch 2, 3, and 4 follow distribution trends that are similar for the age groups, with their greatest occurrence among women aged 25 to 34, that is, at the peak of their reproductive lives.

Figure 2. Percentage distribution of mismatches according to women's age group, Latin America 2006-2017.
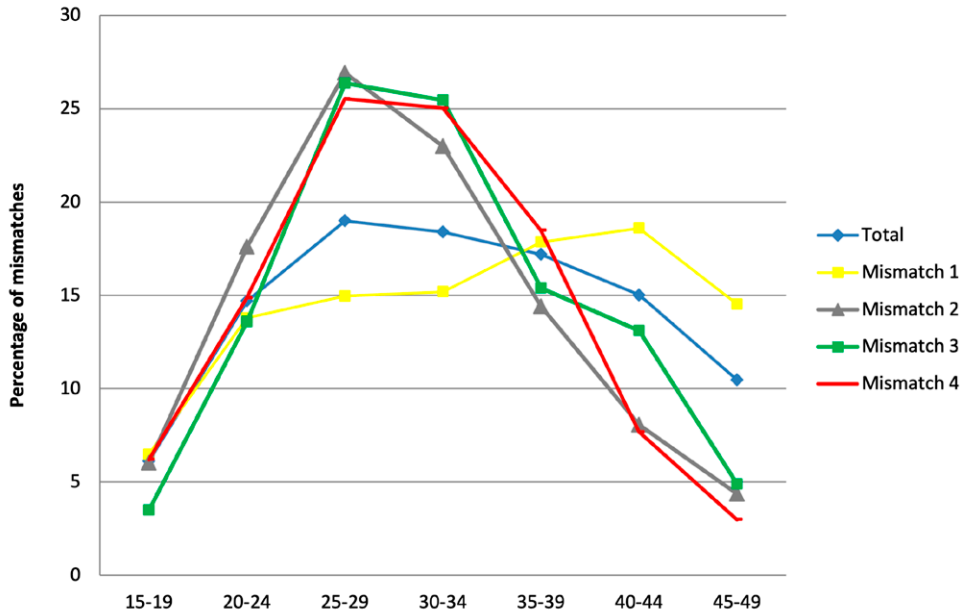
Source: DHS, RHS and national surveys.

When analyzing the age distribution of occurrence of mismatches in each of the countries, for mismatch 2, Brazil differs from the standard with higher occurrence in the 15 to 19 age group. Uruguay also had a different pattern with a higher percentage in the 40-44 age group. Mexico, Haiti and Peru also seem to tend to concentrate later. Concerning mismatch 3, all countries, except Uruguay, follow the same pattern. The age distribution of the occurrence of mismatch 4 is very similar among the

countries analyzed. Mismatch 1, however, has a different pattern in which the rate increases according to the woman's age and the mismatches are more common among women aged 35 and over. The increase in this mismatch with age may also be related to older generations' higher ideals of children, as discussed by Balbo and Mills (2011). For them, the family size experienced by the individual is normally legitimized and are often seen as hegemonic, normal and a reference for them to plan their own ideal family size, or ideal number of children. Paraguay and Uruguay have an even more concentrated pattern at advanced ages. The case of Bolivia, in which the percentages follow a pattern very similar to the other mismatches, being high in the 20 to 24 years old, stands out (See the Appendix A).

