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Soap Operas and Fertility: Evidence from Brazil†

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We estimate the effect of television on fertility in Brazil, where soap operas portray small families. We exploit differences in the timing of entry into different markets of Globo, the main novela producer. Women living in areas covered by Globo have significantly lower fertility. The effect is strongest for women of lower socioeconomic status and in the central and late phases of fertility, consistent with stopping behavior. The result does not appear to be driven by selection in Globo entry. We provide evidence that novelas, and not just television, affected individual choices, based on children's naming patterns and novela content. (*JEL* J13, J16, L82, O15, Z13)

In the early 1990s, after more than 30 years of expansion of basic schooling, over 50 percent of 15 year olds in Brazil scored at the lowest levels of the literacy portion of the Programme for International Student Assessment (PISA), indicating that they could not perform simple tasks, such as locating basic information within a text. People with 4 or fewer years of schooling accounted for 39 percent of the adult population in the urban areas, and nearly 73 percent in rural areas as measured by the 2000 census. On the other hand, the share of households owning a television set had grown from 8 percent in 1970 to 81 percent in 1991, and remained approximately the same 10 years later. The spectacular growth in television viewership in the face of slow increases in education levels characterizes Brazil as well as many other developing countries. Most importantly, it suggests that a wide range of messages and values, including important ones for development policy, have the potential to reach households through the screen as well as through the classroom.

This paper examines the effect of three decades of expansion of commercial television on fertility patterns in Brazil. Fertility is an interesting dimension of development to explore in the context of Brazil. In fact, this country experienced a dramatic drop in fertility in the past 40 years. The total fertility rate was 6.3 in 1960, 5.8 in

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1970, 4.4 in 1980, 2.9 in 1991, and 2.3 in 2000.[1] It is noteworthy that this decline was not the result of deliberate government policy. In Brazil no official population control policy was enacted by the government and, for a period of time, advertising of contraceptive methods was even illegal. The change therefore originated from a combination of supply factors related to the availability of contraception and lower desired fertility. In this paper we focus on the latter and investigate one of the channels that may have led Brazilians to desire smaller family sizes. While there were certainly important changes to the structure of the Brazilian economy associated with fertility decline, in this paper we focus on television as a vehicle for shaping individual preferences toward fewer births.

We are interested in the effect of exposure to one of the most pervasive forms of cultural communication in Brazilian society, soap operas or *novelas*. Historically, the vast majority of the Brazilian population, regardless of social class, has watched the 8 PM *novela*. In the last decades, one group, Rede Globo, has had a virtual monopoly over the production of Brazilian novelas. Our content analysis of 115 novelas aired by Globo in the two time slots with the highest audience between 1965 and 1999 reveals that 72 percent of the main female characters (age 50 and lower) had no children at all, and 21 percent had only one child. This is in marked contrast with the prevalent fertility rates in Brazilian society over the same period.

To identify the effects on fertility of exposure to this kind of family values, we exploit information on the timing of Globo entry into different areas. Our key independent variable is a dummy that captures whether an area receives the Globo signal in a given year, and is constructed from information on the location and radial reach of Globo broadcasting and retransmitting stations in every year.

To measure fertility we use individual level data from the 1991 census and build a retrospective history of births over the period 1979–1991 for women aged 15 to 49. We estimate the likelihood that a woman gives birth in a given year as a function of the availability of Globo signal in the area where the woman lives, plus time varying controls, area, and time fixed effects. Ceteris paribus, Globo coverage is associated with a decrease in the probability of giving birth of 0.5 percentage points, which is 5 percent of the mean. The magnitude of this effect is comparable to that associated with an increase of 1.6 years in women's education. The (negative) effect of Globo exposure is stronger for households with lower education and wealth, as one would expect given that these households are relatively less likely to get information from written sources or to interact with peers that have small family sizes. There is also considerable heterogeneity along the age dimension. Interestingly, the effect of Globo coverage is insignificant for women aged 15–24, and is quantitatively larger and significant for women aged 25–34 (a decrease of 6 percent of the mean probability of giving birth for this age group), and for women aged 35–44 (a decrease of 11 percent of the mean). This is consistent with the demographic literature on Brazil, which has highlighted how the decline in fertility occurred mainly through the stopping of childbearing and not through delaying first births.

[1] Source: Lam and Marteleto (2005).

The decade between 1980 and 1991 was the period of most rapid expansion of the Globo network. The fraction of women reached by the Globo signal rose from 0.45 in 1980 to 0.92 in 1991. Our estimates suggest that, ceteris paribus, this expansion can account for about 7 percent of the reduction in the probability of giving birth over this period, which declined from 0.11 in 1980 to 0.08 in 1991 for women in our sample.

In the last part of the paper, we discuss the extent to which these results may be interpreted as related to television viewing per se, or also to the type of programs (*novelas*) broadcast by Globo. We find evidence consistent with the idea that novelas did play a role in family decisions, including those related to fertility. Our first piece of evidence comes from naming patterns among school-aged children. Using administrative data on a random sample of Minimally Comparable Areas (AMCs), we find that the parents living in areas that are reached by Globo are significantly more likely to name their children after the main characters of novelas aired in the year in which the children are born. In particular, we estimate the probability that the 20 most popular names chosen by parents for their newborns in a given metropolitan area include one or more names of the main characters of novelas aired in the year in which the child was born. This probability is 33 percent if the area where parents lived received the Globo signal and only 8.5 percent if it did not, a statistically significant difference. Since novela names tend to be very idiosyncratic in Brazil, we take this evidence as suggestive of a strong link between novela content and behavior.

Our second piece of evidence regarding the role of content exploits variation in novela plots across years, as well as variation in the potential extent of identification between viewers and novelas' main characters. We find that decreases in fertility were stronger in years immediately following novelas that portrayed messages of upward social mobility, consistent with the desire to conform with behavior that leads to positive life outcomes. Also, we find that the effect of Globo availability in any given year was stronger for women whose age was closer to that of the main female characters portrayed that year. This "frame salience" effect suggests that Globo programming had an impact on fertility choices partly because it portrayed a reality with which Brazilian viewers could easily identify.

A key challenge for our identification strategy is the possibility that Globo presence may be correlated with unobserved determinants of fertility. Because we employ area fixed effects in all regressions, the relevant concern is whether Globo entry may be correlated with pre-existing fertility trends. We address this issue in several ways. First, we regress fertility on a set of dummies going from nine years before Globo entry to nine years after. The results are displayed in Figure 4 (discussed below) and show that there is no decline in fertility *before* the year in which Globo enters, while fertility sharply declines *one year after* Globo enters. Second, using data from the 1970 census, we show that, after controlling for the same characteristics we use in our benchmark regression, the year of Globo entry is not correlated with the initial fertility level. Third, we conduct a series of placebo regressions and find that future Globo entry in an area does not predict current fertility; randomly generated years of Globo entry do not predict fertility; and Globo presence in neighboring areas does not predict local fertility. Finally, as we discuss in Section V, our results on content exploit variation within area-year or across years in a way that is intrinsically *non-monotonic*, and it would be difficult to explain those results as originating from trends.

Our paper is related to two strands of literature. The first is the literature on the determinants of fertility, with particular reference to the role of television in Latin America. We shall not review this literature here, as we discuss it in Section I in the context of Brazilian *novelas*. It should be observed that with respect to these contributions, which are mostly sociological and based on case studies, our work is the first attempt to identify a causal link with econometric techniques using a nationally representative dataset.

The second strand of literature relates to the effects of the media on social and political outcomes. Some of this literature studies the role of newspapers and radio as mechanisms of accountability for politicians (Besley and Burgess 2002; Stromberg 2004), and the effects of the media on voters' behavior (Gentzkow 2006; DellaVigna and Kaplan 2007). Other studies investigate the effects of television on *social*—as opposed to political—behavior, in particular, children's school performance (Gentzkow and Shapiro 2008) and adults' participation in social activities and trust (Olken 2009). Related to the topic of our paper, a recent contribution by Jensen and Oster (2009) estimates the impact that the entry of cable TV had on subjective measures of female autonomy, school enrollment, and fertility. Our analysis differs from theirs in two respects. The first is the breadth of the area and time period covered. Jensen and Oster (2009) use survey data on 180 rural villages in India for the years 2001–2003. We consider the universe of Brazil's municipal areas from the 1970s to the early 1990s. This allows us to look at the long-run impact of TV viewing on fertility. At the same time, the census data we use does not contain information on attitudes. The second difference with respect to Jensen and Oster (2009)—and to most of the above cited literature—is that they do not exploit information on the *content* of media programs. Our results suggest that what matters is not only television viewing, but also viewing a set of programs (*novelas*) that contain certain messages and are framed in a way that makes it easy for the viewers to directly relate to the situations portrayed.

Two recent papers have explored the role of media content.[2] One is the paper by Dahl and DellaVigna (2009), who focus on the short-run effects of movie violence on crime. The second is the paper by Paluck (2009), who estimates the effects on beliefs and norms of a radio soap opera featuring messages of intergroup tolerance in Rwanda. Our work shares a similar motivation as Paluck's, in that we are also interested in the possibility that media programs may become vehicles of development policy.

The remainder of the paper is organized as follows. In Section I, we provide some information on Brazilian novelas and on their main producer, Rede Globo. Sections II and III illustrate, respectively, our empirical strategy and the data. Section IV

[2] Another paper that indirectly suggests a role of content, but in the form of advertising, is that of Baker and George (2010), which exploits the spread of television across markets in the United States in the 1950s to show that advertising increased household debt for durable goods.

contains our econometric results. Section V discusses the interpretation of our results in terms of TV exposure and media content. Finally, Section VI concludes.

I. Background on Brazilian *Novelas*

Television has played a central role for the functioning and reproduction of contemporary Brazilian society, as well as in the process of articulating new behavioral patterns in the country (Faria and Potter 1999). In the span of three decades, exposure to television messages rose from zero to universal in urban areas and reached almost half of the households in rural areas. One of the reasons for the massive influence of television in the country is the strength of its oral tradition. In the early 1990s, after more than 30 years of expansion of basic schooling, adult literacy had reached only 80 percent (Faria and Potter 1999). Ten years later, people with 4 or fewer years of schooling accounted for 39 percent of the adult population in the urban areas, and 73 percent in rural areas.[3] Another characteristic of the country that contributes to the impact of television is the high rate of geographical, occupational, and social mobility. In this context, television helps give a sense of belonging (Faria and Potter 1999). The effect of television on values and attitudes is by no means confined to urban areas, but also reaches remote communities in the Amazon, inducing, among other things, a reorientation of beliefs on the role of women in society toward greater autonomy (Kottak 1990).

Rede Globo.—Television became a mass medium in Brazil earlier than in most developing countries. The military government in power in 1964 saw the potential of television as a tool for integrating the country, creating a national identity, developing markets, and controlling political information. The military further encouraged the expansion of television by subsidizing credit for set sales and by promoting the growth of one specific network to encourage national production. Rede Globo, selected as the privileged partner, began functioning in 1965 and quickly became the leading national network. Today, Globo is the fourth biggest commercial network in the world, after ABC, CBS, and NBC, with a coverage area of 98.4 percent of the municipalities in Brazil, reaching over 183 million Brazilians.[4]

For the purpose of our identification strategy, it is important to understand how the expansion of Rede Globo occurred. During the military regime of General Joao Baptista Figueredo (1978–1985), the concessions of television networks followed clientelistic, political, and ideological criteria. The dictator had the absolute power to give licenses for radio and television stations. Although this law was changed to put the congress in charge of approving licenses, the clientelistic criterion was not abandoned (Lima 2001). The media played a central role for the military regime. As recognized by several authors, the regime put a strong emphasis on national integration and the media were a key vehicle for cultural, political, and economic integration. During that period the association between the government and Rede Globo was clear (Miguel 2001).

[3] Authors' calibrations based on the 2000 Census for the population aged 18 and older.
[4] Source: http://redeglobo.globo.com.

The government of President Jose Sarney (1985–1990), the first elected government after the fall of the military dictatorship, provides a good example on how the clientelistic provision of licenses persisted. In 1989, there was a constitutional amendment to increase the government term from four to five years. During the two years before, the government gave a large number of TV and radio licences to companies associated with congressmen who later voted in favor of the constitutional amendment (Costa and Brener 1997). A similar situation occurred during the first mandate of President Fernando Henrique Cardoso (1995–1998), when the congress was about to vote a constitutional amendment to approve reelection. Again a large number of licenses for retransmission stations were given to firms associated with congressmen (Lima and Capparelli 2004). The instrumental use of licenses for clientelistic and political goals helps our identification strategy in that it mitigates concerns that Globo entry may be driven by fertility trends.

Obviously, political clientelism and a solid marketing strategy had to be complemented with a viable, quality product. Such product was the *novelas*. Presently a typical novela is watched by anywhere between 60 and 80 million viewers. The reason for the enormous success of this television format can be traced to three aspects. First, novelas are set up in easily recognizable locations and deal with the daily life of Brazilians, so that viewers can relate to the story. Second, novelas use a colloquial language, a typical middle-class setup, and often include an element of social mobility that is appealing to viewers. Third, the network spares no expense in order to produce novelas of the highest technical and artistic quality. In fact, to date, each episode of an average novela costs around $125,000, which is about 15 times more than the production costs of the other Latin American novela powerhouse, the Mexican Televisa (de Melo 1988).

Fertility Decline in Brazil.—As mentioned in the introduction, in a few decades fertility fell rapidly in Brazil, with the total fertility rate (TFR) declining by over 50 percent from 1970 to 1990. With the military government far more interested in populating remote areas to protect borders than in organizing and promoting family planning programs, Brazil has often been described as an ideal environment for exploring specific determinants of fertility decline.

A large demographic literature has examined the proximate determinants of fertility. High rates of female sterilization have played a role as a main proximate determinant, along with increased use of the birth control pill (Merrick and Berquó 1983; Rutenberg, Ochoa, and Arruda 1987). The rank of sterilization as a preferred method of contraception is related to institutional policies encouraging the delivery of births by cesarean section as well as government propaganda in the late 1960s, which warned of the dangers of the birth control pill. The role of abortion, illegal in Brazil, is less clear.

The timing of births over the life cycle has also been explored in detail. Changes in the starting age of fertility have been negligible, related both to relatively stable marital patterns as well as persistently high rates of adolescent fertility. An increased spacing of births has contributed to the overall decline, although the stopping of childbirth at younger ages has been found to be more important (Martine 1996; Flores and Nuñez 2003). While the increase in education explored by Lam and

Duryea (1999) can explain a large share of the overall decline, none of the aforementioned factors replicate the intertemporal and interspatial pace of the decline satisfactorily. Additionally, these studies typically do not address the underlying forces driving the higher demand for contraceptives or education.

Novelas and Fertility.—One of the ideas advanced in sociological and communication studies is that there may be a link between the diffusion of television, and specifically of novelas, and fertility decline (e.g., Vink 1988). Brazilian novelas are rather different from stereotypical Latin American telenovelas, because of the high quality of their plots and of their making. Since military-imposed censorship was in effect during most of the developmental period of the novela, a number of important writers started to write screen plots for Rede Globo. Several of them were having political problems with the military government. These authors saw the opportunity of employment in the cultural industry as a way to fight dictatorship through the reinforcement of new ideals in their plots. In addition to freedom, recurrent themes included criticism of religious and traditional values; consumption of luxury goods; the portrayal of wealthy families; the display of new lifestyles; the circulation of modern ideas, such as female emancipation in the work sphere; the female pursuit of pleasure and love, even if through adultery; display of homosexuality; criticisms to machismo; and emphasis on individualism (Rios-Neto 2001, Fadul 1999).

