# The Plan ENIA: reducing unintended adolescent

pregnancy in Argentina

By

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# Abstract

The Plan to Prevent Unintended Pregnancy (Plan ENIA) is the first public policy that proposes a comprehensive intervention on unintended adolescent pregnancy in Argentina. Even though the phenomenon has been showing a decreasing trend since the beginning of the 21<sup>st</sup> Century, the Plan was designed to accelerate the reduction in the provinces with the most critical indicators regarding adolescent pregnancy. The policy was implemented in 2017 in 5 of the 24 provinces and autonomous jurisdictions of the country and it was later on extended to 7 additional provinces until it was fully operational in 2019. This research takes advantage of its staggered design and through a difference-in-difference analysis aims to study the effect of the policy on adolescent women. The results show that, despite having accomplished most of its operational goals, the policy does not have a significant effect on unintended adolescent pregnancy.

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# 1. Introduction

Adolescent fertility rates have been a concern in Latin America for years. For instance, since 1995, the region has remained the second one in the world with the highest number of births per 1,000 adolescent mothers, only surpassed by Africa (United Nations 2019). In the specific case of Argentina, even though these rates have been slightly below the regional average, they have consistently remained above the world rates (de León and Thourte 2020, 12-13). For instance, during 2015-2020, while there were 63 live births per 1,000 adolescent women aged 15-19 years in Latin America and 42.5 live births per 1,000 adolescents in the world, the Argentine rate was situated at 62.8 live births (United Nations 2019). This compromises the development of Argentine women since there is evidence that shows that early motherhood affects their educational and labour outcomes (PAHO, UNFPA LACRO, UNICEF LACRO 2017, 17).

Because of the above, the Argentine government has been indirectly addressing the problem of adolescent pregnancy through various policies implemented by different ministries, aimed at improving access to contraceptives and providing comprehensive sex education. However, important challenges remain in the country given the fact that there are significant differences among the 24 provinces and autonomous jurisdictions<sup>1</sup> of the territory (Ginestra 2020, 8-9, de León and Thourte 2020, 14-15). For instance, the northern provinces present notoriously higher rates than those in the centre and south of the country (Ministry of Health 2022). As a result, the Plan ENIA was introduced in 2017 to accelerate the reduction of unintended pregnancy in the provinces with the most critical indicators. Furthermore, this is the first public policy that specifically addresses unintended pregnancy in adolescence in Argentina, through an innovative comprehensive and intersectoral intervention that takes advantage of the knowledge already developed by previous initiatives.

<sup>&</sup>lt;sup>1</sup> The country has 23 provinces and 1 autonomous jurisdiction (Buenos Aires city). For practicality, from now on this study will refer to the 24 jurisdictions as provinces since the city of Buenos Aires operates as one of them.

The policy was created following evidence-based recommendations and various local and international non-governmental organizations participated in its design and implementation (de León and Thourte 2020, 21-22). Because of this, the Plan ENIA is frequently referred to as an example of an evidence-based policy to be followed, that has managed to achieve a high degree of intersectoral coordination that helps to tackle the various root causes of the phenomenon (de León and Thourte 2020, 7). Therefore, analysing to what degree its goals have been achieved and how it has impacted unintended adolescent pregnancy is essential to support the notion that it is a model policy and justify the significant resources that the government has been allocated to the Plan.

The Plan ENIA was launched in August 2017 in selected districts of 5 of the 24 provinces of the country and it was later extended to additional districts of 7 provinces, reaching full implementation in 2019 (Presidency et al. 2017, 34-35, de León and Thourte 2020, 50). This research takes advantage of its staggered implementation and applies a difference-in-difference analysis to study the effect of the services and products provided by the policy on unintended pregnancy and live births to adolescent mothers.

The results show that, even though the Plan has been successfully reaching its operational targets, there is no significant incidence in the phenomenon of unintended pregnancy in the treated provinces and districts. Furthermore, despite the potential limitations of the empirical analysis, the elimination of a key impact indicator for the measurement of the Plan and the lack of continuous reporting on the remaining indicators, reinforce the notion that the policy is not properly addressing unintended adolescent pregnancy. These findings demonstrate that the Argentine government is not accurately helping adolescents to prevent unintended early motherhood, which results in important negative outcomes in their future development.

In the following section, a literature review is conducted in order to further understand the phenomenon of adolescent pregnancy, its root causes and consequences. Additionally, the specific situation of Argentina is analysed, to comprehend the development of teenage pregnancy in the

last decade. Consequently, the methodology used in this study is outlined, including a description of the research design and the data obtained to conduct the analysis. Afterwards, an analysis of the Plan ENIA is presented to understand the design and implementation of the policy, and the goals achieved so far, along with the empirical analysis and its limitations. The last section is devoted to the conclusions, in which the main findings are discussed and reviewed.

## 2. Literature review

# 2.1. Adolescent pregnancy around the world

According to recent estimates, 16% of the world population are adolescents aged between 10-19 years (UNFPA 2022), out of which approximately 48% are women (United Nations 2019). It is estimated that in 2019, 21 million girls aged 15-19 years were pregnant in low-to-middle income countries and approximately half of them were not planned (Sully, et al. 2019, 30). Female adolescents are the most affected by unintended pregnancy and early motherhood which entails important violations of their rights to education, employment and health (Loaiza and Liang 2013, 8). In this regard, the International Covenant on Economic Social and Cultural Rights recognizes "the right of everyone to the enjoyment of the highest attainable standard of physical and mental health" (UN General Assembly 1966, art. 12). Specifically, it acknowledges that sexual and reproductive health is a key aspect of the right to health and that it entails the right to making free and informed decisions pertaining to one's body and having unrestricted access to health facilities and services (CESCR 2016, par. 6-12). Furthermore, the Convention on the Elimination of All Forms of Discrimination Against Women (CEDAW) reinforces the notion that reproductive health is fundamental and calls for action in the elimination of discrimination against women in their access to health care, particularly in the areas of family planning and pregnancy (CEDAW 1999, intr.). Therefore, addressing the issue of unintended pregnancy is essential in order to guarantee the protection of young women's rights and their personal development.

Adolescent pregnancy is defined as the occurrence of pregnancy in girls aged between 10 to 19 years old (WHO 2004, 5). However, authors distinguish between late adolescence, which is comprised of young women aged 15-19 years, and early adolescence, which includes girls aged 10-14 years, given the important differences among these groups in terms of their development (WHO 2004, 5). In general terms, statistics used to compare the incidence of adolescent pregnancy

between countries are mostly provided through rates that measure the total births per 1,000 adolescents aged 15–19 years, since statistical data of younger cohorts is very limited (WHO 2004, 5, PAHO, UNFPA LACRO, UNICEF LACRO 2017, 25). One of the most salient indicators to measure adolescent pregnancy is the adolescent fertility rate, which is the annual number of live births to young women aged 15-19 years per 1,000 women in such age group (WHO 2022). Furthermore, this rate is an important indicator of the effectiveness of the various measures implemented by States globally to guarantee universal access to sexual and reproductive health services (WHO 2021). Therefore, how high this rate is, demonstrates the extent to which adolescents can access reproductive health care facilities and services.

Between the period 2015-2020, the global adolescent fertility rate was 42.5 births per 1,000 adolescent women (United Nations 2019). As the following graph shows, this rate has been persistently decreasing throughout the past decades. From being above 80 births per 1,000 adolescent women, it has dropped to approximately half in recent years. However, there are significant differences between regions.



Figure 1. Evolution of adolescent fertility rate by region 1950-2020

Source: United Nations 2019.

As it can be seen in the above figure, Africa and Latin America remain above the world average with rates of 63 and 95 births per 1,000 adolescents, respectively. Likewise, these regions are the most affected by early childbearing of girls aged 10-14 years old (United Nations 2019b).

Furthermore, when considering adolescent pregnancy, intentionality becomes very relevant. Unintended adolescent pregnancy is defined as the childbearing that was not planned, which could be the result of various reasons, such as sexual abuse or contraception misuse (de León and Thourte 2020, 15). In this regard, evidence suggests that the rates of unintended pregnancy have been declining globally for women aged 15-44 years, mainly due to the increasing access and use of contraception (Bearak, et al. 2018, e387). However, there are differences in this regard when comparing developing and developed countries. For instance, while in developed regions unintended pregnancies decreased by approximately 30% between 1990-1995 and 2010-2014, in developing countries the decrease was about 16% (Bearak, et al. 2018, e384-e386). In the specific case of adolescents aged 15–19 years, approximately 10.2 million unintended pregnancies occur each year in the developing world (Darroch, et al. 2016, 10).