When analyzing the TFR observed in the countries and the occurrence of mismatches (Table 3), we have a very different scenario. By subdividing countries according to TFR levels (up to 2, from 2.1 to 2.5, from 2.5 to 3 and 3 or more children per woman), it is noted that the percentage of countries with a fertility rate lower than 2.1 children per woman are those that had the highest average occurrence of mismatches; the case of Uruguay, mainly due to the occurrence of mismatch 1, stands out. The women are "choosing" not to have children despite having an ideal number of children that may be above replacement level in these countries. This can point out two ways: it can represent a problem with the indicator or actually the unrealized fertility, which are conected with many factors. However, some countries have atypical behavior, such as Peru, Guyana and Bolivia, which, despite having higher fertility rates, have a high percentage of mismatches (Table 3). However, in some cases, it is observed that countries with fertility close to or above 3 children per woman were those with the lowest percentage of mismatches. For all the analyzed mismatches, Guatemala, Nicaragua and Paraguay are examples; these three countries are always among the 50 % of the countries with the lowest values. This is a curious fact as it would be expected that the occurrence of mismatches would be clearer about fertility levels. In the case of the last three countries mentioned, the fact that they are still quite traditional in their customs and values, and with a large part of the population belonging to the lower socioeconomic and educational levels, may influence the lesser autonomy of women in declaring their real intentions and reproductive desires, causing a low occurrence of mismatches. However, it is necessary to better understand the reality of these countries to verify this hypothesis.

Table 3. Percentage of total mismatches and total fertility
rate by country, Latin America 2006-2017.

| Country	Total mismatch	Median mismatch	TFR
Bolivia	13.2		3.4
Guatemala	9.5	11.3	3.2
Haiti	11.2		3.1
Guyana	14.9		2.7
Nicaragua	5.3		2.7
Honduras	11.8	11.7	2.7
Peru	15.7		2.6
Ecuador	10.7		2.6
Dominican Republic	9.8		2.5
Paraguay	7.6	8.1	2.5
Mexico	6.8		2.2
Uruguay	15.1		2.0
Colombia	10.1	12.0	1.9
Brazil	10.7		1.9

Source: DHS, RHS and national surveys.

To extend the information given by this analysis, Figure 3 shows the relationship between the occurrence of different types of contradictions and the TFR. The occurrence of the total mismatches follows the trend of the mismatch 1 relationship since this is the one with the highest prevalence. The contradiction that involves women who have not yet reached their ideal fertility and respond that they do not want more children, that is, mismatch 1, has practically no relationship with the TFR. The same occurs when mismatch 2 is observed, which concerns those women who have exactly the number of children they would like and respond that they want more children. Mismatch 3, which concerns women who have more children than ideal and say they would still like to have children, has a positive relationship with the TFR; that is, the percentage of women who have already exceeded their ideal number of children and say they still want more children is more frequent in countries with higher fertility. Finally, mismatch 4, which involves those women who have not yet reached their ideal fertility, want to have children at the moment and use modern contraceptive methods, is the one that has been shown to be most related to the TFR (explains 24 %) and is observed more frequently in countries with a lower TFR.

The data on the occurrence of mismatches are closely related to the context in which the women exist. This is the case, for example, in Uruguay, which presented the highest percentage of mismatch 1 among all the countries analyzed. Uruguay is a country with fertility below the replacement level and with an increasingly strong tendency to delay the start of reproduction. Thus, studies show that the percentage of women who end the reproductive period without children or with only one child is growing in the country, even though the ideal number of children in Uruguayan society is two children (Fernández Soto et al., 2020). This means that the number of Uruguayans who have fewer children than what is considered ideal is growing. In addition, there is a set of factors conditioning this decision: difficulty in reconciling work life with caring for children, the absence of government policies that assist mothers in caring for their children, experience with the first child and the desire for more free time to take care of themselves (Fernández Soto et al., 2020, p. 194). Given this context, it is understandable that there is a high percentage of women who commit mismatch 1 in the country as this phenomenon is closely linked to the reality in which women make reproductive decisions. In addition, this kind of inconsistency is more common among older women who are moving towards – or are already in the process of – the end of the reproductive period. These women, who were unable to implement their reproductive desires, in many cases, end up stating that they do not wish to have more children, even though they have not yet reached the ideal number of children, because they know that the biological capacity to become pregnant is low as a result of age.