Interestingly, family planning and population control were not explicitly addressed by Brazilian novelas. Until the late 1970s, the government was reluctant to adopt population control policies. Even advertising of contraception methods was considered illegal (McDonough and Sousa 1981). Still, novelas in Brazil were, and still are, loaded with material directly or indirectly relevant to family size preferences. Television reiterates the disclosure of a very specific model of family—small, beautiful, white, healthy, urban, middle and upper-middle class consumerist family. Novelas have been a powerful medium through which the small family has been idealized. On the one hand, in many instances the content of the story is related to the urban middle class of Rio de Janeiro and Sao Paulo spreading its behavioral patterns. On the other hand, the small family may result from the constraints imposed by the plot. In Brazilian novelas the drama typically revolves around four or five families. In order to keep the number of characters manageable, no family can be very large.

The findings of an experimental focus group discussion illustrate this point. Herzog (1994) asked the group subjects, adult women of middle and lower-class backgrounds, to portray the families that are more frequently displayed on television by using available photographs, drawings, and printed material. They asked the same subjects to portray the family of common people using the same material. The results were clear. Television families are small, rich, and happy. The families portrayed as common people are poor, contain more children, and the faces reveal unhappiness.

To sum up, constant exposure to smaller, less-burdened television families, may have created a preference for fewer children and greater sensitivity to the opportunity costs of raising children (Faria and Potter 1999).

II. Empirical Strategy

In this paper, we test the conjecture originally advanced by the sociological literature. We shall do so by combining information on fertility with information on the timing of Rede Globo penetration in different areas of Brazil.

We estimate the probability that a woman gives birth in a given year as a function of individual controls and Globo presence. Using the 1991 Brazilian Census, we build a retrospective history of a woman's fertility for the previous 12 years. We thus have 13 observations (years) for each woman in childbearing age. We estimate the following linear probability model:

$$y_{ijt} = \mathbf{X}_{ijt}\beta + \gamma G_{jt} + \mu_j + \lambda_t + \varepsilon_{ijt}, \tag{1}$$

where y_{ijt} is equal to 1 if a woman i living in area j gives birth to a child in year t; G_{jt} is a dummy equal to 1 if area j received the signal of Rede Globo at least one year prior to year t (to account for the length of pregnancy); $\mathbf{X}_{ijt}$ is a set of time-varying controls at the individual and at the AMC level; μ_j are AMC fixed effects and λ_t are year fixed effects. By adding area fixed effects (μ_j), we control for time-invariant unobserved characteristics that affect fertility and may also be correlated with the timing of Globo entry. The time dummies instead capture the secular (declining) trend in fertility that is common to all areas. Our identifying assumption is that, conditional on area and time fixed effects and on the time-varying controls $\mathbf{X}_{ijt}$, the year of Globo entry is orthogonal to the error term. We shall test the plausibility of this assumption in Section IVB. In all regressions our standard errors are clustered by AMC.

We shall estimate (1) both for the full sample of women aged 15–49 and for different age brackets. We also test for the presence of heterogeneous effects on the impact of Globo according to socioeconomic status and estimate the interacted specification:

$$y_{ijt} = \mathbf{X}_{ijt}\beta + \gamma G_{jt} + \delta(G_{jt} \times x_{ijt}) + \mu_j + \lambda_t + \varepsilon_{ijt}, \tag{2}$$

where x_{ijt} is, alternatively, education and wealth.

We then consider if exposure to television during different periods of a woman's life leads to different fertility outcomes. For this purpose, we modify our estimating equation as follows:

$$y_{ijt} = \mathbf{X}_{ijt}\beta + \gamma_1 N_{ijt}^{10-19} + \cdots + \gamma_4 N_{ijt}^{40-49} + \mu_j + \lambda_t + \varepsilon_{ijt}, \tag{3}$$

where N_{ijt}^{10-19} is the number of years woman i living in area j at time t was exposed to Globo programs at ages 10–19, 20–29, and so on in 10-year brackets until age 40–49.

There are two potential sources of endogeneity in the timing of Globo entry into different locations. The first is that the Ministry of Telecommunications may have used selective criteria in awarding licenses. As we explained in Section I, the considerations underlying the Ministry's choices were mostly linked to patronage vis-à-vis influential Brazilian families, and with no obvious link to local fertility patterns. A second concern is that because Globo is a commercial television producer, it may have chosen to enter wealthier locations first, as the latter would yield higher profits from advertising. For this reason, in our regressions, we control for education, wealth, and for an "index of potential consumption" used by Globo to assess the attractiveness of new markets. Furthermore, we explicitly assess the potential selection on our variables of interest and conduct a number of falsification tests.

We also test the robustness of our results to aggregating variables at the AMC level and using a different measure of fertility, i.e., the number of live births reported per woman.

Finally, in the last set of regressions, we explore the extent to which our results can be linked to novela viewing rather than simply television viewing. We adopt two strategies. First, we run ancillary regressions of the prevalence of novela characters' first names as a function of Globo presence. Second, we estimate a modified version of (2), where Globo presence is interacted, alternatively, with two measures of how "appealing" novelas were in different years or for different women. One measure captures how close in age woman i is to the main female character of novelas broadcast in year $t-1$ (the lag accounts for the pregnancy period). Another measure is a dummy for whether at least one novela in $t-1$ had an explicit social mobility message.

III. Data

A. *Fertility*

For the main part of our analysis, we rely on a dependent variable constructed from the 1991 census. This is a dummy $BIRTH_{ijt}$ equal to 1 if woman i living in area j gave birth in year t, with t ranging from 1979 to 1991. As we show in Figure 1, this is the period over which the bulk of Globo's expansion occurred.[5] Due to the size of the original data, to estimate (1) we extract a 5 percent random sample from the 1991 census. We restrict the sample to women aged 15 to 49. Each woman has a geographic identifier that allows us to attribute her to the *municipio* where she lives. We do not actually use *municipios* but rather AMCs as our spatial unit of analysis j because this is the smallest consistently defined geographic area provided by the Brazilian Statistical Institute. The geographic borders of Brazil's approximately 5,000 municipalities changed over time, while there are 3,659 consistently defined AMCs for each round of the census.

The variable $BIRTH_{ijt}$ is not explicitly incorporated in the census questionnaire, which only includes a question on the year of the *last* birth and on the total number of births a woman had. We therefore impute $BIRTH_{ijt}$ using the following procedure. For each woman in the age range 15–49, we know from the household roster which children of hers are living in the household.[6] We retain only children younger

[5] We do not use the 2000 census wave for our main results for three reasons. First, the bulk of Globo expansion occurred before 1991 (see Figure 1). Second, while the spread of satellites was limited before 1991, it rapidly increased thereafter. Finally, the monopoly position of Globo was strongest until the early 1990s.

[6] This is made possible thanks to a variable that for every child in the household gives the person identifier of the mother, if the mother is in the same household.

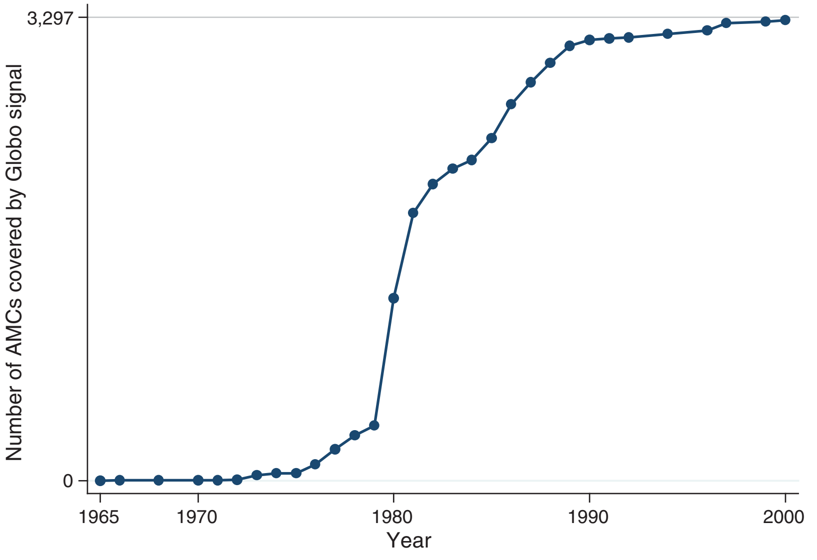

Figure 1. Rede Globo Expansion over Time

than 12, as this increases our confidence that we measure all the births that occurred in that time period. In fact, in the Brazilian context, it is extremely unlikely that a child leaves the mother's household before the age of 12. Given that the census reports the age of all household members, we compute the year of birth of a child as the difference between the year of the census interview and the age of the child. We thus recover every year in which a woman gave birth over the 12-year period before the census. The mean of this variable is 0.094 (see Appendix Table A1).

The construction of the variable $BIRTH_{ijt}$ rests on the assumption that a woman's children do not leave the household before the age of 12. While we cannot rule out that this may occur in a small number of cases, which would lead us to underestimate fertility, we have checked the consistency of our method by comparing our imputed figures with the answer to the census question about the number of children currently alive for women *younger than 25*. In fact, given their age, these are women whose children should *all* be in the household if our conjecture is correct. Our results indicate that our method is quite reliable. In 96 percent of the cases our imputed number of children exactly coincides with the number of births these women declare. In a remaining 3.5 percent of the cases we underestimate the number of children born by 1 unit.

From the census we also take the following independent variables X_{ijt}: age of the woman; stock of children up to year t; years of education of the household head and of the woman;[7] a proxy for wealth constructed from durable goods ownership and

[7] In our benchmark specification, we use the education of the household head, rather than that of the woman, to mitigate potential endogeneity problems. For younger women, the decision to acquire more education may be *a response* to novela viewing. Also, for these women, the causality may run from fertility to education as they may stop studying once they have a child. If we include among the controls the number of years of education of the woman (as opposed to those of the head), our estimates of the Globo effect remain virtually unchanged. We show this in Table 2.

access to basic services;[8] a dummy equal to one if the woman is married; a dummy for catholic religion; a dummy for rural residence; and the number of doctors and nurses with a diploma per 1,000 people.

As part of our robustness checks, we also use a different dependent variable, namely the number of live births that a woman declares to have had. This variable, which we denote as "*LIVEBIRTHS*," is recorded directly as a specific question in each round of the census and includes children born alive to a woman, regardless of whether the child is currently living in the household or not. For this variable, we clearly do not have year-to-year variation, hence, we use three rounds of census (1970, 1980, and 1991) and aggregate the value for all women aged 15–49 at the AMC level in each census round. Note that this variable moves rather slowly over time. In our sample, the average number of live births across AMCs decreases from 3.0 in 1970 to 2.4 in 1991. For this reason, and also because the effect of Globo entry can be better estimated using a "flow" variable like new births one year to the next, as opposed to a "stock" variable across census rounds, we focus on the results obtained using $BIRTH_{ijt}$.

Summary statistics for all variables are reported in Appendix Table A1.

B. *Rede Globo and Novelas*

Our second data source is information provided by Rede Globo on the year in which different areas got access to their programs. For each broadcasting or retransmitting station, we know the year and the location (latitude and longitude) where it was installed, as well as its radial reach in kilometers. This allows us to know which municipios were reached by the signal of any particular antenna and in which year they first started receiving the signal. We then match this information with the AMC corresponding to each municipio, and construct a variable $Globo\ coverage_{jt}$ equal to 1 if AMC j is within the signal radius of a Globo broadcasting or retransmitting station in year t, and 0 otherwise.[9] To account for a 9-month pregnancy delay, we require that the area received the signal for the first time in $t-1$ or before.[10]

In an attempt to control for one of the possible determinants of Globo's entry strategy, we also include among the controls the "Index of Potential Consumption" (IPC) of each AMC for each year in our sample. This is an index estimated by the Instituto Target Pesquisas e Servicos de Marketing and used by Globo to measure the purchasing power of different areas.[11]

Figure 1 shows the increase over time in the number of AMCs reached by the Globo signal. In 1970, only four AMCs were receiving the Globo signal. In 1980,

[8] The variable denoted as "wealth" in the regressions is the first principal component extracted from the following set of dummies for each household: access to piped water from the public system, sanitation, electricity in the house, ownership of a radio, ownership of a refrigerator, ownership of a car.

[9] In order to minimize the error due to the fact that we attribute coverage to the entire municipal area, we exclude from the sample the top 5 percent AMCs in size, and use for our regressions 3,485 AMCs. The results are very similar when using the full sample.

[10] Given that census interviews were fielded between September and December, we also tried defining an area as covered if it received the signal between January and March of the current year. Results were unchanged.

[11] We were not able to receive the index directly from the Instituto Target, but we constructed it from raw data using the methodology described by Instituto Target in its supporting documentation.

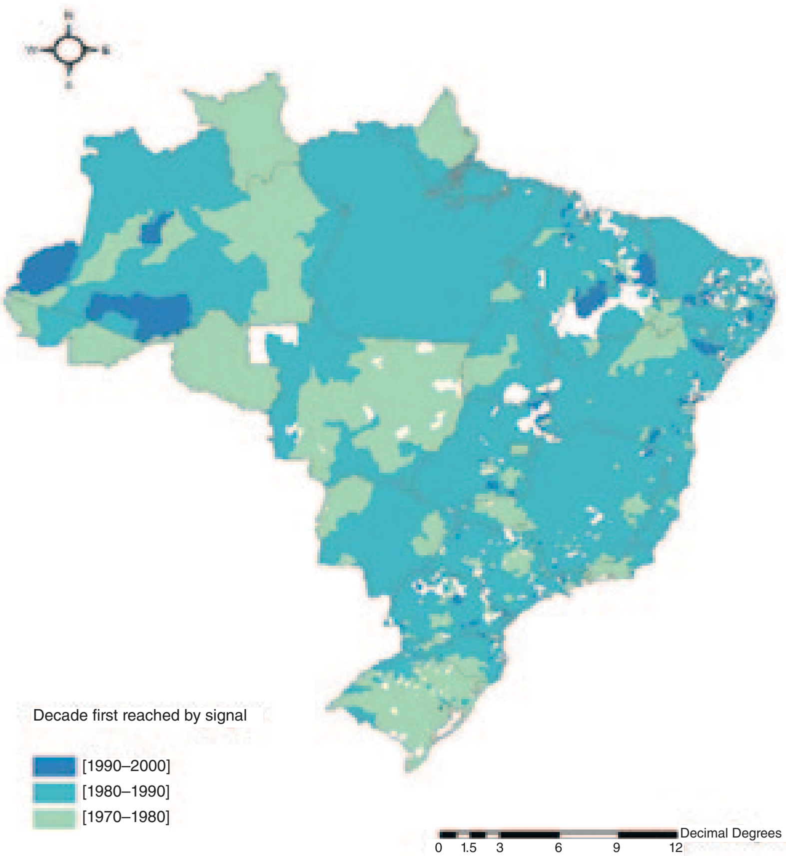

Figure 2. Rede Globo Expansion across Space

the number had increased to 1,300, and in 1991 it had increased to 3,147. Figure 2 shows the geographic expansion of the network between 1970 and 2000. Lighter colors correspond to an earlier exposure to the signal (with the exception of white, which stands for "no signal"). This figure suggests that the entry of Globo into different areas may not have been random. Globo reached the most developed parts of Brazil first, which is potentially a concern for our identification strategy. However, we show that after controlling for our time-varying controls and for AMC fixed effects there seems to be no evidence of selection on unobservables correlated with fertility trends.

To motivate our analysis and help us interpret the results, we have collected a large amount of data on the content of individual novelas broadcast by Rede Globo since the start of its operations. Rede Globo traditionally airs three sets of novelas: at 6 PM, which are typically historical stories and have the lowest audience; at 7 PM, which are mostly contemporary comedies with elements of conspiracy; and at 8 PM, which are heavily focused on social issues and have by far the highest audience.

For all the 7 PM and 8 PM novelas from 1965 to 1999, we coded the age of first female character, number of children of first female character, marital status of first

Table 1—Novela Content Analysis. Characteristics of Main Female Character

	Full sample percent novelas	Age of female1 < 50 percent novelas	Age of female1 < 50 and married percent novelas
Number of children			
0	62.2	71.6	45.8
1	19.8	20.0	29.2
2	9.9	7.4	20.8
3	4.5	1.1	4.2
4 or more	3.6	0	0
	($N = 111$)	($N = 95$)	($N = 24$)
Married			
Yes	28.4	25.5	—
	($N = 109$)	($N = 94$)	
Divorced or separated			
Yes	12.7	10.6	—
	($N = 110$)	($N = 94$)	
Unfaithful to partner			
Yes	24.6	27.7	41.7
	($N = 110$)	($N = 94$)	($N = 24$)

Source: Authors' calculations based on novela content analysis

female character, and whether the first female character is unfaithful to her partner.[12] The distribution of the variables we coded is shown in Table 1.