The causes behind adolescent pregnancy can be segmented into two categories: on the one hand, there are structural aspects that drive the phenomenon and, on the other, there are proximal determinants that also affect the persistence of adolescent pregnancy (Viner, et al. 2012, 1642-43). In this line, structural aspects should be understood as broader factors such as the political and economic systems in which the adolescents are immersed, for instance, aspects such as wealth distribution, poverty, migration, homelessness, the educational and healthcare systems and employment opportunities for youth play a key role (Viner, et al. 2012, 1643-47). On the other hand, proximal determinants are those related to the circumstances of daily life, such as the educational environment of teenagers, their family environment, their relationships with neighbours and peers, and the adoption of health behaviours linked to substance use, sex, diet, exercise and chronic disorders (Viner, et al. 2012, 1647-48).

In the specific case of developing regions, the level of economic development is directly linked to early childbearing (United Nations 2020, 16-17). Furthermore, when analysing proximal factors, studies have found that in Africa the desire to maintain a relationship, poor knowledge of contraceptive methods, misinformation about their side effects, and lack of trusted mentors (Ajayi, et al. 2021, 6-7) were the main reasons behind pregnancies of girls aged 15-19 years. Similarly, in Latin America, the lack of comprehensive sexual education, social norms that reinforce early motherhood, high rates of sexual violence and sexual exploitation, the lack of adolescent-friendly health services and the lack of affordable and accessible contraception are key drivers of the phenomenon in both age cohorts (CLADEM 2016, 60-64, PAHO, UNFPA LACRO, UNICEF LACRO 2017, 29-32, United Nations 2020, 19).

The above shows that developing regions face important challenges when it comes to guaranteeing equal opportunities between young women and men. For instance, girls who experience motherhood early face more difficulties when it comes to accessing education because they are either already out of school or forced to abandon their studies, which in turn impacts directly their labour outcomes (PAHO, UNFPA LACRO, UNICEF LACRO 2017, 17-18). Studies conducted in low-to-middle income countries have found that there are important associations between adolescent pregnancy and fewer years of schooling (Fall, et al. 2016, e787-e788). Furthermore, research conducted specifically in Latin America showed that adolescent mothers were 3 times less likely to obtain a university degree than those who postponed motherhood to the first decade of their adult life (UNFPA 2020, 7). This has a significant impact on the socio-economic development of young women since teen mothers earn on average 24% less than those who delay motherhood (UNFPA 2020, 9).

Figure 2. Educational attainment of early and adult mothers.



Source: UNFPA 2020.

Furthermore, adolescent pregnancy affects the health outcomes of new-borns since it is related to lower children's birth weight, gestational age and childhood nutritional status (Fall, et al. 2016, e787-e788). In terms of health risks to the mothers, however, research has shown in recent years that they are not as severe as previously thought (GBD 2021, 1594-1595, Nove, et al. 2014, e162-e163). For instance, studies report that between 1980 and 2019 there has been a large reduction in the share of communicable and maternal causes to total adolescent deaths in Latin America and the Caribbean, South Asia, Southeast Asia, East Asia, North Africa and the Middle East (GBD 2021, 1597-1600). Furthermore, studies conducted in 147 countries showed that even though maternal mortality of girls aged 15-19 years old was 37% higher than the maternal mortality of women aged 20-24 and 8% higher than mothers aged 24-29 years, it is significantly lower than maternal mortality in women over 30 years of age (Nove, et al. 2014, e161-e162).

Overall, adolescent pregnancy puts at risk the social and economic development of young women and given its link with poverty, contributes to the maintenance of the intergenerational cycles of marginalization (Caffe, et al. 2017, 1-2). Because of this, international organizations have been providing various recommendations to address the issue, mainly centred around improving the access to comprehensive sex education (WHO 2004, 62-63, UNFPA 2015, 33, UNESCO 2017, 23), providing youth-friendly health services supported by community-wide leaders and institutions (UNESCO 2017, 29, 35-36, UNFPA 2015, 52-54), guaranteeing the free access to contraceptive (WHO 2004, 63-64), reducing social deprivation (WHO 2004, 62), increasing the age at marriage (WHO 2004, 61, Loaiza and Liang 2013, 28, UNFPA 2015, 22), using data to identify and target critical areas or regions within a country, developing strong monitoring and evaluation systems to strengthen policies targeted at girls at risk (Loaiza and Liang 2013, 30, UNESCO 2017, 40-41), and addressing the cultural and social norms that favour forced pregnancies and reinforce gender roles (UNFPA 2015, 54, UNESCO 2017, 34-35).

## 2.2. The case of Argentina

Following global trends, Argentina has had a consistent decline in the rate of adolescent fertility in the 15-19 age group. In the case of early adolescence, however, the rate has remained stable but significantly low. Despite this, important challenges remain for the country when considering the global and regional averages. For instance, during 2015-2020, while the Latin American adolescent fertility rate was 63 live births per 1,000 adolescent women and the global rate reached 42.5 live births per 1,000 adolescents, the Argentine rate was 62.8 live births (United Nations 2019).



Figure 3. Adolescent and child fertility rates in Argentina (2010-2020)

Source: Argentine Ministry of Health 2022. Information provided through FOLA request.

Furthermore, if adolescent pregnancy is analysed by province, important disparities emerge. However, it should be noted that the Argentine Ministry of Health does not publish the adolescent fertility rates disaggregated by province, instead, the incidence of pregnancy is measured through the share of live births of adolescent mothers over the total number of births in each province. The following figure shows the evolution of the share of live births to mothers aged 15-19 years throughout the past decade by province.



Figure 4. Share of live births to adolescents aged 15-19 by province (2010-2020).

Source: Argentine Ministry of Health 2022. Information provided through FOIA request.

As it can be seen, there is a decreasing trend across all provinces, however, there are important gaps between them. For instance, between 2010-2020, Buenos Aires city has consistently been the area with the least share of live births to adolescent mothers, which oscillated between 7 and 3%. On the other hand, the northern provinces of Formosa, Misiones and Chaco have persistently been the top three with proportions that went from 20-25% at the beginning of the period, to 15-16% by 2020. Furthermore, a careful look at the above table shows that the thirteen provinces that were above the country average remained the same throughout the entire decade. The only exception was La Rioja, which managed to be below the general average only in 2020.

Additionally, when analysing the intentionality of pregnancy, figures demonstrate that approximately 7 out of 10 pregnancies of women in late adolescence and 8 out 10 pregnancies of girls in early adolescence were unplanned in 2020 in the country (Ministry of Health 2022b). Unplanned adolescent pregnancy ranges from approximately 55% to 100% and remains high across all provinces.



Figure 5. Unplanned adolescent pregnancies by province and cohort (2020)

Source: Argentine Ministry of Health 2022. Information provided through FOLA request.

The situation outlined above is highly critical, particularly when the impact on the socio-economic development of young women is considered. In the specific case of Argentina, it has been reported that women that become mothers during adolescence earn 23% less than those who became mothers during their adult life, which translates into an income gap of USD 954 between them (UNFPA 2020, 31). Furthermore, 57% of early mothers only finish primary school, 38% achieve secondary school education and only 5% manage to attend tertiary education or above, whereas in the case of adult mothers these numbers improve significantly to 29%, 55% and 16%, respectively (UNFPA 2020, 28).

The issue of adolescent pregnancy becomes even more salient given the current economic context of the country, in which approximately 35% of the population is under the poverty line (National Directorate of Provincial Affairs 2019). Furthermore, those provinces that show the highest share of live births to adolescent mothers are accordingly the ones in which poverty is higher. For instance, in Formosa, Misiones and Chaco poverty during the first term of 2019 reached 40% in the case of the first two, and 47% in the latter.



Figure 6. Share of people under the poverty line (1° term 2019)

Source: National Directorate of Provincial Affairs 2019.

The incidence of the phenomenon in the country should be analysed considering the different determinants of teenage pregnancy for each age cohort. In early adolescence, pregnancy is usually the result of situations of sexual abuse, violence, incest and forced maternity (CLADEM 2016, 3). In Argentina, even though there is no public body that systematizes and publishes data pertaining to sexual abuses and violence, certain initiatives promoted by international organizations, such as "Victims Against Violence", try to fill this gap by analysing the information collected through the Ministry of Justice and Human Rights. These efforts allow to take a dimension of the phenomenon and, for instance, the latest report of the program indicates that between October 2020 and September 2021 there were a total of 9,989 complaints of sexual abuse to children and adolescents, out of which approximately 49% belonged to kids under 11 years old, and over 59% of all adolescent victims were women (UNICEF 2021, 8). However, it should be considered that studies have found that underreporting is very common and significantly high for this type of case (Stoltenborgh, et al. 2011, 89-90).