A similar situation is observed in Brazil, a country with fertility below replacement, even if the normative ideal is of two children, which already shows evidence of the postponement of maternity (Miranda-Ribeiro et al., 2019). In Brazil, the percentage of women who commit mismatch 1 is also high in relation to that of other countries due to the same conditions to which Uruguayan women are exposed. In addition, based on other studies, this occurs mainly among women with higher education and medium and high economic strata, which are also the women with the greatest negative discrepancy (Carvalho, Wong and Miranda-Ribeiro, 2016). Brazil and Uruguay represent examples of high mismatches related to the difficulty of women in implementing their reproductive intentions to reach the desired number of children. However, it is important to be cautious when interpreting this high mismatch 1 rate; as observed in

Figure 3. Percentage distribution of mismatches
according to the TFR, Latin America 2006-2017.
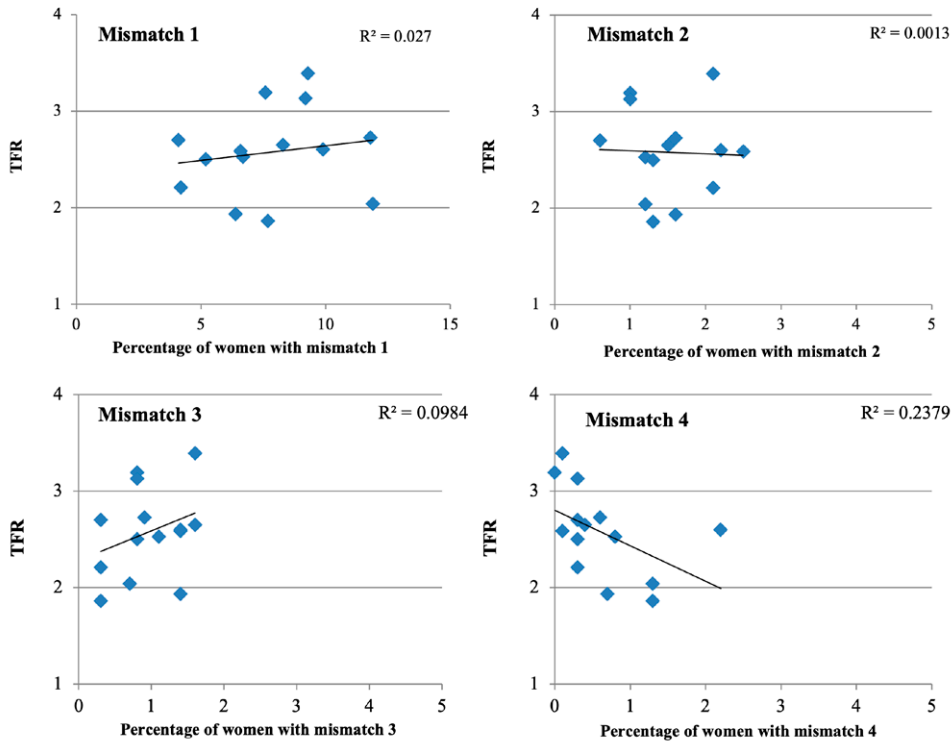
Source: DHS, RHS and national surveys.

the study by Carvalho, Wong and Miranda-Ribeiro (2018), some of the women with negative discrepancies may not be dissatisfied with their reproductive choices since the ideal number of children may be very far from their real expectations for children, needing the attention of two public planners.

In relation to mismatch 2 and 3, it appears that they are related to the problem of a positive discrepancy, that is, with the fact that women have more children than ideal and still wish to have children. These two types of inconsistency are low in all countries, which may reflect the fertility transition process underway in many of these countries, resulting in a decrease in the desired and achieved numbers of offspring and greater autonomy for women in their reproductive decisions. These changes would lead to a decrease in the proportion of women who still want to

have children after reaching or exceeding the ideal family size. It can also indicate a greater certainty of the future when you have more children than the declared ideal number.