Over the full sample of 7 pm and 8 pm novelas aired between 1965 and 1999, in 62.2 percent of the novelas the main female character does not have any children; in 19.8 percent she has one child; in 9.9 percent she has two children, in 4.5 percent she has three children, and in the remaining cases she has four or more children. It is interesting to also consider a restricted sample of novelas where the main female character is below 50 years of age (which anyway comprises 95 out of 111 novelas), as these may be the characters with whom women in childbearing age most easily identify. In this smaller sample, the percentage of childless women increases to 71.6, 20 percent of the women have one child, and only 7.4 percent have two or three children (no woman has four or more). Finally, if we look at married women only, 45.8 percent of them have no children, 29.2 percent have one child, and 20.8 have two. These figures are quite astonishing if we compare them to *actual* fertility patterns in the Brazilian population over this period. Furthermore, the low fertility among novela heroines is not driven by the more recent novelas. If anything, quite the opposite. With the exception of the year 1996, the average main female character has no more than one child in each and every year between 1965 and 1999. Most strikingly, in the first decade of operation of Rede Globo, every 7 pm and 8 pm novela, with the exception of two, were about a woman who had no children at all.

Similar observations apply to variables like marriage, divorce, and extramarital relationships. Only 28.4 percent of the main female characters in novelas are married (25.5 in the sample younger than 50) and 12.7 percent are divorced or separated (10.6 percent in the sample younger than 50). In the full sample, 24.5 percent

[12] The coding of these variables was done on the basis of detailed plots contained in the Dicionario da TV Globo (Globo 2003) as well as internet sources. We had two independent research assistants code the same novelas to ensure maximal accuracy. The list of novelas in our sample is available upon request.

of the main female characters are unfaithful to their partner (27.7 percent in the sample younger than 50 and 41.7 in the married sample younger than 50). While for the latter variable it is not possible to find a counterpart in census data, in the fiction marriage rates are markedly lower and divorce rates markedly higher than in Brazilian contemporaneous society.[13] These observations make us confident that the role models portrayed in the programs of the television channels we analyze were clearly consistent with a radical reorientation of society's attitudes toward women's roles in the family, including fertility.

IV. Econometric Results

In this section, we take advantage of variation in the timing of Globo entry into different areas to formally test the hypothesis that exposure to the programs of this television network was associated with a reduction in fertility rates. We start by presenting the main results and then discuss identification.

A. *Main Results*

Table 2 contains our first set of results. The dependent variable $BIRTH_{ijt}$ is a dummy equal to one if woman i living in area j gave birth in year t, and zero otherwise. Our variable of interest, $Globo\ coverage_{jt}$, is a dummy capturing whether the area j where the woman lived received the Globo signal in that year. Precisely, to take into account the length of the pregnancy period, at any point in time we consider the AMC as covered if it was reached by the signal at least the year before. In this table, we estimate model (1) as a linear probability model and cluster the standard errors by AMC. We have also tried clustering by individual, to allow for arbitrary autocorrelation within a woman over time, and we found that our standard errors were actually smaller. In what follows we therefore chose to report the more conservative standard errors, i.e., those clustered by AMC.

In column 1 of panel A, we regress *BIRTH* on *Globo coverage* and on a set of year dummies, without including any other control. The coefficient on the Globo variable is -0.027, which is almost one-third of the mean probability of giving birth over the sample period (0.094). Of course, this coefficient cannot be interpreted due to the fact that Globo presence in an area may be correlated with other characteristics associated with lower fertility. In columns 2 and 3, we thus introduce different area fixed effects to control for differences in time-invariant unobservables across locations. We start with state (Unidade Federação, UF) fixed effects in column 2 and move to AMC fixed effects in column 3. The coefficients on the Globo variable drop, respectively, to -0.011 and -0.006.

In panel B, columns 4–9, we repeat the same sequence of estimations, but we also include a number of time varying controls. Controls common to all regressions are: the age of the woman and the square of this variable, the stock of children the woman already has (excluding the newborn) and the square of this variable, marital

[13] In related work, we analyze at the aggregate level the relationship between Globo presence and divorce rates (Chong and La Ferrara 2009).

Table 2—Globo Coverage and Fertility

Dependent variable = 1 if gives birth in year t (BIRTH)	[1]	[2]	[3]
Panel A.			
Globo coverage	−0.0269	−0.0115	−0.006
	(0.0037)***	(0.0026)***	(0.0015)***
Constant	0.1177	0.1126	0.111
	(0.0015)***	(0.0016)***	(0.0011)***
Year fixed effects	Yes	Yes	Yes
Area fixed effects	No	State	AMC
Number of areas		27	3,485
Observations	2,102,431	2,102,431	2,102,431
R^2	0.003	0.006	0.012

	[4]	[5]	[6]	[7]	[8]	[9]
Panel B.						
Globo coverage	−0.0075	−0.0042	−0.0047	−0.0074	−0.0037	−0.0047
	(0.0012)***	(0.0010)***	(0.0012)***	(0.0013)***	(0.0011)***	(0.0012)***
Age	0.023	0.023	0.0231	0.0234	0.0235	0.0236
	(0.0005)***	(0.0005)***	(0.0006)***	(0.0005)***	(0.0005)***	(0.0005)***
Age squared[a]	−0.4208	−0.4208	−0.4213	−0.4305	−0.4305	−0.431
	(0.0105)***	(0.0105)***	(0.0107)***	(0.0105)***	(0.0105)***	(0.0106)***
Stock of children	0.0029	0.0027	0.0017	0.0008	0.0006	−0.0003
	(0.0007)***	(0.0007)***	(0.0006)***	(0.0007)	(0.0007)	(0.0006)
Stock of children squared[a]	−0.06	−0.0597	−0.0222	0.0497	0.0505	0.089
	(0.0368)	(0.0361)*	(0.0341)	(0.0383)	(0.0374)	(0.0352)**
Education of head	−0.0002	−0.0002	−0.0002			
	(0.0001)	(0.0001)	(0.0001)			
Education of woman				−0.0029	−0.003	−0.003
				(0.0001)***	(0.0001)***	(0.0001)***
Wealth	−0.0208	−0.0204	−0.0205	−0.017	−0.0161	−0.0162
	(0.0003)***	(0.0003)***	(0.0003)***	(0.0003)***	(0.0004)***	(0.0004)***
Married	0.0567	0.0575	0.0581	0.0571	0.0581	0.0588
	(0.0010)***	(0.0011)***	(0.0012)***	(0.0011)***	(0.0012)***	(0.0013)***
Catholic	−0.0025	−0.0034	−0.0033	−0.0029	−0.0038	−0.0037
	(0.0006)***	(0.0006)***	(0.0006)***	(0.0006)***	(0.0006)***	(0.0006)***
Rural	−0.0043	−0.0054	−0.0048	−0.0045	−0.0055	−0.0048
	(0.0012)***	(0.0011)***	(0.0011)***	(0.0013)***	(0.0011)***	(0.0012)***
Doctors and nurses	−0.074	−0.0733	−0.0515	0.0507	0.0546	0.0816
	(0.0710)	(0.0713)	(0.0748)	(0.0677)	(0.0681)	(0.0723)
Index of potential consumption	0.0112	0.0016	−0.3646	0.0164	0.0151	−0.3608
	(0.0069)	(0.0087)	(0.0628)***	(0.0060)***	(0.0108)	(0.0670)***
Constant	−0.193	−0.194	−0.1877	−0.1818	−0.1829	−0.176
	(0.0069)***	(0.0069)***	(0.0074)***	(0.0064)***	(0.0064)***	(0.0068)***
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Area fixed effects	No	State	AMC	No	State	AMC
Number of areas		27	3,485		27	3,485
Observations	2,102,136	2,102,136	2,102,136	2,102,136	2,102,136	2,102,136
R^2	0.046	0.046	0.050	0.047	0.048	0.051

Notes: Table reports OLS coefficients. Standard errors in parentheses are corrected for clustering at the AMC level. AMC stands for Minimally Comparable Area and is a geographic aggregate slightly broader than a municipality.

[a] Coefficient and standard error multiplied by 1,000.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

status of the woman, a dummy for catholic religion, a dummy for rural residence, an index of wealth built from information on durable goods ownership and quality of the house, the number of doctors and nurses per 1,000 people in the AMC, and the Index of Potential Consumption of the AMC.[14] Then to control for the role of education, we either include the years of education of the household head (columns 4–6) or those of the woman (i.e., the respondent, in columns 7–9). We do not include TV ownership as this is likely an endogenous variable, but we show this control in a sensitivity table below. After we include these time-varying controls, the coefficient on the Globo variable remains of a similar order of magnitude as in column 3. We also explored the robustness of our results to including interaction terms between each year and each state (Unidade Federação). The pattern of the results remained the same, though the size of the coefficient on Globo coverage was reduced by about one third.[15]

Columns 6 and 9 of Table 2, panel B, contain our benchmark specifications, i.e., those with time varying controls plus AMC and year fixed effects. In both specifications, the coefficient of *Globo coverage* is negative and significant at the 1 percent level. Ceteris paribus, a woman living in an area that receives Globo is 0.5 percentage points less likely to give birth in any given year (recall that the mean of the dependent variable is 0.094). The magnitudes of the various coefficients indicate that, ceteris paribus, being exposed to Globo programs leads to the same decrease in the probability of giving birth as an increase of 1.6 years in the woman's education. This is quite relevant, given that the average education of women in this sample is 5.7 years. Alternatively, the effect of exposure to Globo is one-tenth of that of being married (with the opposite sign).

What fraction of the overall fertility decline during this period can be explained by exposure to Rede Globo? We can give an approximate answer based on the estimates in Table 2. In 1980, the average probability of giving birth for a woman aged 15–49 was 0.111. In 1991, this probability had declined to 0.079, a decline of 3.2 percentage points. Over the same period, the fraction of women in the same age range exposed to Globo increased from 0.453 to 0.921 (recall the steep gradient in Figure 1). The coefficient on Globo exposure in columns 6 and 9 of Table 2, panel B, is -0.0047, which implies that ceteris paribus increased exposure to Globo could account for about 7 percent of the reduction in the probability of giving birth over this period. This is a sizeable effect. For the sake of comparison, average years of education over this period for women aged 15–49 increased by 1.15. Although this change may itself be endogenous to fertility patterns, based on the coefficient of the education variable in column 9, we would say that increased education would account for 11.3 percent of the reduction in the probability of giving birth.[16]

[14] Age and the stock of children vary across women and are time-varying for each woman. Marital status, education, wealth, religion, and rural status vary across women but are time invariant. Our results are unchanged if we include a dummy for whether the woman gave birth in the previous year.

[15] Results available from the authors.

[16] This is smaller than the contribution of women's years of schooling estimated by Lam and Duryea (1993), but the difference can be explained in several ways. First, they look at an earlier period (fertility decline during the 1960s and 1970s) when education levels were much lower, and the relationship between education and fertility is nonlinear. Second, their regressions include a smaller set of time varying controls than ours. Third, they focus on a different age group (women age 30–34) and use a different dependent variable (children born by age 30).

Table 3—Heterogeneous Effects, Education, and Wealth

Dependent variable = 1 *if gives birth in year t* (*BIRTH*)	[1]	[2]	[3]
Globo coverage	−0.0101	−0.013	−0.0043
	(0.0014)***	(0.0015)***	(0.0013)***
Globo coverage × education of head	0.0013		
	(0.0002)***		
Globo coverage × education of woman		0.0018	
		(0.0002)***	
Globo coverage × wealth			0.0018
			(0.0005)***
Education of head	−0.0012		−0.0002
	(0.0001)***		(0.0001)
Education of woman		−0.0044	
		(0.0001)***	
Wealth	−0.0204	−0.0161	−0.0218
	(0.0003)***	(0.0004)***	(0.0005)***
Controls[a]	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
AMC fixed effects	Yes	Yes	Yes
Observations	2,102,136	2,102,136	2,102,136
R^2	0.05	0.05	0.05

Notes: Table reports OLS coefficients. Standard errors in parentheses are corrected for clustering at the AMC level. AMC stands for Minimally Comparable Area and is a geographic aggregate slightly broader than a municipio.

[a] Controls not listed include those in column 6 of Table 2.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

We next analyze the possibility that the effects of exposure to Globo may be *heterogeneous* along the dimensions of education and wealth. In Table 3, we introduce an interaction term between Globo coverage and the years of education of the household head (column 1); the years of education of the woman (column 2); and the wealth index of the household (column 3). In all cases, we find that the negative effect of Globo exposure on fertility is strongest for women living in poorer households and households with lower levels of education, and is attenuated for richer and more educated households. Based on the estimates reported in the table, ceteris paribus exposure to Globo for a woman with 1 or 2 years of education reduces the probability of giving birth by 1.1 percentage point. For women with 4 years of education the reduction is smaller, namely 0.6 of a percentage point, and the effects of Globo become 0 once a woman has 8 or more years of education. Similarly, for women with a durable wealth index equal to the twentieth percentile, the effect of Globo is a reduction in the probability of giving birth of 0.7 percentage points. For women whose wealth is equal to the eightieth percentile, the reduction is only 0.2 percentage points.

The above findings are important from a policy perspective because it is exactly for the poorer and less educated individuals that we should expect a medium like television to have the most potential in terms of communication. Rich and educated households may already be exposed to different lifestyles and role models through written media or social interactions.

Table 4—Age Effects

Dependent variable = 1 *if gives birth in year t* (*BIRTH*) Age range:	15–24 [1]	25–34 [2]	35–44 [3]	30–49 [4]	40–49 [5]
Globo coverage	−0.0023 (0.0015)	−0.0078 (0.0024)***	−0.0059 (0.0020)***		
Years exposed 10–19				−0.0027 (0.0011)**	
Years exposed 20–29				−0.0045 (0.0007)***	−0.0097 (0.0011)***
Years exposed 30–39				−0.0066 (0.0006)***	−0.0101 (0.0008)***
Years exposed 40–49					−0.0021 (0.0007)***
Controls[a]	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
AMC fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	823,218	653,533	454,836	1,118,600	602,429
R^2	0.068	0.038	0.051	0.0547	0.0639

Notes: Table reports OLS coefficients. Standard errors in parentheses are corrected for clustering at the AMC level. AMC stands for Minimally Comparable Area and is a geographic aggregate slightly broader than a municipio.

[a] Controls not listed include those in column 6 of Table 2.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

In Table 4, we explore another dimension of heterogeneity in impact, that is, age. In columns 1–3, we split the sample into three age groups: 15–24, 25–34, 35–44. The results in the table suggest interesting differences among age groups. For the youngest age bracket, i.e., women aged 15–24, Globo coverage decreases the probability of giving birth by 0.2 percentage points, but the effect is not statistically significant (the mean of *BIRTH* for this group is 0.10). For the age group 25–34, which, on average, has a probability of giving birth in any given year of 0.135, Globo presence is associated with a reduction of 0.8 percentage points in the likelihood of giving birth. The effect is also very strong for the next age group, i.e., women aged 35–44. The average probability of giving birth for this group is 0.057, and exposure to Globo leads to a reduction of 0.6 percentage points.