In relation to the above, the literature argues that access to safe and free abortion is fundamental to addressing child pregnancy (CLADEM 2016, 63). Even though Argentina had a law enacted in 1921 that provided legal abortion for specific situations, such as sexual abuse and when the mental and physical health of the mother was at risk, the implementation of the norm across the country was highly uneven. For instance, until 2015, only 8 out of the 24 provinces of the country adhered to national protocols or had developed their own (Amnesty International 2016, 4). Furthermore, in some cases, even if they had protocols, the provincial judiciary introduced additional requirements to the norm that delayed the approval of abortion and resulted in young women being forced to give birth due to the delay in the judicial process (Diario Judicial 2007). This resulted in inequalities between wealthier and poorer girls since the former were able to pay for safer – although illegal – alternatives in private health institutions, while the latter had to appeal to riskier methods and were more exposed to criminalization (Ginestra 2020, 20).

However, by the end of 2020, a new law was enacted to guarantee access to voluntary, safe and free abortion throughout the country for all women that demanded it until the fourteenth week of pregnancy without having to provide a reason. Nonetheless, in some provinces, conservative groups attempted to refrain the implementation of this law alleging that it was unconstitutional. In this regard, by June 2021, Amnesty International (2021, 6) informed that there were 37 lawsuits against the norm, out of which 32 attempted to declare the law unconstitutional, 3 to sue those responsible for its approval, and at least one sought to prevent a woman from accessing her right. However, none of these attempts was successful and most of them had been rejected by December 2021 (Amnesty International 2021, 8-9).

In the case of late adolescence, the determinants of early childbearing are related to poverty, social norms and barriers to accessing sexual and reproductive health services and information (Ginestra 2020, 13-19). Regarding the first, studies have found that approximately 20% of adolescents aged 15-19 years from the poorest quintile had been pregnant at some point in their lives and that this proportion is reduced to 2.6% for the case of girls in the wealthiest quintile (Ginestra 2020, 13). Furthermore, patriarchal social beliefs are oftentimes prevalent among women with vulnerable backgrounds, who consider motherhood as a way of acquiring social prestige and developing their identities (UNICEF 2014, 56-58, Gogna, et al. 2005, 56).

In terms of the access to sexual and reproductive health information, it should be noted that Argentina enacted in 2006 the National Program of Comprehensive Sex Education, which states that comprehensive sex education (CSE) should be understood as the one that includes biological, psychological, social, affective and ethical aspects of sexuality and that it should be guaranteed in all public and private schools (Law 26.150 2006). However, since the country has a decentralised educational system, provinces can either adhere to the law or add it to their existing provincial education laws (Ginestra 2020, 21). As a result, the implementation of sex education varies across the country, as can be seen by observing national reports.

For instance, the latest available results of the largest primary education survey show that in 2018, even though above 98% of schools claim to provide CSE, topics such as pregnancy, the prevention of early childbearing and sexually transmitted diseases and the prevention of sexual abuse were the ones least discussed in class (Ministry of Education 2019, 88-91).



Figure 7. Primary school results. Sex education contents discussed according to students (2018).

Source: Ministry of Education 2019.

Furthermore, when considering 2019 secondary school reports, approximately 92% of institutions claimed to have discussed at least one topic in the sex education curricula, with the prevention of sexually transmitted diseases and contraceptive methods being the most frequently discussed according to students (Ministry of Education 2021, 215-216). However, even though these percentages improve when compared to primary school results, they are still far from covering the entire population of students since those who admitted having received education pertaining to unintended pregnancy and reproduction, pregnancy and maternity were 68% and 53%, respectively (Ministry of Education 2021, 215-216).





Source: Ministry of Education (2021).

This situation accounts for the relevance of cultural barriers in the country. In this regard, issues such as catholic schools not being inclined to offer sex education content, and the catholic beliefs of the provincial governments and political leaders contribute to disparities in the implementation of the law (Esquivel 2013, 42-47). This situation is more prevalent in the northern provinces of the country, in which poverty and adolescent pregnancy are more frequent (Ginestra 2020, 13). As an example, when comparing the six more discussed topics according to secondary school students in Buenos Aires city with Formosa, Misiones and Chaco there are important differences, as seen in the figure below. Particularly, Formosa and Chaco present lower percentages of students being taught sex education topics directly linked to teenage pregnancy, with the only exception of gender violence in adolescence.



Figure 9. Secondary school results. Sex education content comparison between Buenos Aires, Formosa, Misiones

and Chaco (2019)

Source: Ministry of Education, 2021.

Lastly, in terms of access to healthcare services, the National Programme for Sexual Health and Responsible Parenthood was launched in 2003, which focused on the prevention, free and universal access to contraceptives, access to information and counselling, and quality sexual and reproductive health services (Ginestra 2020, 26). However, similarly to what occurred with the CSE law, cultural and operational barriers prevented the program from being fully implemented (Ginestra 2020, 26). For instance, between 2003 and 2010, the program managed to provide contraceptives to approximately 68% of its target population and health professionals reported that the distribution of contraceptive methods faced severe delays and problems (Ginestra 2020, 26-27). Because of this, the national government attempted to implement additional plans and programs, such as the National Comprehensive Health Program in Adolescence in 2007, the Plan for the Reduction of Maternal Mortality and Infant Mortality in 2009 and the Plan SUMAR in 2012 which, according to the Ministry of Health were successful holistic strategies that helped to reduce unplanned adolescent pregnancy between 2009 and 2013 from 68.9% to 60.8% (Ministry of Health 2015, 27), even though none of these programs specifically targeted unintended adolescent childbearing. In this context, the national government developed the National Plan to Prevent Unintended Pregnancy (Plan ENIA) in 2017, to create a comprehensive strategy to specifically address the issue (Ginestra 2020, 27-29). The Plan is aimed at assisting adolescents in making free and informed decisions about their sexuality, guaranteeing free access to contraceptives and preventing sexual abuse (de León and Thourte 2020, 30). The Plan has set a series of specific targets to be achieved and has developed several devices to improve the provision of sex education, counselling and contraceptive methods from a youth-friendly perspective (de León and Thourte 2020, 30-31).

# 3. Methodology

The goals of this research are twofold: on the one hand, it is meant to analyse the implementation of the Plan ENIA in Argentina and its achievements until the present day and, on the other, it is aimed at measuring the average effect of the Plan on the reduction of unintended adolescent pregnancy. For such purposes, the following research questions guide this study:

- 1. Was the Plan ENIA effective in achieving its goals and targets between 2017-2020?
- 2. How was the Plan designed and implemented?
- 3. What was the effect of the Plan ENIA on unintended adolescent pregnancy in Argentina?

The hypothesis that underlies these questions is that comprehensive and intersectoral strategies that provide sexual and reproductive health services specifically targeted at adolescents reduce unintended teenage pregnancy.

The study is divided into two stages. Firstly, a review and analysis of the implementation of the Plan are conducted using the available policy documents published by the Argentine government in order to address the first two questions. Secondly, an empirical analysis is performed in order to measure the effect of the program on the reduction of unintended adolescent pregnancy.

# 3.1. Research design

## First stage: Document review

The first stage of the research is dedicated to analysing the Plan ENIA. This stage is intended to study how the plan was designed and implemented, analyse the goals set by the program and evaluate to what extent they were achieved. For such purpose, the annual and quarterly monitoring reports, as well as the policy documents publicly available will be reviewed to analyse the conception and development of the plan.

### Second stage: Empirical analysis

As will be discussed in the next sections, the Plan ENIA was initially implemented in selected districts of the 12 most critical provinces in terms of the share of live births to adolescent mothers and the proportion of unintended pregnancy. Because of this, a difference-in-difference (DiD) analysis is conducted at two levels: firstly, at the provincial level and, secondly, within the province of Jujuy, which was one of the first provinces in which the program was executed. This method allows comparing the changes in outcomes over time between a group that received a treatment and a group that was not beneficiary of the policy while accounting for time-invariant differences across groups and interstate invariance (Cunningham 2021, ch. 9). The result of the DiD is the estimation of the average effect of the policy.

#### Outcome variable

The main challenge faced in the study is that the national and provincial governments do not publicise the rate of unintended adolescent pregnancy, which is the main indicator that the policy established to measure its success. However, as it will be informed in the subsequent sections, it is possible to construct this indicator with the data obtained through FOIA requests and the document review of the Plan ENIA. Nonetheless, this data is not sufficient to obtain a timeseries, which is why the share of live births to adolescent mothers is also used as a variable to measure the incidence of the plan. Given the fact that unintended pregnancy has been in general high across all provinces throughout the period and that policymakers also considered it in the design of the policy, it is possible to use the share of live births to adolescents as an approximate variable to understand the effect of the implementation. The histograms of this outcome variable can be found in Appendix I.