It is interesting to note the fact that these contradictions are more frequent among young women, as revealed by Figure 2. This may be related to the fact that fertility in the region is still concentrated among younger women (Rodríguez Vignoli, 2017), and they are the women most likely to experience changes in their reproductive intentions as they enjoy a still considerable margin of time to make changes in their plans and also because they are more subject to changes in the living conditions that condition such plans. This is also why these two types of mismatches (2 and 3) are more common in countries with higher fertility. In these countries, the transition process is more incipient; in addition, due to lower access to family planning methods, especially in lower socioeconomic strata, the number of offspring is generally above the size initially desired (Rodríguez Vignoli, 2017).

Concerning mismatch 4, all countries classified as having low fertility were among those with the highest percentages, indicating that this type of mismatch is common in these contexts where most women already have access to modern contraceptive methods such that women have the means to control reproduction, including postponing reproduction to older ages (Ponce de Leon et al., 2019). Thus, despite having fewer offspring than the declared ideal size and wishing to have another child, there is a group of women (approximately 1 %) who were using contraception at the time of the interview. However, it is a group that may increase in size in the coming years, given the situation of the continuous decline in fertility, the postponement of births and increased uncertainty about the future. In addition, the reasons for the occurrence of this type of mismatch can vary. Some examples to consider include the following: occupied positions and/or commitments in the labor market that hindered motherhood at that time, incompatibility with their spouse's desires, unfavorable socioeconomic situations, and events in the country (such as wars, epidemics, and crises) that did not provide an adequate context. However, in order to understand the occurrence of mismatch 4, it is necessary to know the reality of each country in greater detail, especially the contexts of these women's lives.

Final considerations

The results show different types of inconsistencies in the answers to questions related to the reproductive preferences of Latin Americans. The measurement of mismatches made it possible to infer that the occurrence of contradictions is low in the group of countries analyzed, which is an average of 11 %. In other words, it appears that, in general, Latin American women's responses are consistent with what is expected and established by norms. At the same time, it indicates that the occurrence of the inconsistencies found is part of the decision-making process related to having children, mainly because fertility preferences are not static throughout life. However, this percentage is believed to be underestimated, as discussed in the results section. The hypothesis is that many women rationalize and are thus not captured by the mismatch 1 indicator. In this sense, cross-sectional data is limited, and a cohort study would be very useful to estimate the occurrence of contradictions more robustly, particularly mismatch 1.

It is concluded that the occurrence rate of mismatch 1, that is, the cases in which women are classified with a negative discrepancy and say they do not want more children in the future, is always greater than the occurrence rates of other mismatches for all the countries analyzed and is predominant. This is possibly related to the fact that the certainty of not wanting to have more children, in this case unwanted children, is stronger than the desire to reach the number of children considered ideal. Negative outlier fertility is high for many Latin American countries and appears to be a consequence of the fertility transition process in the region, as shown by Carvalho et al. (2020). Thus, the high percentage of mismatch 1 seems to align with the region's context in which the social norm still in force is an ideal number of children of approximately 2; however, many women have fewer children than this normative pattern, characterizing the fertility discrepancy. In addition, the mismatch 1 shows that even though some of these women are aware of such a discrepancy, they claim they do not want to have more children. One possible explanation for the greater occurrence of mismatch 1 is that such women do not want to follow the ideal number pattern imposed by society or that this ideal does not actually correspond to their ideal desire.

This is because it is how unclear whether some of the incompatibility results are due to how information about "ideal family size" is transmitted

or how the respondent internalizes the question. It is essential to discuss how questions about ideal numbers of children and future fertility intentions, the concepts, and the meanings they encompass are elaborated in the questionnaires. This greatly affects how women respond and end up directly influencing inconsistencies. As Latin America is composed of a great heterogeneity of countries, some do not fit in these contexts. Still, they also present a high percentage of mismatch 1 (such as Bolivia, Guyana and Peru). It is noteworthy, however, that these countries had high percentages of occurrence for all types of mismatches. In this sense, the context of high fertility concentrated at younger ages, along with low levels of education and the wealth of the population, may be a set of elements that condition the different types of inconsistencies in women's responses to reproductive intentions and desires.