In columns 4 and 5 of Table 4, we estimate the effect of *length* of exposure to Globo, allowing for a differential effect of exposure at different ages.[17] We find that among women aged 30–49, 1 more year of exposure as a teenager (i.e., during age 10–19) decreases the likelihood of giving birth by 0.003, while one more year of exposure during age 20–29 decreases the likelihood of giving birth by 0.005. Years of exposure during age 30–39 have the strongest effect on fertility, with an estimated

[17] The variables "Years exposed during 10–19", … "Years exposed during 40–49" are defined only for women who have reached the relevant age bracket. Therefore, the sample in column 5 includes women aged 40–49 because these are the only ones for which "Years exposed during 40–49" is nonmissing. On the other hand, in this column, "Years exposed during 10–19" is not included among the regressors because it is identically zero for the 40–49 age group. Column 4 enlarges the sample to women aged 30–49, and for this group the coefficient on "Years exposed during 10–19" can be estimated.

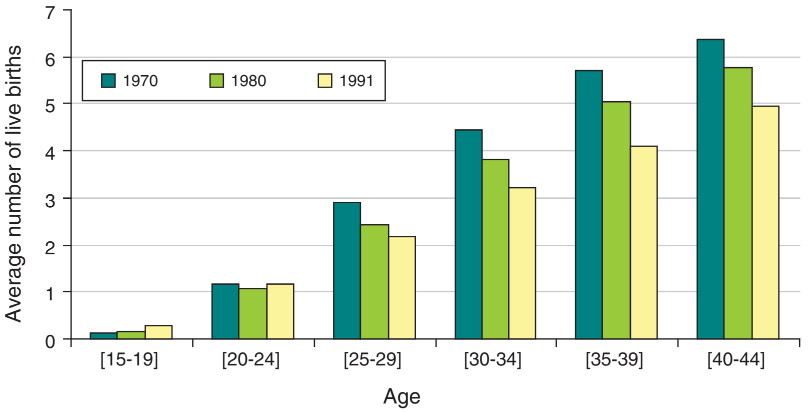

Figure 3. Average Number of Births, by Age Cohort

coefficient of −0.007. Among women aged 40–49 (column 5), we find that one more year of exposure during age 20–29 decreases the likelihood of giving birth by 0.01, the same effect as one more year of exposure during age 30–39. Exposure during age 40–49 leads to a reduction of 0.2 percentage points in the probability of giving birth.

It is worth discussing the above findings in relation to the demographic literature on Brazil. An apparently puzzling result in Table 4 is the absence of significance of Globo exposure for the youngest age group, women aged 15–24. However, this is consistent with what is known about the nature of changing fertility patterns in Brazil. Martine (1996) and Flores and Nuñez (2003) find that changes in the starting age of fertility have been negligible in this country, related both to relatively stable marital patterns as well as persistently high rates of adolescent fertility. On the other hand, increased spacing of births and—especially—*stopping* of childbirth have been found to be more important (Moreno 1991). These findings are confirmed in our data, as illustrated in Figure 3.

The histograms in Figure 3 represent the average number of live births for women aged 15–19, 20–24, and so on, until 40–44, for the census years 1970, 1980, and 1991. Interestingly, over the period 1970–1991 there has been absolutely no decrease in the average number of live births for women younger than 25. By the age of 24, the average woman in our sample had one child both in 1970 and in 1991. What happens between the age of 25 and 35, on the other hand, is very different over this period. In 1970, a woman aged 30–34 would have had, on average, 4.4 live births in her life. In 1991, this number decreased to 3.2. A similar decline occurred between 35 and 45 years of age. In 1970, a woman aged 40–45 would have had, on average, 6.4 live births in her life. In 1991 this number decreased to 4.9. This data suggests that it is in the intermediate and late stages of their reproductive life that Brazilian women chose to have fewer children, which is consistent with our estimates in Table 4.

B. *Identification*

The key identification assumption underlying our approach is that Globo entry in a market, though not random, was uncorrelated with pre-existing differences in

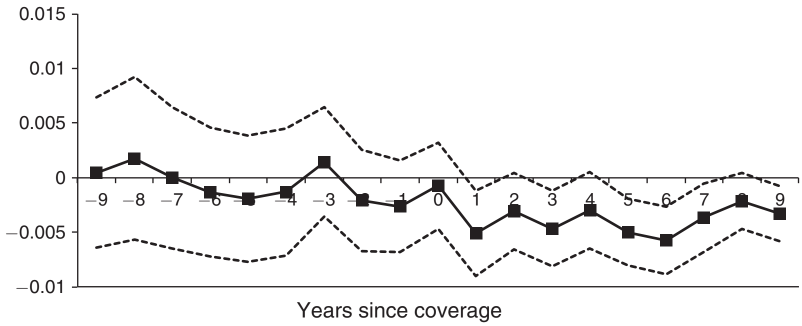

Figure 4. Timing of Fertility Decline around Year of Globo Entry

Note: Estimated coefficients and 95 percent confidence interval from a regression of the probability of giving birth on a set of dummies from $t - 9$ to $t + 9$, where $t = 0$ is the year of Globo entry.

fertility trends across areas, after controlling for time varying controls, time invariant area characteristics, and a common trend. To assess the plausibility of this assumption, we proceed in several ways.

First of all, we exploit the exact timing of births to test whether the decline in fertility occurs in correspondence with the introduction of Rede Globo in an area, or if it precedes it. For this purpose, we estimate regression (1) substituting the Globo coverage variable G_{jt} with a full set of dummies going from nine years before the introduction of Globo to nine years after. In particular, we estimate

$$(4) \qquad B_{ijt} = \alpha_{-9} D_{-9} + \cdots + \alpha_0 D_0 + \cdots + \alpha_{+9} D_{+9} + \mathbf{X}_{ijt} \beta + \mu_j + \lambda_t + \varepsilon_{ijt},$$

where D_0 is a dummy for the year of Globo entry; D_{-s} is a dummy for s years before Globo entry; and D_{+s} is a dummy for s years after Globo entry. Note that, because entry occurs at different times in different AMCs, D_0 corresponds to, say, 1980 for certain AMCs, 1987 for others, etc. The estimated coefficients $\{\hat{\alpha}_{-9}, \ldots, \hat{\alpha}_{+9}\}$ are displayed in Figure 4 together with 95 percent confidence bands.

Figure 4 shows that the decline in fertility does *not* occur *before* Globo entry. None of the coefficients for the years preceding entry, nor the coefficient for the year of entry itself, are significantly different from zero. The negative effect of Globo on fertility is realized one year after its entry, consistent with the delay related to the length of pregnancy, and persists at similar levels as in the immediate aftermath of entry in subsequent years. The rapid impact of TV introduction is consistent with that found by Jensen and Oster (2009) in the Indian context. This result increases our confidence in the validity of our identification strategy, as it would be difficult to explain the discontinuous decline in the year immediately following Globo's entry as a result of trends in unobservables.

A second way to investigate the nature of the possible selection in Globo entry is to test whether the date of entry of Globo in a given area is correlated with fertility rates at the beginning of the period, i.e., in the 1970 census. We aggregate the data

Table 5—Possible Selection in Globo Entry

Dependent variable is year of Globo entry	[1]	[2]	[3]	[4]
Average levels in AMC in 1970:				
BIRTH	5.2009	0.7398	1.6339	0.6973
	(2.4475)**	(0.6414)	(1.0099)	(0.5759)
Age			−0.0252	0.0338
			(0.0494)	(0.0248)
Education of head			−1.124	−0.0107
			(0.3772)***	(0.1539)
Wealth			−1.3452	−0.7195
			(0.5008)**	(0.5674)
Married			−2.4903	0.6764
			(1.4371)*	(0.8552)
Catholic			1.8494	−0.7544
			(1.7838)	(1.5300)
Rural			−3.1433	−1.2162
			(0.7685)***	(0.4906)**
Doctors and nurses			−23.3873	−46.8729
			(21.3720)	(33.0399)
Index of potential consumption			−84.7199	−118.4708
			(15.0145)***	(30.5864)***
Constant	1982.6	1983.2	1987.2	1982.4
	(0.7371)***	(0.0793)***	(2.7165)***	(2.0261)***
State fixed effects	No	Yes	No	Yes
Observations	2,945	2,945	2,945	2,945
R^2	0.01	0.31	0.14	0.32

Notes: Table reports OLS coefficients. Standard errors in parentheses are corrected for clustering at the state level. Each observation is an AMC (Minimally Comparable Area, a geographic aggregate slightly broader than a municipio).
***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

at the AMC level, which is the level at which entry decisions were likely made (as opposed to individual level), and we estimate the following regression

$$GloboYear_j = \mathbf{X}_j^{1970}\beta + \lambda B_j^{1970} + \eta_j, \tag{5}$$

where $GloboYear_j$ is the year in which AMC j first received the Globo signal; B_j^{1970} is the average probability of giving birth for women age 15–49 in AMC j in census year 1970; $\mathbf{X}_j^{1970}$ is the vector of controls used in our benchmark specification (column 6 of Table 2), measured as average for the AMC in 1970; and η_j is the error term. We estimate (5) using OLS with and without State fixed effects, and we cluster standard errors at the state level. The results are displayed in Table 5.

In column 1 of Table 5, we regress the year of Globo entry only on the average probability of giving birth in 1970, without any other controls. Not surprisingly, given the pattern we had highlighted in Figure 2, the coefficient on $BIRTH_j$ is positive and significant, suggesting that places with higher fertility got the signal later. As soon as we introduce state fixed effects (column 2), however, the correlation disappears. Furthermore, if we control for the initial levels of the other variables that we

Table 6—Placebo Regressions

Dependent variable = 1 *if gives birth in year t* (*BIRTH*)	[1]	[2]	[3]	[4]
Globo coverage in t	−0.0043	−0.0038		
	(0.0016)***	(0.0014)***		
Globo coverage in $t+1$	−0.0008	0		
	(0.0015)	(0.0015)		
Globo coverage in neighboring AMC			−0.0011	−0.0012
			(0.0010)	(0.0010)
Controls[a] in t	No	Yes	No	Yes
AMC fixed effects	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes
Observations	1,913,150	1,912,855	2,101,996	2,101,701
R^2	0.013	0.050	0.012	0.050

Note: Standard errors in parentheses are corrected for clustering at the AMC level.
[a] Controls not listed include those in column 6 of Table 2.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

include in our regressions (columns 3 and 4), no significant correlation between initial fertility and the year of entry is found, even when we do not include state fixed effects.

Finally, we perform a series of falsification tests. The first is based on the timing of Globo entry. We perform analogous regressions to the ones we performed in Table 2, panel B (our benchmark results), but instead of only looking at the effects of Globo's past entry on current behavior, we also look at the effects of *future* entry. Our dependent variable is $BIRTH_{ijt}$, i.e., a dummy for whether woman i living in AMC j gave birth in year t. Our regressor of interest is *Globo coverage in* $t+1$, i.e., a dummy equal to 1 if AMC j is reached by the Globo signal in year $t+1$. Because every area that receives the signal in t maintains its coverage status in $t+1$, the coefficient on this variable effectively captures the effect of future entry for areas that are not covered by the signal in t. Our hypothesis for this "placebo" experiment is that fertility in places that do not receive the Globo signal should not be affected by the fact that the signal may become available in the future. The results are displayed in columns 1 and 2 of Table 6. As can be seen in this table, when we omit time-varying controls (column 1) and when we include them (column 2), the coefficient on future presence of Globo is zero.

The second falsification test exploits information about bordering AMCs. For each AMC j in our sample, if any of its neighboring AMCs has a coverage status different from j in a given year, we attribute that coverage status to j. This implies possibly attributing coverage to areas that do not have it, or lack of coverage to areas that have it. Hence, we do not expect the variable "Globo coverage in neighboring AMC" to be significant, unless it captures shocks to the region that are correlated with fertility changes. Columns 3 and 4 of Table 6 show that indeed there is no significant effect.

Finally, in our last falsification test we generate a random year of entry between 1965 and 2004 (the first and last year of entry in our sample) different from the actual year in which Globo entered each AMC, and we construct a "false" *Globo coverage* variable based on this random year of entry. We then reestimate our benchmark model, equation (1), using the false Globo coverage variable, and store

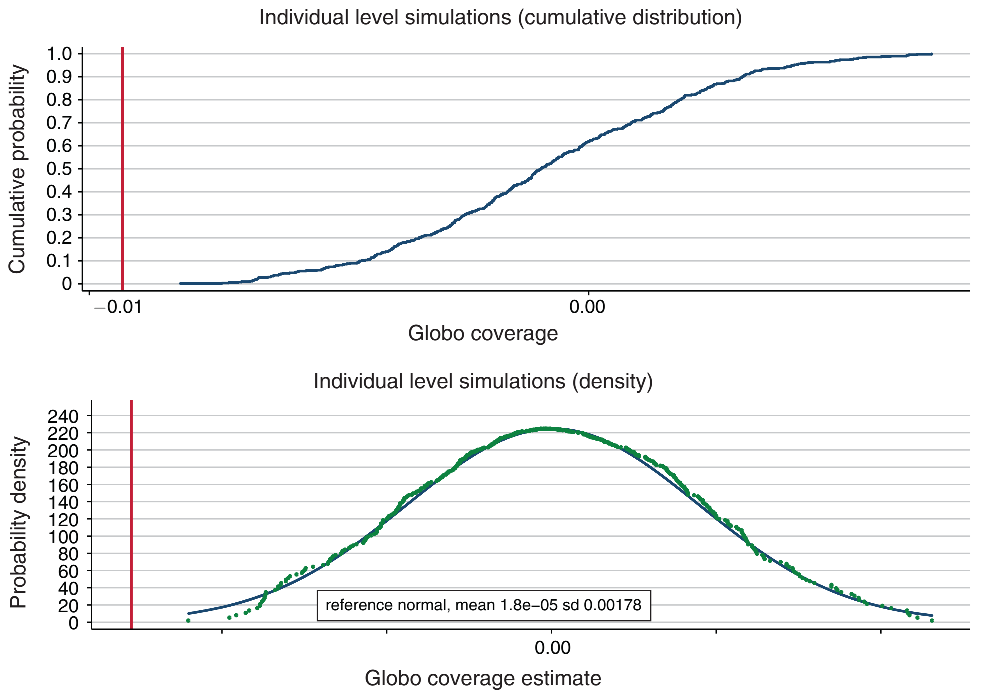

FIGURE 5. PLACEBO YEAR OF GLOBO ENTRY. DISTRIBUTION OF ESTIMATED COEFFICIENTS

Note: Cumulative distribution function (top panel) and density (bottom panel) of the estimated coefficients from 500 simulations using false date of Globo entry.

the estimates. We repeat the exercise 500 times. The empirical cumulative distribution function and density of the estimated coefficients on *Globo coverage* are shown in Figure 5. The distribution of the estimated coefficients on the placebo Globo variable is centered around zero, as expected, and our benchmark estimate from column 6 of Table 2, panel B (indicated by a vertical line in correspondence of the value −0.005) clearly lies outside the range of coefficients estimated in our simulation exercise.

Taken together, the results in Figures 4 and 5 and in Tables 5 and 6 increase our confidence that our findings are not spurious.