## Case selection

The effect of the plan was studied at the provincial level, but also at the district level, within the province of Jujuy. The selection of this province was based on three aspects: firstly, the province sustained a share of live births to adolescent women between 18-19% during the period 2010-2016, after which started to see a slow decline until, in 2020, it reached a share of 11%; secondly, it was the second province with the highest share of unintended adolescent pregnancies in 2020 and, thirdly, it was among the provinces in which the Plan was implemented during the pilot stage.

The districts and provinces in which the plan was implemented were used as the treatment group and those in which the plan was not delivered, as control groups. Furthermore, the comparison is run for the year 2016, as the pre-treatment period, and 2019 as the post-treatment.

## Parallel trends

Difference-in-difference analyses require the parallel trends assumption to be met. This assumption implies that treated and control groups show a similar pre-treatment trend of the outcome variable. For this purpose, the evolution of the share of live births was analysed prior to the treatment in Jujuy and across provinces since it was the only variable that allowed to study the trajectory of the indicator. It should be noted that even though these trends are not exactly the same, the patterns throughout the period under review were very similar. Additionally, since the proportion of live births to mothers aged 10-14 years is notoriously small, for the parallel trends analysis the outcome variable considered was the share of live births to mothers of both age cohorts combined (10-14 years and 15-19 years).

The analysis verifies that the average share of live births to adolescent mothers between the treated and control groups at the provincial level had a similar evolution between 2010-2016, which is the pre-treatment period. Therefore, it is possible to conduct the difference-in-difference analysis. Similarly, within the province of Jujuy, the comparison between treated and control districts had similar trends before the implementation of the plan ENIA. However, it should be noted that the period analysed is slightly different and goes from 2011 to 2019 since the data provided by the authorities only included this range. The visual comparison of these trends can be found in Appendix II.

## Model

It should be noted that all women below 20 years old are considered as treated, even though they might have not used the services provided by the plan. Therefore, the estimated effect approximates the intent-to-treat (ITT), which measures the average effect of the plan on women targeted by the program, whether they took the treatment or not. ITT estimates were based on the following two models:

share of live births to adolescent mothers =  $\beta_0 + \beta_1 \operatorname{treat} + \beta_2 \operatorname{year} + \beta_3 \operatorname{treat} * \operatorname{year} + \in$ 

unintended adolescent pregnancy rate =  $\beta_0 + \beta_1 \operatorname{treat} + \beta_2 \operatorname{year} + \beta_3 \operatorname{treat} * \operatorname{year} + \epsilon$ 

The outcome variables are the share of live births to women below 20 years old and the unplanned adolescent pregnancy rate. The average effect of the plan is estimated by the coefficient  $\beta_3$ .

# 3.2. Data description

Data were obtained through open sources and Freedom of Information Act requests to the Argentine Ministry of Health.

## List of reviewed documents

The following table highlights the key monitoring reports and policy documents used to study the design and implementation of the plan.

Title	Type of report	Source
2019 annual report	Monitoring report	UNDP
2020 annual report	Monitoring report	National government
2021 quarterly reports (4)	Monitoring report	National government
ENIA plan. Journey, achievements	Policy document	National government
and challenges (2020)		
Project document, reviews B and C	Policy document	UNDP
Project document	Policy document	UNDP

Table 1. List of documents analysed

## Live births dataset

The Argentinian Ministry of Health publishes on its open data website the total number of live births registered each year in the country. The dataset includes the province of residence of the mother, sex of the baby, type of birth (simple, multiple or not specified), mother's age range, total gestation time, the maximum level of education attained by the mother and birth weight of the baby. However, it should be considered that the level of observation is not the individual mother, but rather the group of live births that coincide in all of the above-mentioned covariates. For instance, one observation corresponds to all live births whose mothers were between 15 and 19 years old, were boys, in a specific province and had a simple birth. Furthermore, as previously outlined, this data is not disaggregated by district, and it is only provided at the provincial level.

Therefore, two FOIA requests were sent in order to obtain further disaggregation of the dataset, one to the national Ministry of Health and one to the provincial authorities of Jujuy. Both requests were replied to. The information provided by the national authorities ranges from 2010 to 2020, covers all provinces, has a total of 7,830,969 million observations and it includes the mother's province of residence, mother's age range, educational attainment and employment situation.

The dataset provided by the provincial government covers the period 2011-2019 and has only the total number of live births per district, with no additional information about the socioeconomic situation of the mothers. Overall, there are 18 observations, which correspond to the mothers'

districts of residence, and a total of 116,138 live births. In this regard, it should be noted that the are some cases in which the adolescents that gave birth did not reside in the province of Jujuy, but in other provinces or foreign countries. Therefore, the difference-in-difference analysis did not contemplate these observations since the adolescents who did not reside in Jujuy were not exposed to the treatment. Overall, the analysis was conducted with a total of 16 units of analysis that accounted for 113,307 live births.

## Additional information about relevant indicators

Additional data were demanded to the national Ministry of Health. In this regard, three items were requested:

- 1. Adolescent fertility rate by age groups and jurisdiction for the period 2010-2020.
- Unintended pregnancies in absolute values by age groups and jurisdiction, period 2010-2020.
- 3. Unintended adolescent pregnancy rate by age groups and jurisdiction, period 2010-2020.

These requests were partially replied to. For instance, the fertility rates were not provided disaggregated by jurisdiction, the unintended pregnancies were not provided in absolute values, but as percentages and only for 2019 and 2020, and the unintended adolescent pregnancy rate was not sent.

### Population estimates

The latest available population estimates by the National Institute of Statistics and Surveys were used in order to construct the unintended pregnancy rate by province.

# 4. Analysis and results

# 4.1. Understanding the Plan ENIA

## The birth and implementation of the Plan

By the end of 2015, the national government included as part of its national plan the goal of developing a strategy for adolescents and youth in vulnerable contexts (CEPAL 2015, Goal 50). Under this goal issues such as youth unemployment, educational attainment and teenage pregnancy were given specific priority, in line with the 2030 Agenda for Sustainable Development (CEPAL 2015, SDG 5). As a result, the government requested three national ministries to comprehensively address adolescent pregnancy, focusing on unintentional childbearing (de León & Thourte 2020, 10-11). Consequently, the Ministry of Health, the Ministry of Education, Culture, Science and Technology and the Ministry of Social Development, with the cooperation of civil society organizations, began the process of designing a holistic strategy to reduce unintended adolescent pregnancy, which until then had only been addressed through plans and programs implemented in isolation by different ministries (de León and Thourte 2020, 11).

The plan was designed with a human rights approach and a strong gender perspective focus (Presidency et al. 2017, 6-8). Using the live births of adolescent mothers in 2015 and the share of unintended pregnancies between 2010-2014 as the main indicators to nurture the design of the policy, the Plan ENIA was born (de León & Thourte 2020, 14; Presidency et al. 2017, 15-18).

In 2015, 2,787 children were born in Argentina to mothers under 15 years of age and 108,912 children to adolescents aged 15-19 years, which represented 0.4% and 14% of total births, respectively (Ministry of Health 2022). In terms of intentionality, while during 2010-2014 approximately 59% of all pregnancies were unplanned, this proportion increased to 68% for

adolescents under 20 years of age (Presidency et al. 2017, 18). As figure 13 shows, there were important differences across provinces when analysing each indicator.



Figure 10. Share of live births and unintentional pregnancies in Argentina

Source: de León & Thourte, 2020; Presidency et al., 2017.

Regarding the proportion of live births, the provinces of Formosa, Chaco, and Misiones, which are located in the northern region of the country, had the highest proportions of births to adolescent women under 20 years old. In contrast, the Buenos Aires City and Tierra del Fuego had proportions below the national average (6% and 13%, respectively). Pertaining to intentionality, the region with the highest rate of unintended pregnancy during 2010-2014 was La Rioja, with 79% of unplanned adolescent pregnancies, and the province with the lowest rate was Santa Fe, which

had 54%. It should be noted that only 6 out of the 24 provinces in the country were below the general average. Undoubtedly, despite provincial differences, the proportion of adolescent unintended pregnancies was high across all of them, which showed that they were a critical issue among adolescents in the country at the time of the design of the Plan.

As highlighted in previous sections, access to sexual and reproductive health services is fundamental to understanding adolescent pregnancy. In this regard, the program analysed the usage of contraceptive methods among teenagers and, between 2010-2014, out of the entire universe of adolescents that did not plan their pregnancies, 88.3% of those aged 10-14 and approximately 80% of those aged 15-19 years did not use any type of contraception in the country as a whole (de León & Thourte 2020, 15; Presidency et al. 2017, 19). Another factor taken into consideration during the design of the policy was that intentionality increased when adolescents already had children. For instance, in 2014, approximately 59% of adolescents aged 15-19 years that had no children said that their pregnancies were not planned, which decreased to approximately 55% for those who already had 1 to 3 children (Presidency et al. 2017, 20-21). In the case of girls aged 10-14 years, the difference is more crucial: approximately 83% of girls with no children said their pregnancies were not planned, which decreased to about 66% in the case of those with 1 to 3 kids (Presidency et al. 2017, 20-21).