The results also made it possible to conclude that women have less divergence in their answers (mismatch 2 and 3) when they have already exceeded the ideal number of children. In other words, in these cases of discrepant positive fertility, women seem to be more certain of the future and have answers better aligned with their fertility preferences. Another possible explanation is that the motivations are more stable for these women who had more children than the number declared as ideal because the consequences for the lives of women having unwanted children would be more extreme (both physical, emotional and economic); thus, they have less doubts about their reproductive future. The occurrence of mismatch 4 also proved to be low, indicating that the proportion of women who experienced negative outward fertility and said they wanted to have more children at the time but were using contraceptive methods was low.

Regarding the distribution pattern of mismatches and the age of women, it is concluded that they are not distributed equally among all ages. The rate of mismatch 1 increases as women age, with its peak occurring among women aged 35 and over. However, mismatch 2, 3 and 4 are more frequent among younger women up to 35 years old. The tendency of the age pattern found for the different mismatches seems reasonable, but there are some possible explanations. The greater observance of mismatch 1 in groups of older women is consistent with the idea that fertility intentions are more limited at the end of a woman's reproductive cycle. In this sense, as some of the older women have already gone through much of the period or, for some of them, have already ended their reproductive

lives and have not reached their ideal number of children, they know, with great certainty when answering the question about their desire for children in the future (be it reduced fertility at these ages or the short window of time that they have), if they will no longer have children and therefore end up responding not wanting to have children. It seems, then, that these women would have already internalized the fact that they will no longer have children, although they have not yet reached the ideal number of children, maybe because the ideal number of children is something that individuals don't want to materialize because it is necessary to reflect on whether this ideal number of desired children is actually pursued at some point, as it may have no relation to the current reality. In this case, one can say what the contradiction in this group would be due to fatalism. Additionally, this misfit can happen due to the objective limitations that exist to comply with this ideal (as occurs with many other "ideals" of people), such as presupposed restrictions, of time and couple, alternative options (and opposite to the achievement of the preference of children) or other "ideals" (such as professional careers) that end up being imposed. These aspects relate to the discussion about fertility competition by Coutinho and Golgher (2018).

In addition, the occurrence of mismatch 2 and 3, that is, women classified with a positive or null discrepancy who claim to wish to have children in the future, for the group of younger women could be related to the large window of time remaining in their reproductive periods and, consequently, the risk of having children, which makes it difficult for them to estimate the future events of their lives. Therefore, having children is still an option, although at that moment, they had more than they wished. In other words, it may be that uncertainty about the future influences the occurrence of this contradiction. Finally, the occurrence of mismatch 4, which occurs for women who were classified as having a negative discrepancy since they answered that they would like to have children at that time and used modern contraception, is also concentrated among younger women at the peak of their reproductive periods. In this case, it is believed that the use of contraception is because the woman is not yet trying to conceive and that it is often temporary, indicating that at any time, it can be interrupted so that the plan of having a child becomes concrete.

The data on the relationship between countries' fertility levels proved exciting. This is because, contrary to what was initially expected, a linear and uniform relationship between fertility levels and the occurrence of

mismatches was not identified. Both countries with low fertility and those with high fertility levels had similar characteristics, especially concerning mismatch 1. Even so, as expected, it should be noted that mismatch 2 and 3 prevailed in countries with the highest fertility and mismatch 4 prevailed in those with the lowest fertility. This weak (or nonexistent) relationship between the types of mismatches and fertility levels suggests that different contexts may present similar contradictions. It is noteworthy, however, that the analyses were conducted from a macro perspective, covering each country at the aggregate level, without considering their internal specificities. In this way, the results obtained can, in a certain way, hide the relationship between fertility levels and the presence of a mismatch, which could be captured and better viewed through micro analyses focused on women individually. It is believed that to better capture the relationship between fertility and mismatches, it would be better to use data on women's parturition.