C. *Robustness*

Our results are robust to the inclusion of different controls and to using a different measure of fertility and different level of aggregation. In panel A of Table 7, we estimate our benchmark specification of column 6 of Table 2, panel B, including several regressors that are likely to be important determinants of fertility but are potentially endogenous. The first is a dummy for whether the household where the woman lives owns a television set. This variable is negatively correlated with fertility, and its inclusion does not substantially affect the coefficient of Globo coverage. Similar results obtain when we control for whether there is electricity in the dwelling (column 2 of Table 7, panel A), one of the variables that Potter, Schmertmann, and

Table 7—Robustness

Dependent variable = 1 *if gives birth in year t* (*BIRTH*)	[1]	[2]	[3]
Panel A. Individual level			
Globo coverage	−0.0047 (0.0012)***	−0.0047 (0.0012)***	−0.0049 (0.0012)***
TV owner	−0.0114 (0.0010)***		
Electricity		−0.0042 (0.0016)**	
Woman employed			−0.0206 (0.0005)***
Controls[a]	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes
AMC fixed effects	Yes	Yes	Yes
Observations	2,102,136	2,102,136	2,102,136
R^2	0.05	0.05	0.05

Panel B. AMC level *Dependent variable is avg. number of live births for women aged 15–49 in AMC* (*LIVEBIRTHS*)	[4]	[5]	[6]	[7]	[8]	[9]
Globo coverage	−0.302 (0.0191)***	−0.0634 (0.0143)***	−0.0267 (0.0155)*	−0.0727 (0.0110)***	−0.0188 (0.0104)*	−0.0305 (0.0145)**
Education of head				−0.0116 (0.0016)***	−0.006 (0.0016)***	−0.0045 (0.0019)**
Age				0.0456 (0.0154)***	0.0601 (0.0142)***	0.0935 (0.0189)***
Share aged 15–24				0.7449 (0.3417)**	0.7705 (0.3138)**	−0.166 (0.4318)
Share aged 25–34				−1.0469 (0.2138)***	−1.0242 (0.2011)***	−1.8732 (0.2821)***
Married				0.0354 (0.0704)	0.2784 (0.0765)***	0.1265 (0.1180)
Wealth				−0.1814 (0.0034)***	−0.1543 (0.0036)***	−0.1077 (0.0069)***
Catholic				−0.0022 (0.0583)	−0.2504 (0.0632)***	0.0348 (0.1523)
Rural				−0.3079 (0.0306)***	−0.1998 (0.0272)***	0.3503 (0.0638)***
Doctors and nurses				−0.0177 (0.0038)***	−0.0267 (0.0037)***	−0.0244 (0.0058)***
Index of potential consumption				0.7189 (0.3434)**	−0.7448 (0.2378)***	0.8652 (4.7037)
Constant	2.9839 (0.0077)***	2.9836 (0.0067)***	2.984 (0.0057)***	1.8651 (0.5981)***	1.4592 (0.5512)***	0.5844 (0.7621)
Year fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Area fixed effects	No	State	AMC	No	State	AMC
Number of areas		27	3,485		27	3,485
Observations	10,427	10,427	10,427	10,427	10,427	10,427
R^2	0.25	0.58	0.83	0.64	0.70	0.85

Notes: Table reports OLS coefficients. Standard errors in parentheses are corrected for clustering at the AMC level. Panel A: each observation is an individual-year. Years 1979–1991. Panel B: each observation is a couple AMC-Census year. Years: 1970, 1980, 1991.

[a] Controls not listed include those in column 6 of Table 2.

*** Significant at the 1 percent level.

** Significant at the 5 percent level.

* Significant at the 10 percent level.

Cavenaghi (2002) found to have significant explanatory power in fertility regressions. While electricity is already included in our wealth index, its introduction as a stand-alone regressor does not alter our findings. Finally, when we control for the employment status of the woman (column 3, Panel A) we find no effect on the coefficient of our Globo variable, despite the fact that female employment is associated with lower fertility.

In panel B of Table 7, we report results obtained using a different dependent variable and aggregating the data at the AMC level for the three census waves: 1970, 1980, and 1991. The dependent variable in this table is *LIVEBIRTHS*, i.e., the average number of live births for women aged 15–49 in the AMC in any given census year. This variable is directly asked in the census questionnaire, but does not allow to exploit year-to-year variation as it only measures the stock of births in a given census year without indicating when exactly births occurred. For this reason we do not employ it in our main analysis, but only as a robustness check. The *Globo coverage* dummy is defined as in the other regressions, i.e., it equals one if the AMC receives the Globo signal in that census year (precisely, if the signal reached the AMC at least one year before, to account for the duration of pregnancy). The table reports OLS coefficients and standard errors clustered by AMC. In column 4, panel B, we only include year fixed effects. In columns 5 and 6, we add area fixed effects at different levels of aggregation. In columns 7–9, we include a number of controls to account for time-varying differences across AMCs. These controls are the same that we use in the individual level analysis, averaged at the AMC level.

In all specifications, the coefficient on the Globo variable is negative and significant. The magnitude of the benchmark estimate (the fixed effects panel regression in column 9) is -0.03 and suggests that the effect of Globo exposure is about one-fourth of the effect of being married; and it is comparable to that of having one more doctor or nurse per 1000 people, which is also remarkable given that the mean of this variable is 0.2. Note that the size of the coefficient on *Globo coverage* cannot be compared to our benchmark estimates in Table 2 because the dependent variable is different. The mean across AMCs of the dependent variable used here (*LIVEBIRTHS*) is 2.67 and the standard deviation is 0.55. Also, this variable changes very little over time. Its mean is 2.98 in 1970, 2.66 in 1980, and 2.36 in 1991.[18] However, overall, we get a qualitatively similar pattern of results with the two dependent variables.

V. Interpretation: TV or Novelas?

Our results so far indicate a robust and negative effect of Globo presence on fertility choices in Brazil. In this section, we try to understand to what extent this is a

[18] Note that these figures are not necessarily in contrast with the sharp decline in the total fertility rate (TFR) discussed at the beginning of this paper. Unlike the TFR, which is a hypothetical number of children born to a woman exposed to the age-specific fertility rates of women 15–49 of that year, the *LIVEBIRTHS* measure is truncated. In the *LIVEBIRTHS* measure, many of the women would have gone on to have additional births especially in the earlier years, but their fertility is being measured at their current age before they have necessarily finished. There is less of a decline observed over the same period in *LIVEBIRTHS* than in TFR because the TFR measure more naturally reflects the important role of stopping behavior in the fertility decline. If the transmission had occurred mainly through delaying first births, then we would have seen a more similar decline between the two measures.

general effect of television viewing or whether it can be linked to the particular type of programs broadcast by Rede Globo.

A first step is to show that indeed people watched novelas and that some of the decisions people made were affected by the content of novelas. We focus on *naming patterns* among children and test whether, ceteris paribus, it is more common for parents living in areas that are reached by Globo to name their children after popular characters in novelas. Naming choices have been studied in the sociological literature as examples of important life decisions with a peculiar feature. Names do not necessarily have intrinsic values but take value as part of the social environment in which the decision takes place. Among others, Lieberson and Bell (1992) use data on births in New York State over the period 1973–1985 and show that name choices are affected by education and socioeconomic status of the parents in interesting ways. In particular, they find evidence that names that first appear among the top 20 choices of highly educated parents are later adopted by low-education parents, suggesting a diffusion process in which parents adapt to the choices of higher socioeconomic status families.

We investigate whether a similar adaptation process could be in place vis-à-vis the life of individuals portrayed in Globo novelas. To this purpose, we use administrative data on the names of Brazilian fifth graders in 2004 (Ministry of Education of Brazil 2005) and compare the pattern of their first names with the first names of the main characters in the novelas aired in the year in which these children were born, typically 1994.[19] We do this for a 10 percent random sample of AMCs in the country, i.e., for 366 AMCs.[20]

Our variable of interest is a dummy *NAMESMATCH* that equals 1 if at least 1of the top 20 most prevalent names of children born in 1994 is 1 of the names of the main novela characters of that year. Since novela names tend to be very idiosyncratic in Brazil and elsewhere in Latin America, we believe that evidence on possible name patterns strongly suggests a link between novela content and behavior. Table 8 reports the results of this exercise.

Of the 366 AMCs for which we have data, 319 had received the Globo signal by 1994 (the birth year of the children in our sample), and 47 received it after 1994 or did not receive it at all. Panel A of the table shows a simple comparison of means in the two subsamples. The mean of the *NAMESMATCH* variable is 0.329 in the group of AMCs covered by Globo and 0.085 in the other group. In other words, the likelihood that the 20 most popular names chosen by parents for their newborns would include one or more names of the main characters of novelas aired that year was about 33 percent if the area where parents lived received the Globo signal and only 8.5 percent if it did not. Panel A also reports confidence intervals and shows that the difference is statistically significant at the 1 percent level.

[19] We coded the names of the three main male and female characters of Globo novelas aired in 1994 based on detailed plot descriptions provided by Globo itself.

[20] While we would have liked to compare names for the full spectrum of AMCs in our sample, this was not possible due to data limitations. However, we tested for possible differences in observables among the AMCs for which we had names and the remaining ones, and in no case we could reject the of equality of means, suggesting that the randomization worked well.

Table 8—Naming Children after Novela Characters

	Observations	Mean of *NAMESMATCH*[a]	95 percent conf. interval Lower	Upper	Difference of means (p-value)	
Panel A. Test of means						
Globo coverage						
Yes	319	0.329	0.277	0.381		
No	47	0.085	0.002	0.168	0.0003	
Dependent variable is NAMESMATCH	[1]	[2]	[3]	[4]	[5]	[6]
Panel B. Multivariate regression						
Globo coverage	0.244	0.2213	0.1796	0.244	0.23	0.2139
	(0.0566)***	(0.0563)***	(0.0788)**	(0.0566)***	(0.0601)***	(0.0850)***
Controls[b]	No	Yes	Yes	No	Yes	Yes
State fixed effects	No	No	Yes	No	No	Yes
Predicted P				0.287	0.283	0.289
R^2	0.032	0.057	0.126	0.032	0.053	0.10
Observations[c]	366	366	366	366	366	358

Notes: Panel B: Standard errors in parentheses are clustered by state. Column 1–3 report OLS coefficients. Column 4–6 report marginal probit coefficients.

[a] The variable NAMESMATCH is a dummy equal to 1 if any of the names of the three main characters of Globo novelas aired in 1994 appears among the top 20 names of children born that year.

[b] AMC level controls include: education of the head, wealth, married, catholic, doctors and nurses, log of population, rural, Index of Potential Consumption.

[c] In column 6 three State dummies (8 observations) predict failure perfectly and are dropped from the regression.

***Significant at the 1 percent level.
**Significant at the 5 percent level.
*Significant at the 10 percent level.

In panel B, we run a linear probability model and a probit model using as dependent variable *NAMESMATCH* and clustering the standard errors at the state (Unidade Federacao) level. The Globo coverage variable also has a positive and significant effect after we control for the same variables used in previous regressions (columns 2 and 5) and for state fixed effects (columns 3 and 6). The size of the Globo coefficient is basically the same as without the controls (columns 1 and 4). Our estimates suggest that, ceteris paribus, AMCs that receive the Globo signal have a probability of displaying a "match" between children's and novela characters' names that is 18–24 percent higher, depending on the specification.

To shed more light on the role of content, we turn to individual-level census data, and explore the possibility that viewers may have been differently affected by novelas depending on their messages or on the extent to which they could identify with the main characters. The results are displayed in Table 9.

In the first column, we repeat a regression analogous to that of column 6 of Table 2, panel B, and we include interactions of the Globo coverage variable with a dummy identifying the years in which at least one novela in the previous season featured upward social mobility for its main female character, according to our coding of novela plots. We find that while there is a generalized negative effect of Globo coverage on fertility, the effect is stronger the years after particularly appealing messages, such as those of improving one's socioeconomic status. Notice that because there are several "reversals" over the years in the coverage of social mobility, it

Table 9—Effects of Novela Content

Dependent variable = 1 *if gives birth in year t* (*BIRTH*)	[1]	[2]
Globo coverage	−0.003 (0.017)*	−0.0037 (0.0013)***
Globo coverage × social mobility	−0.0032 (0.0013)**	
Globo coverage × age match		−0.003 (0.0008)***
Controls[a]	Yes	Yes
Year fixed effects	Yes	Yes
AMC fixed effects	Yes	Yes
Observations	2,102,136	2,102,136
R^2	0.050	0.050

Note: Standard errors in parentheses are corrected for clustering at the AMC level.
[a] Controls are the same as in column 6 of Table 2.
*** Significant at the 1 percent level.
** Significant at the 5 percent level.
* Significant at the 10 percent level.

would be difficult to explain this result as originating from (monotonic) trends leading to fertility decline.

In column 2, we investigate the role of "frame salience", i.e., whether Globo's impact was stronger when viewers could more easily identify with the characters, as determined by the proximity in age between a novela character and its viewers. For each woman in the sample and each year between 1978 and 1990, we create a dummy *Age match* equal to 1 if the age of the woman (respondent) is within four years of the age of the main female character of at least one novela aired that year. For example, if a novela character was 35 years old, we assign *Age match* = 1 to respondents aged 31 to 39, and 0 otherwise.[21] Notice that there is substantial variation across years in the age of the main female characters displayed, with some years portraying only "young" characters, some only "mature" ones, and some a mix. The mean of *Age match* in our sample is 0.34.

We then interact this dummy with the Globo coverage variable, to test if exposure to Globo in a given year had a differential impact on the likelihood of giving birth for women who were close in age to the main female character portrayed that year. As before, to take into account the duration of pregnancy, the Globo coverage variable and the *Age match* dummy refer to the year before the one in which a potential birth is recorded.

The results in column 2 confirm that, on average, exposure to Globo had a negative effect on the likelihood of giving birth for all women (the coefficient on Globo coverage is −0.004 and is significant at the 1 percent level). However, this effect was magnified for women who were in the same age range as the main novela characters displayed the year before. In fact, the coefficient on the interaction between

[21] In some years, e.g., 1978, 1985, 1998, there was only one 8 pm novela aired. In this case, the attribution is unambiguous. In other years there were two novelas, and we chose to assign an "*Age match*" if at least one of the two characters was in the age range of the respondent. Results are unaffected if we construct the match with the mean age of the characters.

Globo coverage and *Age match* is −0.003 and is significant at the 1 percent level. Again, the fact that the *Age match* variable interacts in a nonmonotonic way with a woman's age depending on the year of broadcasting increases our confidence that the effect is not the result of preexisting trends.

One way to interpret the above findings is that Globo programming had a strong impact on fertility choices because it portrayed a reality with which Brazilian viewers could more easily identify. The role of "frame salience" has been underlined in the communications literature on Brazilian *novelas* (e.g., Vink 1988), which has stressed how viewers tend to be more affected by the content of a novela when they can more easily relate to its main character(s) and to the environment.

VI. Conclusions

This paper has explored the effects of television, and, in particular, the effects of programs such as soap operas, on women's fertility. Our analysis draws on the experience of Brazil, a country where soap opera watching is ubiquitous and cuts across social classes. We exploit differences in the timing of entry into different markets of Rede Globo, which until the early 1990s had an effective monopoly on novelas production in Brazil, to estimate the impact of Globo availability on fertility choices. We find that, after controlling for time varying controls and for time-invariant area characteristics, the presence of the Globo signal leads to significantly lower fertility. This effect is stronger for women of low socioeconomic status, as measured by education or durable goods ownership. The effect is also stronger for women who are in the middle and late phases of their childbearing life, suggesting that television contributed more to stopping behavior than to delayed first births, consistently with demographic patterns documented for Brazil. Our empirical analysis on children naming patterns and on novela content suggests that these results may be interpreted not only in terms of exposure to television, but also of exposure to the particular reality portrayed in Brazilian *novelas*.

Our findings have important policy implications for today's developing countries. In societies where literacy is relatively low and newspaper circulation limited, television plays a crucial role in circulating ideas. Our work suggests that programs targeted to the culture of the local population have the potential of reaching an overwhelming amount of people at very low costs, and could thus be used by policymakers to convey important social and economic messages (e.g., about HIV/AIDS prevention, children's education, the rights of minorities, etc.). Recent work by social psychologists (e.g., Paluck 2009) stresses the role of the media, and of radio soap operas in particular, as a tool for conflict prevention. Our paper suggests that this type of program may be usefully employed for a broader set of development policies.