Overall, data showed that unintended pregnancies occurred more frequently in women under 20 years of age and even more so in those under 15 years old, when compared to other age cohorts, and it was relatively higher if adolescents did not use contraceptive methods or had no children (de León & Thourte 2020, 15-16).

It should be noted that prior to the Plan ENIA there were a number of programs and policies aimed at addressing the broader issue of adolescents' sexual and reproductive health. These policies fell under the scope of the Ministry of Health and the Ministry of Education, yet none of them addressed unintended pregnancy specifically (de León & Thourte 2020, 20-21). Therefore, there was an additional need to bring together these efforts and take advantage of the experience and trajectory of the programs that were already intervening in the area. As a result, the Ministry of Social Development was introduced as the overall facilitator of the new comprehensive strategy that would specifically address unintended adolescent pregnancy (de León & Thourte 2020, 20-21). The National Secretariat for Children, Adolescents and Family (SENAF), dependant on said Ministry, was the entity in charge of coordinating the policy and aligning the already intervening stakeholders (de León & Thourte 2020, 20-21, Presidency et al. 2017, 41-43).

An innovative aspect of the Plan was the direct involvement of local civil society organizations and international organizations in the formulation and implementation process. Specifically, the Centre for the Implementation of Public Policies for Equity and Growth (CIPPEC) and the Centre for the Study of State and Society (CEDES), played a key role in providing evidence on effective policies to tackle the issue, defining its targets and estimating its cost (de León and Thourte 2020, 21-22). Furthermore, various United Nations agencies participated as technical consultants and the policy was introduced as part of the portfolio of projects sponsored and monitored by the United Nations Development Program (de León and Thourte 2020, 37-40). As a result, four strategic goals with 49 lines of action were defined.

Raise awareness among the population in general and adolescents in particular about the importance of preventing and reducing unintended pregnancy in adolescence.	Improve the supply of sexual and reproductive health services in relation to the availability, accessibility, quality and acceptability of benefits.
Promote the informed decisions of adolescents for the exercise of their sexual and reproductive rights.	4 Strengthen policies for the prevention of sexual abuse and violence and for access to the legal interruption of pregnancy according to the current regulatory framework.

Figure 11. Strategic goals of Plan ENIA

Source: Presidency et al., 2017.

The second and third goals frame the central devices of the Plan and constitute the specific services offered to adolescents, whereas the actions included in the first and fourth goals have a national reach (Presidency et al. 2017, 33-34). The Plan's concrete interventions can be distinguished between service provision devices and institutional strengthening interventions. The former consist of five specific physical spaces in which different services are directly provided to adolescents and carried out by the territorial agents of the Plan (de León and Thourte 2020, 32-35). These devices are:

1. Comprehensive sex education (CSE): Includes teacher training and institutional support to schools to effectively add CSE in their curricular plans and improve content delivery. Through these strategies, each school involved in the Plan has to train a member of the management team and 10% of its basic cycle teachers and receives monthly support from a designed pedagogical companion (de León and Thourte 2020, 32). Each companion assists and monitors 10 schools (de León and Thourte 2020, 33).

2. Comprehensive health counselling in secondary schools: A space for advice, consultation and support for adolescents in the school environment, where they can access adequate and timely information about their health, provided by a specialized agent (de León and Thourte 2020, 33). This device was conceived as a link between health and educational institutions. Each agent has to oversee three schools and is based in a defined health institution, however, the agent is obliged to attend three days per week to the assigned schools and two days, to the health centre (de León and Thourte 2020, 33).

3. Counselling in sexual and reproductive health and provision of contraceptive methods with emphasis on long-term methods: A space for meeting, listening and providing information in health centres, where adequate information and personalized advice are provided to adolescents so that they can make autonomous and informed decisions about their sexuality, the care of their body and their reproductive health. These counselling devices are expected to raise awareness in adolescents

pertaining to their sexual and reproductive rights and facilitate access to contraceptive methods. Furthermore, the free provision of the latter should be guaranteed (de León and Thourte 2020, 33-34).

4. *Community-based devices*: Strategy designed to promote sexual and reproductive rights and care for adolescents in spaces specifically defined for this purpose in the communities where the policy is implemented. The actions and events under this device are expected to be tailored according to the characteristics and needs of each district (de León and Thourte 2020, 34).

5. Devices for accessing legal and judicial assistance: Based on the detection of a high number of cases of unintended pregnancy as a result of sexual abuse, a Cooperation Framework Agreement was signed between the Secretariat for Access to Justice of the Ministry of Justice and Human Rights and SENAF to provide free legal sponsorship for victims of sexual abuse identified by the territorial agents of the Plan (de León and Thourte 2020, 35).

Regarding institutional strengthening interventions, they are aimed at increasing the capacity of health providers and educational institutions so that they are able to provide and improve the services provided to adolescents (de León and Thourte 2020, 32). Because of this, the Plan created intervention units that consisted of three schools and an associated neighbouring health provider. The idea behind these intervention units is that schools can refer their students to the associated health provider for professional health counselling and services, thus creating a synergy between educational and health institutions (de León and Thourte 2020, 32-33).

Overall, the government was expected to invest in the Plan ENIA approximately USD 96 million between 2018 and 2020, which was its initial end date (UNDP 2018, 10). However, in the latest revision of the policy documents, the end of the Plan was extended to 2023 and its budget increased to over USD 100 million (UNDP 2020, 1).
The intervention was executed in selected districts of the eleven provinces in which the share of live births to adolescent mothers was above the national average: Catamarca, Chaco, Corrientes, Entre Ríos, Formosa, Jujuy, La Rioja, Misiones, Salta, Santiago del Estero and Tucumán. Additionally, although the rate in Buenos Aires was not above the national average, it was selected as a priority province due to its large population and contribution to the absolute number of cases: three out of ten births of teenage mothers occurred in said province (de León and Thourte 2020, 32). In total, the policy was implemented in thirty-six districts (see Appendix III), which were selected based on three essential criteria: the incidence of the phenomenon of unintended pregnancy in adolescence, the density of the adolescent population and the coverage of at least 30% of public secondary schools of the entire province.

The policy was initially implemented in 5 provinces in mid-2017 (Buenos Aires, Corrientes, Jujuy, Misiones and Salta) as a pilot, in order to draw lessons that would allow its scalability (Presidency et al. 2017, 34). However, it was between February and December 2018 that the various devices began to be effectively implemented, but at different paces in each province (de León and Thourte 2020, 50). During 2018 and 2019, 7 additional provinces were added to complete the intervention (Presidency et al. 2017, 34-35) and it was by January 2019 that the Plan was fully operational, but still with different degrees among provinces given the staggered nature of the implementation (de León and Thourte 2020, 50). It should be noted that in Formosa only the sexual and reproductive health devices were installed (de León and Thourte 2020, 51).

#### Indicators and targets to measure the Plan

In order to monitor and evaluate the Plan, three impact indicators were designed: 1) the Unintended Adolescent Pregnancy Rate (UAPR) and 2) the Effective Coverage of Modern Contraceptives (ECMC), and 3) the total number of prevented unintended pregnancies in adolescence (PUP) (Presidency et al. 2017 49-51; de León & Thourte 2020, 76-77).

The UAPR was specifically created for the Plan, and it is measured as the number of unintended births to mothers aged 15-19 years per 1,000 adolescent women in that same cohort (Presidency et al. 2017, 49). In this regard, the baseline was a rate of 41.9 unintended adolescent pregnancies per 1,000 women aged 15-19 years (Presidency et al. 2017, 52), however, there are important discrepancies across the documents in terms of the target set for this indicator. For instance, in original documents, the target set a reduction of 6.8% by 2020, which accounted for a rate of 39.1 unintended pregnancies per 1,000 female adolescents (UNDP 2018, 28). However, in subsequent quarterly reports and project documents, this rate was not mentioned, and it was only in one document presented at the 19th Meeting of the Interinstitutional Group for the Prevention of Pregnancy in Adolescence, when the rate was mentioned again stating that the target was a reduction of approximately 26% by 2020 (Ramos 2019, 7).

The ECMC refers to the provision of contraceptives to young women aged 15 to 19 years old in the selected districts, its baseline was 61,266 young women covered and its target was set at 162,447 adolescents with contraceptive needs covered by 2020 (Presidency et al. 2017, 51). However, this target and its measurement unit changed by 2020, when it was set at 168,813 adolescents aged 10-19 years covered (UNDP 2020, 14).