The aspects mentioned show the complexity of the topic addressed; despite its limitations, this article was a first effort to discuss the responses of Latin American women regarding their reproductive preferences. An important research agenda is clearly perceived here; it is essential to analyze, in addition to the type of contradiction that exists in countries, the factors behind the occurrence of contradictions to understand the reasons that lead to the non-implementation of fertility preferences and inconsistent responses about reproductive reality. In addition, it becomes relevant to identify the relationship between the socioeconomic and demographic profiles of women and the occurrence of mismatches since Latin American society is quite unequal and sexual and reproductive behavior differs greatly between women belonging to different population strata. Finally, the participation of partners in reproductive decisions should be considered more to verify the influence of gender issues in the responses of women in union about future reproductive intentions, as shown by Bueno and Pardo (2023). In all of these cases, a micro analysis study would be necessary, which was not the focus of this article.

All of these aspects are part of a future research agenda; however, for them to occur, investments in databases in the region are necessary. Many Latin American countries, such as Brazil, do not have recent data that make it possible to understand the current context of reproductive preferences, let alone the reasons and consequences of contradictions and discrepancies in women's lives. It is essential to conduct comparative

and periodic national studies on the subject, including questionnaires for men and the addition of new questions, which are already being included in European and American surveys on the subject. Additionally, due to the fertility preferences being subjective experiences, the current surveys do not allow these measurements. Then, qualitative works would provide more insights into fertility preferences that could inform surveys. This information would make it possible to considerably expand the knowledge about reproductive preferences and make better predictions about the future of fertility in the region.

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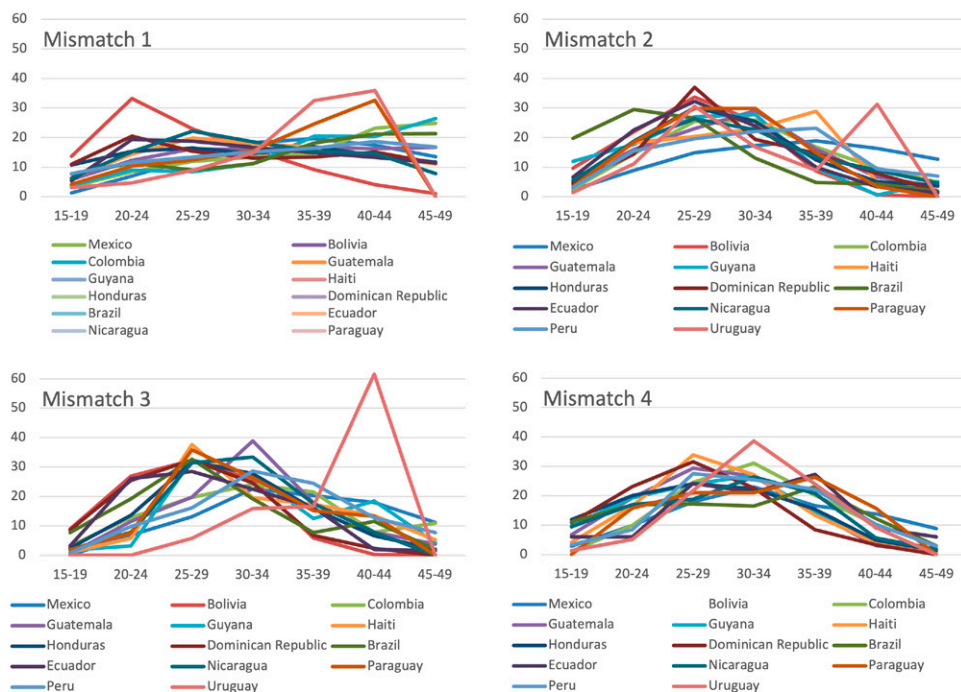
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Appendix

Figure A1. Percentage distribution of mismatches according
to women's age group and country, 2006-2017.

Source: DHS, RHS, and national surveys.