Appendix

Table A1—Summary statistics

	Mean	SD	Observations
BIRTH	0.094	0.292	2,102,431
BIRTH (sample aged 15–24)	0.099	0.299	823,441
BIRTH (sample aged 25–34)	0.135	0.341	653,589
BIRTH (sample aged 35–44)	0.057	0.231	454,852
BIRTH (sample aged 30–49)	0.077	0.266	1,118,651
BIRTH (sample aged 40–49)	0.053	0.224	602,446
Globo coverage	0.750	0.433	2,102,431
Years exposed 10–19 (sample aged 30–49)	0.106	0.554	1,118,651
Years exposed 20–29 (sample aged 30–49)	2.607	3.655	1,118,651
Years exposed 30–39 (sample aged 30–49)	3.659	3.424	1,118,651
Years exposed 20–29 (sample aged 40–49)	0.136	0.620	602,446
Years exposed 30–39 (sample aged 40–49)	3.256	3.842	602,446
Years exposed 40–49 (sample aged 40–49)	2.832	3.223	602,446
Married	0.551	0.497	2,102,431
Education of head	5.206	4.559	2,102,431
Education of woman	5.696	4.445	2,102,431
Wealth	0.249	1.468	2,102,431
TV owner	0.870	0.336	2,102,431
Electricity	0.900	0.300	2,102,431
Employed	0.413	0.492	2,102,431
Catholic	0.822	0.382	2,102,431
Rural	0.188	0.390	2,102,431
Doctors and nurses[a]	0.005	0.303	2,102,431
Index of potential consumption	0.021	0.047	2,102,431
Age	28.89	9.60	2,102,431
Age^2	926.90	596.51	2,102,431
Stock of children	1.991	2.638	2,102,136
Stock of children^2	10.92	27.56	2,102,431

[a] Mean and standard deviation multiplied by 100.

REFERENCES

Baker, Matthew J., and Lisa M. George. 2010. "The Role of Television in Household Debt: Evidence from the 1950's." *B. E. Journal of Economic Analysis and Policy: Advances in Economic Analysis and Policy* 10 (1): Article 41.

Besley, Timothy, and Robin Burgess. 2002. "The Political Economy of Government Responsiveness: Theory and Evidence from India." *Quarterly Journal of Economics* 117 (4): 1415–51.

Chong, Alberto, and Eliana La Ferrara. 2009. "Television and Divorce. Evidence from Brazilian Novelas." *Journal of the European Economic Association: Papers and Proceedings* 7 (2–3): 458–68.

Costa, Sylvio, and Jayme Brener. 1997. "Coronelismo electronico: O governo Fernando Henrique e o novo capitulo de uma velha historia." *Comuniçacão & Política* 4 (2): 29–54.

Dahl, Gordon, and Stefano DellaVigna. 2009. "Does Movie Violence Increase Violent Crime?" *Quarterly Journal of Economics* 124 (2): 677–734.

DellaVigna, Stefano, and Ethan Kaplan. 2007. "The Fox News Effect: Media Bias and Voting." *Quarterly Journal of Economics* 122 (3): 1187–1234.

Fadul, AnaMaria. 1999. "Novela e Familia No Brasil." Rio de Janeiro: Congreso Brasileiro de Ciências de Comunicação.

Faria, Vilmar, and Joseph Potter. 1999. "Television, *Telenovelas*, and Fertility Change in North-East Brazil." In *Dynamics of Values in Fertility Change*, edited by Richard Leete, 252–72. Oxford, NY: Oxford University Press.

Flórez, Carmen Elisa, and Jairo Núñez. 2003. "Teenage Childbearing in Latin American Countries." In *Critical Decisions at a Critical Age: Adolescents and Young Adults in Latin America*, edited by

Suzanne Duryea, Alejandra Cox Edwards and Manuelita Ureta, 23–90. Washington, DC: Inter-American Development Bank.

Gentzkow, Matthew. 2006. "Television and Voter Turnout." *Quarterly Journal of Economics* 121 (3): 931–72.

Gentzkow, Matthew, and Jesse M. Shapiro. 2008. "Preschool Television Viewing and Adolescent Test Scores: Historical Evidence from the Coleman Study." *Quarterly Journal of Economics* 123 (1): 279–323.

Herzog, Clarice. 1994. "A Novela na Familia versus a Familia na Novela." Unpublished.

Jensen, Robert, and Emily Oster. 2009. "The Power of TV: Cable Television and Women's Status in India." *Quarterly Journal of Economics* 124 (3): 1057–94.

Kottak, Conrad. 1990. *Prime-Time Society: An Anthropological Analysis of Television and Culture*. Belmont, CA: Wadsworth Modern Anthropology Library.

La Ferrara, Eliana, Alberto Chong, and Suzanne Duryea. 2012. "Soap Operas and Fertility: Evidence from Brazil: Dataset. *American Economic Journal: Applied Economics*. http://dx.doi.org/10.1257/app.4.4.1.

Lam, David, and Suzanne Duryea. 1999. "Effects of Schooling on Fertility, Labor Supply, and Investments in Children, with Evidence from Brazil." *Journal of Human Resources* 34 (1): 160–92.

Lam, David, and Leticia Marteleto. 2005. "Small Families and Large Cohorts: The Impact of the Demographic Transition on Schooling in Brazil." In *Growing Up Global: The Changing Transitions to Adulthood in Developing Countries*, edited by Cynthia B. Lloyd, 56–83. Washington, DC: National Academies Press.

Lieberson, Stanley, and Eleanor O. Bell. 1992. "Children's First Names: An Empirical Study of Social Taste." *American Journal of Sociology* 98 (3): 511–54.

Lima, Venicio A. de. 2001. "Comunicação e política." São Paulo: Hacker Editores.

Lima, Venicio A. de, and Sérgio Capparelli. 2004. *Comunicação e Televisão: Desafios da pós-globalização.* São Paolo: Hacker Editores.

Marques de Melo, José. 1988. *As Novelas da Globo: Produção e Exportação.* São Paolo: Summus Editorial.

Martine, George. 1996. "Brazil's Fertility Decline, 1965–95: A Fresh Look at Key Factors." *Population and Development Review* 22 (1): 47–75.

McDonough, Peter, and Amaury de Sousa. 1981. *The Politics of Population in Brazil. Elite Ambivalence and Public Demand.* Austin: University of Texas Press.

Merrick, Thomas, and Elza Berquó. 1983. *The Determinants of Brazil's Recent Rapid Decline in Fertility*. Washington DC: National Academy Press.

Miguel, Luis Felipe. 2001. "Meios de Comunicação de Massa e Política no Brasil." *Diálogos Latinoamericanos* 3 (1): 43–70.

Moreno, Lorenzo. 1991. "An Alternative Model of the Impact of the Proximate Determinants on Fertility Change: Evidence from Latin America." *Population Studies* 45 (2): 313–37.

Olken, Benjamin A. 2009. "Do Television and Radio Destroy Social Capital? Evidence from Indonesian Villages." *American Economic Journal: Applied Economics* 1 (4): 1–33.

Paluck, Elizabeth Levy. 2009. "Reducing Intergroup Prejudice and Conflict Using the Media: A Field Experiment in Rwanda." *Journal of Personality and Social Psychology* 96 (3): 574–87.

Potter, Joseph E., Carl P. Schmertmann, and Suzana M. Cavenaghi. 2002. "Fertility and Development: Evidence from Brazil." *Demography* 39 (4): 739–61.

Rios-Neto, Luiz. 2001. "Television, Value Constructs, and Reproductive Behavior in Brazilian Excluded Communities." Paper presented at International Union for the Scientific Study of Population XXIV General Population Conference, Salvador, August 18–24.

Rutenberg, Naomi, Luis Hernando Ochoa, and Jose Maria Arruda. 1987. "The Proximate Determinants of Low Fertility in Brazil." *International Family Planning Perspectives* 13 (3): 75–80.

Stromberg, David. 2004. "Radio's Impact on Public Spending." *Quarterly Journal of Economics* 119 (1): 189–221.

Vink, Nico. 1988. *The Telenovela and Emancipation: A Study of Television and Social Change in Brazil*. Amsterdam: Royal Tropical Institute.

Zahar, Jorge, ed. 2003. *Programas de Dramaturgia and Entretenimento*. Vol.1, *Dicionario da TV Globo*. Rio de Janeiro: Globo.

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1. Wenhuan Wang, Congyu Zhao, Cong Dong, Huajun Yu, Yutao Wang, Xiaoguang Yang. 2022. Is the key-treatment-in-key-areas approach in air pollution control policy effective? Evidence from the action plan for air pollution prevention and control in China. *Science of The Total Environment* **843**, 156850. [Crossref]
2. Ming Gao, Qiankun Gu, Shijun He. 2022. Place-based policies, administrative hierarchy, and city growth: Evidence from China. *Economic Modelling* **115**, 105952. [Crossref]
3. Kegui Wang, Juxian Wang, Nan Dong. 2022. Government Intervention and Debt Financing Costs: Evidence from Government-Guided Funds. *Emerging Markets Finance and Trade* **58**:11, 3284-3296. [Crossref]
4. Wei Jiang, Xitao Li, Ruoxi Liu, Yijia Song. 2022. Local fiscal pressure, policy distortion and energy efficiency: Micro-evidence from a quasi-natural experiment in China. *Energy* **254**, 124287. [Crossref]
5. Thomas J. Prusa, Robert Teh, Min Zhu. 2022. PTAs and the incidence of antidumping disputes. *Journal of International Economics* **138**, 103630. [Crossref]
6. kalle (Karl Ove) Moene, Anders Kjelsrud, Shabana Mitra. 2022. Wheels of Power: Can free bicycles to schoolgirls free their mothers?. *Economic Development and Cultural Change* **20**. . [Crossref]
7. Yaoyu Zhang, Jin Liu, Bo Wang. 2022. The impact of High-Speed Rails on urban expansion: An investigation using an SDID with dynamic effects method. *Socio-Economic Planning Sciences* **82**, 101294. [Crossref]
8. Rui Zhang, Xiaotong Qie, Yanyong Hu, Xue Chen. 2022. Does de-capacity policy promote the efficient and green development of the coal industry? –Based on the evidence of China. *Resources Policy* **77**, 102717. [Crossref]
9. Shaohong Mu, Weixiu Li, Muhammad Mohiuddin. 2022. The Impact of Low-Carbon City (LCC) on Elderly People's Health: Evidence from a Natural Experiment in China. *International Journal of Environmental Research and Public Health* **19**:15, 9424. [Crossref]
10. Chao Han, Xian-Liang Tian. 2022. Less pollution under a more centralized environmental system: Evidence from vertical environmental reforms in China. *Energy Economics* **112**, 106121. [Crossref]
11. Ning Zhang, Xuhui Huang, Chao Qi. 2022. The effect of environmental regulation on the marginal abatement cost of industrial firms: Evidence from the 11th Five-Year Plan in China. *Energy Economics* **112**, 106147. [Crossref]
12. Bo Li, Yukai Han, Chensheng Wang, Wei Sun. 2022. Did civilized city policy improve energy efficiency of resource-based cities? Prefecture-level evidence from China. *Energy Policy* **167**, 113081. [Crossref]
13. Hongyang Li, Min Shao, Xinjie Shi. 2022. The impact of trade liberalization on individual fertility intention: Empirical evidence from China. *Population, Space and Place* **28**:6. . [Crossref]
14. Ishraq Ahmed. 2022. Television and women's reproductive behavior: evidence from Uganda. *Journal of Media Economics* **36**, 1-17. [Crossref]
15. Shanlang Lin, Tian Gan. 2022. Does High-Speed Rail Promote Agglomeration in China?. *Wireless Communications and Mobile Computing* **2022**, 1-16. [Crossref]
16. Peter Bönisch, Walter Hyll. 2022. Television and fertility: evidence from a natural experiment. *Empirical Economics* **28**. . [Crossref]

17. Jinghua Tang, Qigui Liu. 2022. Internal capital allocation in IPOs and corporate innovation: The moderating role of political connections. *Accounting & Finance* **22**. . [Crossref]
18. Hejie Zhang, Shenghau Lin. 2022. Property Taxes and Growth Patterns in China: Multiple Causal Inference Methods. *Frontiers in Psychology* **13**. . [Crossref]
19. Junhui Shi, Fang Wang. 2022. The Effect of High-Speed Rail on Cropland Abandonment in China. *Land* **11**:7, 1002. [Crossref]
20. Zhi Su, Peng Liu, Liyan Wu. 2022. Political Sensitivity and Carbon Emissions: Evidence From a Quasi-Natural Experiment of Leadership Change in China. *Frontiers in Energy Research* **10**. . [Crossref]
21. Yanyi Wei, Jialin Zhu, Jiahui Qiao, Dawei Zhang, Yuwen Chen. 2022. The Impact of the Consistency Evaluation Policy of Generic Drugs on R&D Investment Intensity of Pharmaceutical Companies—An Empirical Study Based on the Difference-in-Differences Model. *Frontiers in Public Health* **10**. . [Crossref]
22. Jinbo Wang, Maosheng Ran, Yi Li, Heng Zhan. 2022. Is venture capital a catalyst for innovative entrepreneurship in China? Empirical analysis based on the PSM-DID method. *Managerial and Decision Economics* **43**:4, 1039-1058. [Crossref]
23. Lewis S. Davis, Claudia R. Williamson. 2022. Individualism and women's economic rights. *Journal of Economic Behavior & Organization* **198**, 579-597. [Crossref]
24. Xinshuo Hou. 2022. Can Public–Private Partnership Wastewater Treatment Projects Help Reduce Urban Sewage Disposal? Empirical Evidence from 267 Cities in China. *International Journal of Environmental Research and Public Health* **19**:12, 7298. [Crossref]
25. Yihao Tian, Lijin Ding, Bin Yang, Feng Peng. 2022. The Effects of De-Capacity Policy on Steel and Coal Firms' Profitability: Evidence from China's Listed Companies. *Energies* **15**:12, 4377. [Crossref]
26. Dan Pan, Wei Hong. 2022. Benefits and costs of campaign-style environmental implementation: evidence from China's central environmental protection inspection system. *Environmental Science and Pollution Research* **29**:30, 45230-45247. [Crossref]
27. Xuejun Wang, Xiaoqi Zhang, Dan Meng, Harry M. Kaiser. 2022. The Effects of Product Standards on Trade: Quasi-Experimental Evidence from China. *Australian Economic Review* **55**:2, 232-249. [Crossref]
28. Hongjie Cao, Meina Li, Yuqi Lu, Yang Xu. 2022. The impact of strengthening government auditing supervision on fiscal sustainability: Evidence from China's auditing vertical management reform. *Finance Research Letters* **47**, 102825. [Crossref]
29. Dongyang Zhang. 2022. Does the green loan policy boost greener production? – Evidence from Chinese firms. *Emerging Markets Review* **51**, 100882. [Crossref]
30. Jianmin Dou, Zhipeng Tao, Yongbao Ji. 2022. Impact of Regional Development Strategy on the Productivity of Polluting Firms:Evidence From China. *Frontiers in Environmental Science* **10**. . [Crossref]
31. Chaofan Chen, Yongsheng Lin, Ning Lv, Wei Zhang, Yawen Sun. 2022. Can government low-carbon regulation stimulate urban green innovation? Quasi-experimental evidence from China's low-carbon city pilot policy. *Applied Economics* **38**, 1-21. [Crossref]
32. Xixiong Xu, Lingling Duan, Cuiliang Lin. 2022. Early Experience Within Tizhi System, Policy Perception and Corporate Innovation: Evidence from Chinese Private Firms. *Emerging Markets Finance and Trade* **36**, 1-14. [Crossref]