Lastly, the number of PUP was not described in the original document of the plan, however, the latest revision of the policy document indicates that the baseline was 0 and the target by 2020 was set at 99,024 prevented pregnancies by 2020 (UNDP 2020, 14).

#### The following chart summarizes the evolution of these indicators and their targets by 2020.



Figure 10. Evolution of impact indicators and targets of Plan ENIA

Sources: Presidency et al. 2017, Ramos 2019, de León & Thourte 2020, UNDP 2020.

Additionally, the Plan set a series of indicators and targets to monitor the service provision of the various educational, health and community-based devices considering that the estimated population to be covered reached a total of 1,399,712 young men and women aged 10 to 19 years old (de León and Thourte 2020, 76). According to the theory of change of the policy, these targets had to be met in order to successfully achieve the desired reduction in unintended adolescent pregnancy. However, it should be noted that these are meant to measure the operational aspects of the Plan and they do not reflect the real incidence of the intervention in the phenomenon.

As it can be seen in figure 15, the document review allows identifying certain adjustments in half of the targets to be achieved between the original design and the latest annual report of 2020. However, since targets number 2, 4 and 5 were not specifically mentioned in the latter, it cannot be confirmed that they did not receive an update. Lastly, all targets are cumulative, except for target number 3, which is the annual number of students to be trained.



Figure 11. Evolution of operational targets of the Plan ENIA for the period 2018-2020

Source: de León & Thourte 2020, Ministry of Health 2021.

### What has been achieved?

As previously outlined, in terms of the impact indicators the information is not consistent across the documents. The latest annual report in which these impact indicators were updated corresponds to 2019 and it does not provide information pertaining to the UAPR. However, in terms of the ECMC and PUP the targets were met by 53% and 34%, respectively (UNDP 2020, 6). As it can be seen, the targets set for the impact indicators have been partially met, which shows that the Plan has not been fulfilling the required goals to reduce unintended adolescent pregnancy. Furthermore, the disappearance of the only indicator that directly measures the phenomenon raises doubts as to whether the high investments in the Plan are justified.

The limited progress of the Plan has been explained by the authorities as a potential consequence of the estimation models used to define the targets, which were theoretical models applied by international research in foreign countries that were not tested directly in the Argentine population and, therefore, could be the reason why the Plan is underperforming (UNDP 2020b, 2). As an example, the Plan assumed that providing CSE to the target population would generate a 20% increase in the use of modern contraceptive methods (UNDP 2020b, 2). Lastly, it should be noted that in the 2020 annual report, the progress of these indicators is not mentioned and, instead, 2019 targets and results are repeated.

INDICATOR	TARGET 2019	RESUTLS by December 2019		
UAPR	N/A	-	-	
ECMC	79,534 adolescents	41,982 adolescents	53%	
PUP	94,922 pregnancies	32,574 pregnancies	34%	

Figure	12.	Impact	indicator	achievements	in	2019
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Source: UNDP 2020, UNDP 2020b.

On the other hand, in terms of the operational targets, the situation is more promising. As it can be seen in figure 13, since the beginning of the program, most targets were achieved, except the provision of long-term contraceptive methods and the training of students in CSE. Figure 13 shows the achievements by indicator distinguishing between 2019 and 2020. This distinction is highly relevant since the Covid-19 pandemic affected the delivery of the various counselling services and forced the authorities to redesign the devices (Ministry of Health 2021, 46). The latter explains the reduction in the number of health consultancies in schools and healthcare centres, which had to be replaced with 644 virtual devices (Ministry of Health 2021, 18).

INDICATOR	TARGET 2020	RESUTLS by December 2019		RESUTLS by October 2020	
Schools with pedagogical support (30% of the schools of each province)	1,666	1,441*	87%	1,434	86%
Teachers trained in CSE (10% of techers in each school)	11,131	13,046	117%	14,125	127%
Students in the first cycle received CSE training (annually)	284,476	193,413	68%	87,204	31%
Schools with comprehensive health consultancies	1,245	1,115	90%	1,068	86%
Health centres with comprehensive health consultancies	611	481	79%	457	74%
Young women provided with long-term contraceptive methods	176,335	46,047	26%	68,379	39%

Figure 13. Operational indicators achievements in 2019 and 2020

\* September 2019

Source: de León & Thourte, 2020; Ministry of Health, 2021.

Overall, the Plan spent a total of USD 16.46 million between 2018 and 2020 (UNDP 2020, 15-16; UNDP 2022, Project timeline), which represents approximately 17% of the originally estimated budget of USD 96 million for the period.

Lastly, it should be noted that public authorities have focused on the successful achievements of the operational targets and have repeatedly highlighted the successful intergovernmental coordination achieved by the Plan. In regard to the latter, the Plan has been frequently presented by the authorities as a model policy to replicate as a successful case of intersectoral coordination, which managed to properly address a complex and multicausal phenomenon such as unintended adolescent pregnancy (de León and Thourte 2020, 7).

## 4.2. Empirical analysis

As previously mentioned, the key indicator to fully understand the impact of the policy is the UAPR. However, this rate is not published by the public authorities, and it was not provided through the FOIA request. Nonetheless, this rate can be estimated at the provincial level, since the data provided allows to estimate this rate for the years 2016, 2019 and 2020.

### Estimating the provincial UAPR

The UAPR is the product of the total live births to adolescent mothers aged 15-19 years and the share of unplanned adolescent pregnancies in that same cohort, divided by the overall population of women aged 15-19 years multiplied by 1,000. In the data provided through the FOIA request, the national authorities included the proportion of unintended pregnancies by province for the years 2019 and 2020 which, combined with the live births dataset and population estimates published by the National Institute of Statistics and Surveys (2013), allow to estimate the UAPR by province.

On the other hand, in the various policy documents, the proportion of unplanned pregnancies of women aged 10-19 years was published for the periods 2010-2014. In this regard, given the limited incidence of pregnancies to women below 15 years old, these averaged proportions can be used to analyse the incidence of intentionality in the live births of women aged 15-19 years in 2016. Furthermore, this same methodology was used by policymakers to calculate the baseline for the UAPR at the national level. A list of all the collected proportions of unintended pregnancies by age group can be found in Appendix IV. Lastly, it should be noted that this rate can only be constructed at the provincial level since there is no information pertaining to the population estimates or unintended pregnancy at the district level.

The constructed rates are presented in the figure below, for the years 2016, 2019 and 2020. As it can be seen, in 2016, the UAPR ranged from approximately 16 to 64 unintended pregnancies per

1,000 adolescents aged 15-19 years. The provinces with the highest rates were Formosa, Misiones and Salta, with approximately 64, 61 and 56 unintended pregnancies per 1,000 adolescents respectively. On the other end, Buenos Aires city, Buenos Aires province and Tierra del Fuego had the lowest rates, which were approximately 16 unintended pregnancies per 1,000 adolescents in the first case and 32 unintended pregnancies per 1,000 adolescents in the second two.

In the subsequent years, it is possible to observe that the UAPR was significantly reduced. For instance, in 2019, the indicator ranged between approximately 9-50 unintended births per 1,000 adolescents, and in 2020, it was roughly between 7-39 unintended births. Furthermore, it should be noted that the provinces with the highest rates in all periods were Formosa, Misiones and Chaco.



Figure 14. UAPR by province in 2016, 2019 and 2020

Source: INDEC, 2013; Presidency et al., 2017; FOLA request.

#### Provincial results

As previously outlined, the difference-in-difference analysis was conducted once the parallel trends assumption could be verified through the visual analysis. However, even though it could only be verified for the share of live births, the UAPR was also included in the regression analysis to test the effect of the policy.

At the provincial level, the analysis was conducted on a total of 50 to 52 observations across four different models. The first model analyses the effect of the program on the share of live births to adolescent mothers aged 10-14 years, the second model examines the effect on the share of live births to women aged 15-19 years, the third model assesses the effect of the program on both cohorts together and the last model analyses the impact on the UAPR.

In general terms, the implementation of the plan did not generate a significant effect in the treated provinces. In the first model, the coefficient of the interaction term is negative but negligible since it is very close to 0. In this regard, it should be considered that the share of live births to girls under 15 years old is on average approximately 0.5%, which is a very small percentage that does not allow obtaining significant results with the regression. In the case of the second model, the coefficient implies that the Plan generated a slight increase of 0.07% on average in the share of live births to all adolescent mothers are considered to the control group. In the third model, when births to all adolescent mothers are considered together, the coefficient is also positive, and it means that the births to adolescent mothers aged 10-19 years. Finally, in the case of the UAPR, the coefficient shows that the Plan had a negative effect that translated into a reduction of 0.88 unplanned pregnancies per 1,000 adolescents aged 15-19 years in the treated provinces.