33. Gaoyi Lin, Yanyan Zhao, Wanmin Liu, Jianjun Zhou. 2022. The Impact of Internet Use on Corporate Tax Avoidance: Evidence from Chinese Enterprises. *Complexity* **2022**, 1-17. [Crossref]
34. Shiyi Chen, Xiaoxiao Ding, Pingyi Lou, Hong Song. 2022. New evidence of moral hazard: Environmental liability insurance and firms' environmental performance. *Journal of Risk and Insurance* **7**. . [Crossref]
35. Jason M. Lindo, Isaac D. Swensen, Glen R. Waddell. 2022. Effects of violent media content: Evidence from the rise of the UFC. *Journal of Health Economics* **83**, 102623. [Crossref]
36. Zhengning Pu, Jingyu Liu, Mingyan Yang. 2022. Could Green Technology Innovation Help Economy Achieve Carbon Neutrality Development–Evidence From Chinese Cities. *Frontiers in Environmental Science* **10**. . [Crossref]
37. Sen Iman, Zeina Afif, Varun Gauri, Gohdar Mohamed. Women's Labor Force Participation in the Kurdistan Region of Iraq: A Study of Social and Psychological Barriers . [Crossref]
38. Sheng Xu, Yunzhi Zhang, Jinghua Yin, Guan Huang. 2022. The Effect of the Image of Destinations on Household Income and Distribution: Evidence From China's Tourist Cities. *Frontiers in Psychology* **13**. . [Crossref]
39. Ruiqian Li, Guanghua Xu, Ramakrishnan Ramanathan. 2022. The impact of environmental investments on green innovation: An integration of factors that increase or decrease uncertainty. *Business Strategy and the Environment* **120**. . [Crossref]
40. Rollin F. Tusalem. 2022. Gendered Governance: Examining the Relationship between Women Legislators and Effective Public Goods Provision from a Global Sample. *Polity* **54**:2, 298-333. [Crossref]
41. Woojin Kim. 2022. Television and American consumerism. *Journal of Public Economics* **208**, 104609. [Crossref]
42. Jingyu Bi, En Xie, Shibin Sheng. 2022. Tie Strength Dispersion and Alliance Portfolio Performance: The Moderating Effects of CEOs' Political and International Experience. *British Journal of Management* **33**:2, 997-1023. [Crossref]
43. Mingsheng Li, Desheng Liu, Hongfeng Peng, Luxiu Zhang. 2022. Political connection and its impact on equity market. *Research in International Business and Finance* **60**, 101593. [Crossref]
44. Andreas Kuhn, Jürg Schweri, Stefan C. Wolter. 2022. Local norms describing the role of the state and the private provision of training. *European Journal of Political Economy* **44**, 102226. [Crossref]
45. Yantuan Yu, Ning Zhang. 2022. Does industrial transfer policy mitigate carbon emissions? Evidence from a quasi-natural experiment in China. *Journal of Environmental Management* **307**, 114526. [Crossref]
46. Hong Li, Xiaogang Wang, Yuantao Xie, Ting Chen, Haoming Han, Yichen Yang. 2022. The Impact of Transmission and Distribution Price Reform on Economic Growth in Liberalized Electricity Markets: An Inter-Provincial Panel Data Analysis. *Frontiers in Environmental Science* **9**. . [Crossref]
47. Jiaman Li, Qinzhe Jiang, Kangyin Dong, Xiucheng Dong. 2022. Does the local electricity price affect labor demand? Evidence from China's industrial enterprises. *Environment, Development and Sustainability* **207**. . [Crossref]
48. Chao Liu, Wei Zhang, Xiangyu Zhu. 2022. Does Digital Transformation Promote Enterprise Development?. *Journal of Organizational and End User Computing* **34**:7, 1-18. [Crossref]
49. Luca Tasciotti, Farooq Sulehria, Natascha Wagner. 2022. Fertility, electricity and television: is there a link? Evidence from Pakistan, 1990–2018. *Journal of Demographic Economics* **88**, 1-28. [Crossref]

50. Feng Hu, Liping Qiu, Xun Xi, Haiyan Zhou, Tianyu Hu, Ning Su, Haitao Zhou, Xiaolei Li, Shaobo Yang, Zhigang Duan, Zenan Dong, Zongjian Wu, Haibo Zhou, Ming Zeng, Ting Wan, Shaobin Wei. 2022. Has COVID-19 Changed China's Digital Trade?—Implications for Health Economics. *Frontiers in Public Health* **10**. . [Crossref]
51. Jiamei Wu, Zhibin Chen, Chong Guo. 2022. How does anti-corruption affect green innovation? Evidence from China. *Economic Analysis and Policy* **73**, 405-424. [Crossref]
52. Shengnan Ma. 2022. Growth effects of economic integration: New evidence from the Belt and Road Initiative. *Economic Analysis and Policy* **73**, 753-767. [Crossref]
53. Diva Dhar, Tarun Jain, Seema Jayachandran. 2022. Reshaping Adolescents' Gender Attitudes: Evidence from a School-Based Experiment in India. *American Economic Review* **112**:3, 899-927. [Abstract] [View PDF article] [PDF with links]
54. Camille Belmin, Roman Hoffmann, Peter-Paul Pichler, Helga Weisz. 2022. Fertility transition powered by women's access to electricity and modern cooking fuels. *Nature Sustainability* **5**:3, 245-253. [Crossref]
55. Yantuan Yu, Xudong Chen, Ning Zhang. 2022. Innovation and energy productivity: An empirical study of the innovative city pilot policy in China#. *Technological Forecasting and Social Change* **176**, 121430. [Crossref]
56. Hongyou Lu, Min Liu, Wenjing Song. 2022. Place-based policies, government intervention, and regional innovation: Evidence from China's Resource-Exhausted City program. *Resources Policy* **75**, 102438. [Crossref]
57. Youliang Yan, Xixiong Xu. 2022. Does Entrepreneur Invest More in Environmental Protection When Joining the Communist Party? Evidence from Chinese Private Firms. *Emerging Markets Finance and Trade* **58**:3, 754-775. [Crossref]
58. Yunmin Wang, Guohua Cao, Youliang Yan, Jingjing Wang. 2022. Does high-speed rail stimulate cross-city technological innovation collaboration? Evidence from China. *Transport Policy* **116**, 119-131. [Crossref]
59. Andrey Simonov, Justin Rao. 2022. Demand for Online News under Government Control: Evidence from Russia. *Journal of Political Economy* **130**:2, 259-309. [Crossref]
60. Liguang Zhang, Wanyi Chen, Liao Peng. 2022. The impact of tax enforcement on corporate investment efficiency: evidence from the tax administration information system. *Accounting & Finance* **52**. . [Crossref]
61. Anna-Maria Aksan. 2022. Son preference and the demographic transition. *Review of Development Economics* **26**:1, 32-56. [Crossref]
62. Carol Graham, Julia R. Pozuelo. 2022. Do high aspirations lead to better outcomes? Evidence from a longitudinal survey of adolescents in Peru. *Journal of Population Economics* **72**. . [Crossref]
63. Hugo K. S. Lam, Li Ding, Zhaoyingzi Dong. 2022. The impact of foreign competition on domestic firms' product quality: Evidence from a quasi-natural experiment in the United States. *Journal of Operations Management* **28**. . [Crossref]
64. Fred Mawunyo Dzanku, Robert Darko Osei, Paul Kwame Nkegbe, Isaac Osei-Akoto. 2022. Information delivery channels and agricultural technology uptake: experimental evidence from Ghana. *European Review of Agricultural Economics* **49**:1, 82-120. [Crossref]
65. Shiyi Chen, Lingduo Jiang, Wanlin Liu, Hong Song. 2022. Fireworks regulation, air pollution, and public health: Evidence from China. *Regional Science and Urban Economics* **92**, 103722. [Crossref]

66. José Henrique Costa Monteiro da Silva, Everton Emanuel Campos de Lima, Maria Coleta Ferreira Albino de Oliveira. 2022. Educational pairings and fertility decline in Brazil: An analysis using cohort fertility. *Demographic Research* **46**, 147-178. [Crossref]
67. Vegard Skirbekk. Fertility Preferences: How Many Children Do People Want? 177-193. [Crossref]
68. Franciele Hellwig, Aluisio JD Barros. 2022. Learning from success cases: ecological analysis of pathways to universal access to reproductive health care in low- and middle-income countries. *Gates Open Research* **6**, 59. [Crossref]
69. Ghada Barsoum, Bruno Crépon, Drew Gardiner, Bastien Michel, William Parienté. 2022. Evaluating the Impact of Entrepreneurship Edutainment in Egypt: An Experimental Approach. *Economica* **89**:353, 82-109. [Crossref]
70. Xuan Yang, Yue Wang, Di Chen, Xue Tan, Xue Tian, Lei Shi. 2021. Does the "Blue Sky Defense War Policy" Paint the Sky Blue?—A Case Study of Beijing–Tianjin–Hebei Region, China. *International Journal of Environmental Research and Public Health* **18**:23, 12397. [Crossref]
71. Dana Rogers, Leslie B. Snyder, Michelle Rego. 2021. The Impact of Mass Media-Delivered Family Planning Campaigns in Low- and Middle-Income Countries: A Meta-Analysis of Advertising and Entertainment-Education Format Effects. *Studies in Family Planning* **52**:4, 439-465. [Crossref]
72. Xiang Cao, Congbo Teng, Jijun Zhang. 2021. Impact of the Belt and Road Initiative on environmental quality in countries along the routes. *Chinese Journal of Population, Resources and Environment* **19**:4, 344-351. [Crossref]
73. Shuzhong Ma, Xueyao Guo, Hongsheng Zhang. 2021. New driving force for China's import growth: Assessing the role of cross-border e-commerce. *The World Economy* **44**:12, 3674-3706. [Crossref]
74. Yinxin Su, Mingzhi Hu, Xiaofen Yu. 2021. Does the development of smart cities help protect the environment?. *Journal of Environmental Planning and Management* **29**, 1-18. [Crossref]
75. Songbo Wu, Yue Lu, Xiaofeng Lv. 2021. Does value-added tax reform boost firms' domestic value added in exports? Evidence from China. *Review of International Economics* **29**:5, 1275-1299. [Crossref]
76. Katy Bergstrom, Berk Ozler. Improving the Well-Being of Adolescent Girls in Developing Countries **15**, . [Crossref]
77. Lisa Oberlander. 2021. TV exposure and food consumption patterns–evidence from Indonesia. *Health Economics* **30**:11, 2701-2721. [Crossref]
78. Changyuan Luo, Shiyi Sun, Guanghua Wan. 2021. The impact of political relations on international trade: China–Philippines island dispute as a quasi-natural experiment. *The World Economy* **44**:11, 3422-3441. [Crossref]
79. Eliana Rubiano-Matulevich. Do Gender Norms Become Less Traditional with Displacement? The Case of Colombia **9**, . [Crossref]
80. Riley Wilson. 2021. Moving to Jobs: The Role of Information in Migration Decisions. *Journal of Labor Economics* **39**:4, 1083-1128. [Crossref]
81. Sheng Xu, Chunchao Wang. 2021. City image and eco-efficiency: evidence from China. *Environmental Science and Pollution Research* **28**:37, 52459-52474. [Crossref]
82. Guixian Liu, Xiucheng Dong, Zhaoyang Kong, Kangyin Dong. 2021. Does national air quality monitoring reduce local air pollution? The case of PM2.5 for China. *Journal of Environmental Management* **296**, 113232. [Crossref]

83. Ruiming Liu, Yankun Kang, Jie Zhang. 2021. Ideological taboos, entry barriers, and FDI attraction: Evidence from China. *Journal of Asian Economics* **76**, 101365. [Crossref]

84. Yiping Wu, Hanyu Xiao, Fang Yang. 2021. Government information disclosure and citizen coproduction during COVID -19 in China. *Governance* **261**. . [Crossref]

85. Yue Lu, Wei Gu, Ka Zeng. 2021. Does the Belt and Road Initiative Promote Bilateral Political Relations?. *China & World Economy* **29**:5, 57-83. [Crossref]

86. Saima Bashir, Karen Guzzo. 2021. Women's Education, Spousal Agreement on Future Fertility Intentions, and Contraceptive Use in Pakistan. *Studies in Family Planning* **52**:3, 281-298. [Crossref]

87. Yizhong Huan, Yurong Yu, Tao Liang, Mark Burgman. 2021. A method for assessing the impacts of an international agreement on regional progress towards Sustainable Development Goals. *Science of The Total Environment* **785**, 147336. [Crossref]

88. Anikó Bíró, Ágnes Szabó-Morvai. 2021. Mass media coverage and vaccination uptake: evidence from the demand for meningococcal vaccinations in Hungary. *The European Journal of Health Economics* **22**:6, 887-903. [Crossref]

89. Zhi Yu, Yali Cao, Mo Liu. 2021. Does carbon emission trading policy affect bank loans of firms? Evidence from China. *Applied Economics Letters* 1-6. [Crossref]

90. Jin Xiao, Guohao Li, Bing Zhu, Ling Xie, Yi Hu, Jing Huang. 2021. Evaluating the impact of carbon emissions trading scheme on Chinese firms' total factor productivity. *Journal of Cleaner Production* **306**, 127104. [Crossref]

91. Zhongfei Chen, Xiao Zhang, Fanglin Chen. 2021. Do carbon emission trading schemes stimulate green innovation in enterprises? Evidence from China. *Technological Forecasting and Social Change* **168**, 120744. [Crossref]

92. Tongbin Yang, Yingming Zhu, Yujian Li, Bo Zhou. 2021. Achieving win-win policy outcomes for water resource management and economic development: The experience of Chinese cities. *Sustainable Production and Consumption* **27**, 873-888. [Crossref]

93. Jennifer Golan, Jing You. 2021. Raising Aspirations of Boys and Girls through Role Models: Evidence from a Field Experiment. *The Journal of Development Studies* **57**:6, 949-979. [Crossref]

94. Ling-Yun He, Xiao-Feng Qi. 2021. Environmental Courts, Environment and Employment: Evidence from China. *Sustainability* **13**:11, 6248. [Crossref]

95. Sirui Li, Jing Su, Ying Liu, Michael D. Lepech, Jie Wang. 2021. How "Belt and Road" initiative implementation has influenced R&D outcomes of Chinese enterprises: asset-exploitation or knowledge transfer?. *R&D Management* **51**:3, 273-292. [Crossref]

96. Alexander W. Cappelen, Ranveig Falch, Erik Ø. Sørensen, Bertil Tungodden. 2021. Solidarity and fairness in times of crisis. *Journal of Economic Behavior & Organization* **186**, 1-11. [Crossref]

97. Yibing Ding, Xiaojing Zhang, Ziwei Liu. 2021. Differences in returns to cross-border M&A in the short and long run: Evidence from Chinese listed firms. *Journal of Asian Economics* **74**, 101299. [Crossref]

98. Yan Wu, Zhixiang Cui, Cong Hu. 2021. Does the New Urbanization Influence Air Quality in China?. *Frontiers in Environmental Science* **9**. . [Crossref]

99. Ben Groom, Zachary Turk. 2021. Reflections on the Dasgupta Review on the Economics of Biodiversity. *Environmental and Resource Economics* **79**:1, 1-23. [Crossref]