On the other hand, the treatment variable is significant and positive across all models. In early adolescence, the coefficient shows that treated provinces had an increase of 0.34%, whereas in late adolescence and the combined analysis of both cohorts it was 4.83% and 5.16% respectively. Lastly,

the treatment generated an increase of 18.26 unplanned adolescent pregnancies per 1,000 women aged 15-19 years. These results are highly unexpected since they imply that the treatment generated the opposite effect to that expected.

Contrary to the previous case, the period variable shows a negative coefficient across all models, which means that treated provinces had a reduction in the share of live births and unintended pregnancies in 2019 when compared to 2016. In the first three models, during 2019 there was a reduction of 0.07%, 3.31% and 3.41% in the share of live births, respectively, with the first model being the only one with a coefficient that is not significant. In the case of the UAPR, there was a significant reduction of 10.11 unintended pregnancies per 1,000 adolescents in 2019 when compared to 2016.

Overall, these results verify the limited effect of the policy on unintended pregnancies and adolescent motherhood.

	Dependent variable:					
	Early adolescents Late adolescent		All adolescents	UAPR		
	(1)	(2)	(3)	(4)		
Constant	$\begin{array}{c} 0.27^{***} \\ (0.15, 0.39) \end{array}$	12.70 <sup>***</sup> (11.04, 14.36)	12.97 <sup>***</sup> (11.22, 14.72)	30.04 <sup>***</sup> (24.31, 35.78)		
Treatment	$\begin{array}{c} 0.34^{***} \\ (0.16, 0.51) \end{array}$	4.83*** (2.39, 7.27)	5.16 <sup>***</sup> (2.59, 7.74)	18.26 <sup>***</sup> (9.83, 26.70)		
Period	-0.07 (-0.25, 0.10)	-3.31 <sup>***</sup> (-5.65, -0.96)	-3.41 <sup>**</sup> (-5.98, -0.84)	-10.11 <sup>**</sup> (-18.22, -2.00)		
Treatment*Year	-0.0001 (-0.25, 0.25)	0.07 (-3.38, 3.53)	0.10 (-3.60, 3.81)	-0.88 (-12.81, 11.05)		
Observations	50	52	50	52		
$\mathbb{R}^2$	0.38	0.48	0.47	0.49		
Adjusted R <sup>2</sup>	0.34	0.45	0.44	0.46		
Residual Std. Error	0.23 (df = 46)	3.17 (df = 48)	3.34 (df = 46)	10.94 (df = 48)		
F Statistic	9.35 <sup>***</sup> (df = 3; 46)	14.80 <sup>***</sup> (df = 3; 48)	$ \begin{array}{c} 13.87^{***} (df = 3; \\ 46) \end{array} $	$ \begin{array}{c} 15.44^{***} (df = 3; \\ 48) \end{array} $		
Note:				*p**p***p<0.01		

Table 2. Regression results, provincial level

During the period 2011-2019, there were a total of 116,138 live births. As figure 15 shows, most of these births occurred in Belgrano, which concentrated approximately 36% of all births in the province. Furthermore, if one also considers El Carmen (15%), Ledesma (12%) and San Pedro (11%), these four districts account for approximately 74% of births in Jujuy. Additionally, when the data of young women and girls below 20 years old are analysed, it can be seen that the pattern remains. During the period, there were 20,909 births to adolescent women and 78% of them concentrated in Belgrano (31%), El Carmen (17%), Ledesma (13%) and San Pedro (11%). According to the information available from the last census, these four districts are consequently the most populated in the province (National Institute of Statistics and Surveys 2013).



Figure 15. Total live births in Jujuy by district (2011-2019)



Figure 16. Total live births to adolescents in Jujuy by district (2011-2019)

As previously noted, one of the main indicators used to design the Plan ENIA was the share of live births to adolescent mothers. In this regard, its evolution in Jujuy shows that there has been a decline in the cohort of young women aged 15-19 years. As it can be seen, between 2010-2015 there was a relatively stable share of births, surrounding 18% to 19%, but after 2016, a declining trend started to unfold and nowadays the proportion of births is approximately 13%. For the case of girls aged 10-14 years, there haven't been any changes during the last decade. Nonetheless, it should be noted that it has remained very low and close to 0%.





However, when these proportions are analysed by district, certain disparities emerge. For instance, out of the 16 districts of the province, approximately 11 have been above the provincial average throughout the entire period. In the case of births corresponding to mothers aged 15-19 years, there were significant gaps between the districts with the highest and lowest share of live births to adolescent mothers. For instance, in 2011 this gap was twelve percentage points, between Santa Bárbara (29%) and Yavi (17%)<sup>2</sup>, and in 2019 it was fifteen percentage points, between Santa Catalina (25%) and Belgrano (10%).

Specifically, the districts of Santa Catalina, Susques, Santa Bárbara and Cochinoca were the ones that consistently had the highest share of live births to adolescent mothers, ranging from 29-24% in 2011 to 25-17% in 2019. It should be noted that the treated districts of Belgrano and San Pedro have been below the provincial average for almost the entire period, with the only exception being San Pedro in 2012, 2013 and 2018, in which the district rate was slightly above the provincial average.

For the case of girls aged 10-14, the evolution of the indicator was more erratic. For instance, districts like Rinconada, Tumbaya, Susques and Valle Grande had proportions that were between 1-3% only in a few years, and 0% in the remainder of the series. On the other hand, the districts of Ledesma, El Carmen, Cochinoca, Belgrano, San Pedro and Palpalá were more stable and showed rates that oscillated between 0.2% and 0.9% during the period.

The following figure allows comparing the evolution of the share of live births to adolescent mothers aged 15-19 years in the 16 districts of Jujuy.

<sup>&</sup>lt;sup>2</sup> It should be noted that the lowest proportion was found among adolescents who claimed to reside in foreign countries (approx. 12%).

Figure 18. Share of live births to adolescents aged 15-19 years in Jujuy by district (2011-2019)

































In the specific case of the treated districts, Belgrano and San Pedro had in 2011 approximately 18% of live births to adolescents aged 15-19 years. However, as the following figures show, there was a decline in these indicators by the end of 2019. Belgrano had a sustained negative trend, while San Pedro faced some setbacks in 2016 and 2018. In the case of girls aged 10-14 years, Belgrano had approximately 0.31% of births and San Pedro 0.66% of births in 2011, but both districts saw a decline by the end of the period to 0.24% and 0.17%, respectively.



Figure 19. Share of live births to adolescents in Belgrano and SanPedro (2011-2019)



### District-level results

As previously mentioned, the UAPR could not be constructed for the district level, which is why the following analysis only includes the share of live births to adolescent mothers as the outcome variable. The regression was run with 32 observations across three models, considering firstly only early adolescents, secondly late adolescents and thirdly, both age cohorts combined.

In the case of early adolescence, the coefficient is positive, and it implies that the access to the services provided by the Plan ENIA generated an increase of 0.34% in the treated districts between 2016 and 2019. In the case of late adolescence, the interaction term has a negative coefficient which demonstrates that the policy derived in a reduction of 0.92% on average in the share of live births of Belgrano and San Pedro, compared to the control group. Lastly, when considering both age cohorts, the plan ENIA had an average effect of -0.58% on these districts.

When analysing the treatment variable, the coefficient is negative across all models. In the specific case of early adolescents, it reflects a reduction of 0.39% in treated districts, whereas late adolescents had a reduction in live births of 4.66%. In the third model, the treatment generated a decrease of 5.05% and it is the only coefficient that is significant.

Lastly, the period variable is also negative across all models, which means that during 2019 there was a reduction in the share of live births when compared to 2016. This decrease was 0.41%, 4.13% and 4.54% in each model.

Overall, even though they are not significant, the results align with the expectations that the treatment induces a reduction in adolescent pregnancy.

	Dependent variable:				
	Early adolescents	Late adolescents	All adolescents		
	(1)	(2)	(3)		
Constant	0.66 <sup>***</sup> (0.34, 0.98)	20.48 <sup>***</sup> (18.44, 22.53)	21.15 <sup>***</sup> (19.13, 23.16)		
Treatment	-0.39 (-1.29, 0.52)	-4.66 (-10.45, 1.13)	-5.05* (-10.74, 0.65)		
Period	-0.41* (-0.87, 0.04)	-4.13*** (-7.03, -1.24)	-4.54*** (-7.39, -1.70)		
Treatment*Year	0.34 (-0.95, 1.63)	-0.92 (-9.11, 7.26)	-0.58 (-8.64, 7.47)		
Observations	32	32	32		
$\mathbb{R}^2$	0.11	0.36	0.40		
Adjusted R <sup>2</sup>	0.02	0.29	0.33		
Residual Std. Error ( $df = 28$ )	0.61	3.91	3.84		
F Statistic (df = 3; 28)	1.19	5.18***	6.10***		
Note:			*p**p***p<0.01		

Table 3. Regression results in Jujuy

### 4.3. Limitations

The results obtained above should be considered alongside the limitations of the analysis. Firstly, the share of live births does not properly reflect unintended pregnancies. As previously mentioned, the proportion of unplanned pregnancies is high across all provinces, which is why it could be argued that the share of live births is a good approximate to intentionality. However, this indicator does not capture the cases of miscarriage or when teenagers decide to end unplanned pregnancies before full term. This could be improved with the use of the UAPR for the entire period, however, this rate is not published or provided by the authorities.

Secondly, and related to the above point, the UAPR could not be constructed for the entire period of 2010-2020, which is why it was not possible to test the parallel trends assumption with this indicator.

Lastly, the data provided by the Argentine government was very aggregated, which resulted in a limited number of observations and represented a limitation to adding covariates.

## 4.4. Discussion and policy implications

Even though the abovementioned limitations should be considered, the findings still allow to reflect on the potential problems surrounding the Plan ENIA.

In this regard, the results of the empirical analysis provide further insights as to why the government could have decided to eliminate the only indicator that directly measures the phenomenon: the UAPR. This indicator was specifically designed to measure the success of the Plan, yet no information is provided pertaining to its progress. Instead, indicators that indirectly account for the problem of teenage pregnancy are used, such as the ECMC and the PUP. However, the progress in these indicators is limited and authorities have

acknowledged in their reports that the program is underperforming. Therefore, it could be the case that these decisions respond to the fact that the policy is not delivering the expected outcomes, as verified by the regression results.

The unmet impact targets could be explained, as the policymakers have argued, by the fact that the assumptions underlying the estimation of the impact indicators were not correct since they were directly taken from international research without being tested in the Argentine context. This argument could explain why despite reaching operational targets, there is no effect on unintended adolescent pregnancy. For instance, if the assumptions were not correct from the beginning, the estimation of the required goods and services to be delivered each year would have also been mistaken and their delivery wouldn't have modified the UAPR.

Furthermore, an additional explanation could be that there is a problem in the district selection. Even though the policy has been implemented in provinces with critical adolescent pregnancy rates, two out of the three criteria used to select the treated districts were aimed at covering a large population of adolescents and schools. In this regard, it should be noted that districts that have a high density of adolescent population and a large number of schools are not necessarily the ones with the most pressuring cases of unintended adolescent pregnancies. The case of Jujuy illustrates this issue. As previously mentioned, Belgrano and San Pedro had a lower-than-average share of live births to adolescent mothers, yet they concentrated approximately half of the overall births to adolescent mothers of the province. The case of Belgrano is particularly salient. The district accounts for 31% of all live births to adolescents of the province and is also the most populated district. Furthermore, before the implementation, Belgrano had 14.6% of live births to adolescents aged 15-19 years and was the district with the lowest proportion. This scenario reduces the scope of success of the policy, since the proportion of adolescent pregnancy is already low. Therefore, this would

imply that the government is investing significant resources in covering a large population in which adolescent pregnancy is not as problematic as in other smaller, yet more critical regions.

Moreover, the above situation is worsened if the share of unintended pregnancies is considered. For instance, in the case of Jujuy this proportion was 76% prior to the implementation, which means that approximately 24% of adolescent pregnancies were planned. Therefore, considering that the share of live births in Belgrano was already low and that in Jujuy, on average, 24% of teenage pregnancies were planned, the potential impact of the policy in the district is even more limited.

Additionally, as previously discussed, poverty and early motherhood are interlinked. Therefore, it is more likely to find higher proportions of adolescent pregnancies in areas with critical socioeconomic contexts. In this regard, according to the latest information available, the district of Belgrano was one of the districts with the least share of households with unmet basic needs in 2010 (Treasury 2018, 8), which supports the idea that the policy is not properly defining the districts to be intervened.

The incorrect selection of districts is a highly critical issue in this context since it means that the government is not correctly addressing the needs of adolescents who require it most. As it has been discussed in the previous sections, teenage pregnancy entails a series of extremely negative effects for the development of young women, which is why a revision of the policy is fundamental in order to guarantee not only a correct use of public resources, but also the coverage of the right target population.

## 5. Conclusions

The analysis conducted does not demonstrate that the policy is significantly reducing unintended adolescent pregnancy, nor the share of live births to adolescent women. Even though the plan has been successfully achieving its targets in terms of the educational, health and community-based devices, these efforts seem to be insufficient to impact unintended pregnancy in the treated provinces and districts. The fact that the government does not publish data pertaining to the UAPR, and the acknowledgement done by program managers about the potential incorrect estimations could be considered as reinforcing the notion that the policy is not properly targeting the phenomenon.

Furthermore, there might be a problem in the selection of the districts in which the policy is being implemented. Since two of the criteria used to select the treated districts within a province were aimed at covering a large adolescent population and a high number of schools, the selection of districts was biased towards reaching a large number of beneficiaries and not necessarily those regions with a substantial problem in terms of unintended adolescent pregnancies. Furthermore, considering that approximately 15-30% of adolescents nationwide desire to become mothers, by selecting districts in which the live births to adolescents is already low, the potential effect of the policy is even more limited.

Overall, these findings show that the Plan ENIA faces important challenges when it comes to addressing the issue of unintended adolescent pregnancy. In this regard, a review of the original estimations and the introduction of adjustments to the district selection criteria should be made in order to develop feasible impact targets and redirect the efforts to the areas in which the phenomenon is more critical. Nonetheless, the results should be taken with caution since there are a series of limitations related to the characteristics of the data obtained to conduct the analysis.

# 6. Appendices

# Appendix I

Histograms of the share of live births in 2016





## Histograms of the share of live births in 2019



# Appendix II



Parallel trends, provincial level (2010-2020)

Parallel trends in Jujuy (2011-2019)





## List of districts

PROVINCE	DISTRICTS			
Buenos Aires	Almirante Brown			
	Lanús			
	General San Martín			
	Quilmes			
	Morón			
	San Isidro			
Catamarca	Capital			
	Belén			
	Valle Viejo			
Chaco	General Güemes			
	San Fernando			
	Chacabuco			
Corrientes	Capital			
	Goya			
Formosa	Capital			
	Pilcomayo			
Jujuy	Manuel Belgrano			
	San Pedro			
Misiones	Capital			
	Guaraní			
	Oberá			
Salta	Capital			
	Orán			
Santiago del Estero	Capital			
_	Banda			
	Río Hondo			
	Robles			
Tucumán	Capital			
	Cruz Alta			
	Tafi Viejo			
Entre Ríos	Gualeguaychú			
	Paraná			
	Concordia			
La Rioja	Capital			
	Chilecito			
	Rosario Vera Peñaloza			

# Appendix IV

	Mothers under 19 years old	Mothers 15-19 years	Mothers 10-14 years	Mothers 15-19 years	Mothers 10-14 years
	2010-2014	2019	2019	2020	2020
La Rioja	79%	98%	100%	100%	0%
Santiago del Estero	78%	59%	78%	80%	91%
Salta	77%	79%	87%	83%	94%
Jujuy	76%	83%	95%	86%	97%
Formosa	75%	66%	76%	55%	67%
Tierra del Fuego	75%	74%	100%	74%	100%
Catamarca	73%	74%	83%	74%	94%
Cordoba	71%	74%	86%	79%	91%
Neuquén	71%	68%	83%	69%	88%
Santa Cruz	71%	72%	83%	79%	75%
Misiones	70%	72%	79%	70%	78%
Corrientes	70%	64%	82%	68%	92%
Chubut	69%	75%	100%	69%	80%
San Luis	69%	71%	70%	71%	70%
La Pampa	69%	67%	63%	65%	89%
Rio Negro	69%	69%	95%	70%	80%
Buenos Aires city	69%	72%	88%	76%	93%
Tucuman	68%	76%	88%	74%	81%
COUNTRY AVERAGE	68%	71%	85%	72%	85%
Mendoza	67%	67%	88%	64%	82%
Buenos Aires	66%	71%	91%	73%	89%
San Juan	64%	69%	90%	70%	89%
Entre Rios	64%	63%	85%	61%	73%
Chaco	57%	68%	80%	69%	86%
Santa Fe	54%	74%	93%	60%	69%

## Share of unintended pregnancies by age group of the mother and province.

Sources: Presidency et al., 2017; FOLA requests.

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