100. Maria Petrova, Ananya Sen, Pinar Yildirim. 2021. Social Media and Political Contributions: The Impact of New Technology on Political Competition. *Management Science* **67**:5, 2997-3021. [Crossref]
101. Patrick Lubega, Frances Nakakawa, Gaia Narciso, Carol Newman, Archileo N. Kaaya, Cissy Kityo, Gaston A. Tumuhimbise. 2021. Body and mind: Experimental evidence from women living with HIV. *Journal of Development Economics* **150**, 102613. [Crossref]
102. Andrés Felipe Castro Torres. 2021. Analysis of Latin American Fertility in Terms of Probable Social Classes. *European Journal of Population* **37**:2, 297-339. [Crossref]
103. Huichao Du, Yun Xiao, Liqiu Zhao. 2021. Education and gender role attitudes. *Journal of Population Economics* **34**:2, 475-513. [Crossref]
104. Jakub Polansky, Murodbek Laldjebaev. 2021. Gendered energy relations at the crossroads of Asia: Electrification, empowerment, and mixed outcomes in northeastern Afghanistan. *Energy Research & Social Science* **73**, 101928. [Crossref]
105. Fei Peng, Langchuan Peng, Jie Mao, Peng Lu. 2021. The Short-Run Effect of a Local Fiscal Squeeze on Pollution Abatement Expenditures: Evidence from China's VAT Pilot Program. *Environmental and Resource Economics* **78**:3, 453-485. [Crossref]
106. Mingqin Wu, Xun Cao. 2021. Greening the career incentive structure for local officials in China: Does less pollution increase the chances of promotion for Chinese local leaders?. *Journal of Environmental Economics and Management* **83**, 102440. [Crossref]
107. Christopher Grady, Alice Iannantuoni, Matthew S. Winters. 2021. Influencing the means but not the ends: The role of entertainment-education interventions in development. *World Development* **138**, 105200. [Crossref]
108. Shiyi Chen, Hong Song, Chenyu Wu. 2021. Human capital investment and firms' industrial emissions: Evidence and mechanism. *Journal of Economic Behavior & Organization* **182**, 162-184. [Crossref]
109. Chuan-Ying Liu, Hou-Ming Fan, Xiu-jing Dang, Xuan Zhang. 2021. The Arctic policy and port development along the Northern Sea Route: Evidence from Russia's Arctic strategy. *Ocean & Coastal Management* **201**, 105422. [Crossref]
110. Peter Reinhard Hansen, Matthias Schmidtblaicher. 2021. A Dynamic Model of Vaccine Compliance: How Fake News Undermined the Danish HPV Vaccine Program. *Journal of Business & Economic Statistics* **39**:1, 259-271. [Crossref]
111. Marc Jeuland, T. Robert Fetter, Yating Li, Subhrendu K. Pattanayak, Faraz Usmani, Randall A. Bluffstone, Carlos Chávez, Hannah Girardeau, Sied Hassen, Pamela Jagger, Mónica M. Jaime, Mary Karumba, Gunnar Köhlin, Luciane Lenz, Erin L. Litzow, Lauren Masatsugu, Maria Angelica Naranjo, Jörg Peters, Ping Qin, Remidius D. Ruhinduka, Montserrat Serrano-Medrano, Maximiliane Sievert, Erin O. Sills, Michael Toman. 2021. Is energy the golden thread? A systematic review of the impacts of modern and traditional energy use in low- and middle-income countries. *Renewable and Sustainable Energy Reviews* **135**, 110406. [Crossref]
112. Mattia Nardotto, Sandra Sequeira. 2021. Identity, Media and Consumer Behavior. *SSRN Electronic Journal* **115**. . [Crossref]
113. Lewis S. Davis, Claudia R. Williamson. 2021. Individualism and Women's Economic Rights. *SSRN Electronic Journal* **44**. . [Crossref]
114. Yantuan Yu, Ning Zhang. 2021. Low-carbon city pilot and carbon emission efficiency: Quasi-experimental evidence from China. *Energy Economics* **100**, 105125. [Crossref]

115. Minzhe Du, Liping Liao, Bing Wang, Zhongfei Chen. 2021. Evaluating the effectiveness of the water-saving society construction in China: A quasi-natural experiment. *Journal of Environmental Management* **277**, 111394. [Crossref]
116. Sandro Cabral, Leandro Pongeluppe, Nobuiuki Ito. 2021. The Disastrous Effects of Leaders in Denial: Evidence from the COVID-19 Crisis in Brazil. *SSRN Electronic Journal* **191**. . [Crossref]
117. Jingjing Zheng, Xuefeng Shao, Wei Liu, Jie Kong, Gaoshan Zuo. 2021. The Impact of the Pilot Program on Industrial Structure Upgrading in Low-carbon Cities. *Journal of Cleaner Production* 125868. [Crossref]
118. Weiping Shen, Yong Wang, Weijie Luo. 2021. Does the Porter hypothesis hold in China? Evidence from the low-carbon city pilot policy. *Journal of Applied Economics* **24**:1, 246-269. [Crossref]
119. Andrea Kelly, Jason M. Lindo, Analisa Packham. 2020. The power of the IUD: Effects of expanding access to contraception through Title X clinics. *Journal of Public Economics* **192**, 104288. [Crossref]
120. Mingsheng Li, Desheng Liu, Hongfeng Peng, Luxiu Zhang. 2020. Does low synchronicity mean more or less informative prices? Evidence from an emerging market. *Journal of Financial Stability* **51**, 100817. [Crossref]
121. Jacy Reese. 2020. Institutional change and the limitations of consumer activism. *Palgrave Communications* **6**:1. . [Crossref]
122. Jinyu Liu, Zhengwei Wang, Wuxiang Zhu. 2020. Does privatization reform alleviate ownership discrimination? Evidence from the Split-share structure reform in China. *Journal of Corporate Finance* 101848. [Crossref]
123. Asli Demirguc-Kunt, Michael Lokshin, Ivan Torre. Opening-Up Trajectories and Economic Recovery: Lessons after the First Wave of the COVID-19 Pandemic **109**, . [Crossref]
124. Kun Wang, Yaozhi Chen, Yao Liu, Yingkai Tang. 2020. Board secretary's financial experience, overconfidence, and SMEs' financing preference: Evidence from China's NEEQ market. *Journal of Small Business Management* **12**, 1-33. [Crossref]
125. Marta Favara, Pablo Lavado, Alan Sánchez. 2020. Understanding teenage fertility in Peru: An analysis using longitudinal data. *Review of Development Economics* **24**:4, 1217-1236. [Crossref]
126. Veronica Toffolutti, Hai Ma, Giulia Menichelli, Ester Berlot, Letizia Mencarini, Arnstein Aassve. 2020. How the internet increases modern contraception uptake: evidence from eight sub-Saharan African countries. *BMJ Global Health* **5**:11, e002616. [Crossref]
127. Giovanna d'Adda, Martin Dufwenberg, Francesco Passarelli, Guido Tabellini. 2020. Social norms with private values: Theory and experiments. *Games and Economic Behavior* **124**, 288-304. [Crossref]
128. Abdul-Aziz Seidu, Bright Opoku Ahinkorah, John Elvis Hagan, Edward Kwabena Ameyaw, Eric Abodey, Amanda Odoi, Ebenezer Agbaglo, Francis Sambah, Vivian Tackie, Thomas Schack. 2020. Mass Media Exposure and Women's Household Decision-Making Capacity in 30 Sub-Saharan African Countries: Analysis of Demographic and Health Surveys. *Frontiers in Psychology* **11**. . [Crossref]
129. Fangjing Hao, Yuantao Xie, Xiaojiao Liu. 2020. The Impact of Green Credit Guidelines on the Technological Innovation of Heavily Polluting Enterprises: A Quasi-Natural Experiment from China. *Mathematical Problems in Engineering* **2020**, 1-13. [Crossref]

130. Jie Ouyang, Kezhong Zhang, Bo Wen, Yuanping Lu. 2020. Top-Down and Bottom-Up Approaches to Environmental Governance in China: Evidence from the River Chief System (RCS). *International Journal of Environmental Research and Public Health* **17**:19, 7058. [Crossref]
131. Guanglai Zhang, Ning Zhang. 2020. The effect of China's pilot carbon emissions trading schemes on poverty alleviation: A quasi-natural experiment approach. *Journal of Environmental Management* **271**, 110973. [Crossref]
132. Huiting Lin, Yurun He, Maolin Wang, Yehua Huang. 2020. The State-Owned Capital Gains Handover System and managerial agency cost: Evidence from central state-owned listed companies in China. *Finance Research Letters* **36**, 101325. [Crossref]
133. Garance Genicot, Debraj Ray. 2020. Aspirations and Economic Behavior. *Annual Review of Economics* **12**:1, 715-746. [Crossref]
134. Di Zhou, Xiaoyu Liang, Ye Zhou, Kai Tang. 2020. Does Emission Trading Boost Carbon Productivity? Evidence from China's Pilot Emission Trading Scheme. *International Journal of Environmental Research and Public Health* **17**:15, 5522. [Crossref]
135. Tongil "TI" Kim, Diwas KC. 2020. Can Viagra Advertising Make More Babies? Direct-to-Consumer Advertising on Public Health Outcomes. *Journal of Marketing Research* **57**:4, 599-616. [Crossref]
136. Catherine Porter, Danila Serra. 2020. Gender Differences in the Choice of Major: The Importance of Female Role Models. *American Economic Journal: Applied Economics* **12**:3, 226-254. [Abstract] [View PDF article] [PDF with links]
137. Valentina Rotondi, Ridhi Kashyap, Luca Maria Pesando, Simone Spinelli, Francesco C. Billari. 2020. Leveraging mobile phones to attain sustainable development. *Proceedings of the National Academy of Sciences* **117**:24, 13413-13420. [Crossref]
138. Yunsen Chen, Jianqiao Huang, Sheng Xiao, Ziye Zhao. 2020. The "home bias" of corporate subsidiary locations. *Journal of Corporate Finance* **62**, 101591. [Crossref]
139. Anna M. Wilke, Donald P. Green, Jasper Cooper. 2020. A placebo design to detect spillovers from an education–entertainment experiment in Uganda. *Journal of the Royal Statistical Society: Series A (Statistics in Society)* **183**:3, 1075-1096. [Crossref]
140. Kjetil Bjorvatn, Alexander W. Cappelen, Linda Helgesson Sekei, Erik Ø. Sørensen, Bertil Tungodden. 2020. Teaching Through Television: Experimental Evidence on Entrepreneurship Education in Tanzania. *Management Science* **66**:6, 2308-2325. [Crossref]
141. Alex Armand, Paul Atwell, Joseph F. Gomes. 2020. The Reach of Radio: Ending Civil Conflict through Rebel Demobilization. *American Economic Review* **110**:5, 1395-1429. [Abstract] [View PDF article] [PDF with links]
142. Maxwell Mkondiwa. 2020. Games of strategy in culture and economics research. *Journal of Economic Methodology* **27**:2, 146-163. [Crossref]
143. David A. Jaeger, Theodore J. Joyce, Robert Kaestner. 2020. A Cautionary Tale of Evaluating Identifying Assumptions: Did Reality TV Really Cause a Decline in Teenage Childbearing?. *Journal of Business & Economic Statistics* **38**:2, 317-326. [Crossref]
144. Mohammad Refakar, Jean-Pierre Gueyie. 2020. Media corruption perceptions and US foreign direct investment. *Journal of Media Economics* **33**:1-2, 13-29. [Crossref]
145. Cenjie Liu, Chunbo Ma, Rui Xie. 2020. Structural, Innovation and Efficiency Effects of Environmental Regulation: Evidence from China's Carbon Emissions Trading Pilot. *Environmental and Resource Economics* **75**:4, 741-768. [Crossref]

146. Miao Miao, Yan Zhang, Shilin Zheng. 2020. Within-Firm Wage Inequality and Corporate Innovation: Evidence from China's Listed Firms. *Emerging Markets Finance and Trade* **56**:4, 796-819. [Crossref]

147. Tomoki Fujii, Abu S. Shonchoy. 2020. Fertility and rural electrification in Bangladesh. *Journal of Development Economics* **143**, 102430. [Crossref]

148. Yi Li, Lili Ding, Yongliang Yang. 2020. Can the Introduction of an Environmental Target Assessment Policy Improve the TFP of Textile Enterprises? A Quasi-Natural Experiment Based on the Huai River Basin in China. *Sustainability* **12**:4, 1696. [Crossref]

149. Oriana Bandiera, Niklas Buehren, Robin Burgess, Markus Goldstein, Selim Gulesci, Imran Rasul, Munshi Sulaiman. 2020. Women's Empowerment in Action: Evidence from a Randomized Control Trial in Africa. *American Economic Journal: Applied Economics* **12**:1, 210-259. [Abstract] [View PDF article] [PDF with links]

150. Nicolás Ajzenman, Tiago Cavalcanti, Daniel Da Mata. 2020. More Than Words: Leaders' Speech and Risky Behavior during a Pandemic. *SSRN Electronic Journal* . [Crossref]

151. Francesco Billari, Valentina Rotondi, Jenny Trinitapoli. 2020. Mobile phones, digital inequality, and fertility: Longitudinal evidence from Malawi. *Demographic Research* **42**, 1057-1096. [Crossref]

152. Marco Colagrossi, Claudio Deiana, Andrea Geraci, Ludovica Giua. 2020. Hang Up on Stereotypes: Domestic Violence and Anti-Abuse Helpline Campaign. *SSRN Electronic Journal* . [Crossref]

153. Caspar David Peter, Jochen Pierk. 2020. Does Shark Tank Enhance Entrepreneurial Activities?. *SSRN Electronic Journal* . [Crossref]

154. Ziteng Lei. 2020. Knowledge Reshapes Destiny: The Causal Effects of Education on Attitudes. *SSRN Electronic Journal* . [Crossref]

155. Xian Zheng, Wenwei Peng, Mingzhi Hu. 2020. Airport noise and house prices: A quasi-experimental design study. *Land Use Policy* **90**, 104287. [Crossref]

156. Diva Dhar, Tarun Jain, Seema Jayachandran. 2019. Intergenerational Transmission of Gender Attitudes: Evidence from India. *The Journal of Development Studies* **55**:12, 2572-2592. [Crossref]

157. Jacqueline Safieh, Tibor Schuster, Britt McKinnon, Amy Booth, Yves Bergevin. 2019. Reported evidence on the effectiveness of mass media interventions in increasing knowledge and use of family planning in low and middle-income countries: a systematic mixed methods review. *Journal of Global Health* **9**:2. . [Crossref]

158. Jacqueline Safieh, Tibor Schuster, Britt McKinnon, Amy Booth, Yves Bergevin. 2019. Reported evidence on the effectiveness of mass media interventions in increasing knowledge and use of family planning in low and middle-income countries: a systematic mixed methods review. *Journal of Global Health* **9**:2. . [Crossref]

159. Olivier Bargain, Delphine Boutin, Hugues Champeaux. 2019. Women's political participation and intrahousehold empowerment: Evidence from the Egyptian Arab Spring. *Journal of Development Economics* **141**, 102379. [Crossref]

160. Luca Maria Pesando. 2019. Rethinking and Revising Goode's Contribution to Global Family Change. *Marriage & Family Review* **55**:7, 619-630. [Crossref]

161. Adrienne M. Lucas, Nicholas L. Wilson. 2019. Schooling, Wealth, Risky Sexual Behaviour, and HIV/AIDS in Sub-Saharan Africa. *The Journal of Development Studies* **55**:10, 2177-2192. [Crossref]

162. Niels-Hugo Blunch. 2019. My Choice: Women's Contraceptive-Use Autonomy in Bangladesh. *Feminist Economics* **25**:4, 68-93. [Crossref]
163. Jennifer Richmond, Johannes Urpelainen. 2019. Electrification and appliance ownership over time: Evidence from rural India. *Energy Policy* **133**, 110862. [Crossref]
164. Jun Gu, Annika Mueller, Ingrid Nielsen, Jason Shachat, Russell Smyth. 2019. Improving Intergroup Relations through Actual and Imagined Contact: Field Experiments with Malawian Shopkeepers and Chinese Migrants. *Economic Development and Cultural Change* **68**:1, 273-303. [Crossref]
165. Wenjing Gao, Yao Lu, Xinzheng Shi. 2019. TRADE LIBERALIZATION AND CORPORATE INCOME TAX AVOIDANCE. *Economic Inquiry* **57**:4, 1963-1980. [Crossref]
166. Francesco C. Billari, Osea Giuntella, Luca Stella. 2019. Does broadband Internet affect fertility?. *Population Studies* **73**:3, 297-316. [Crossref]
167. Monica Das Gupta. 2019. Is banning sex-selection the best approach for reducing prenatal discrimination?. *Asian Population Studies* **15**:3, 319-336. [Crossref]
168. Andrea Di Miceli. 2019. Horizontal vs. vertical transmission of fertility preferences. *Journal of Comparative Economics* **47**:3, 562-578. [Crossref]
169. Eeshani Kandpal, Kathy Baylis. 2019. The social lives of married women: Peer effects in female autonomy and investments in children. *Journal of Development Economics* **140**, 26-43. [Crossref]
170. Christian Cordes. 2019. The promises of a naturalistic approach: how cultural evolution theory can inform (evolutionary) economics. *Journal of Evolutionary Economics* **29**:4, 1241-1262. [Crossref]
171. Patricia Justino. 2019. Governance Interventions in Conflict-Affected Countries. *The Journal of Development Studies* **55**:7, 1364-1378. [Crossref]
172. Ruben Durante, Paolo Pinotti, Andrea Tesei. 2019. The Political Legacy of Entertainment TV. *American Economic Review* **109**:7, 2497-2530. [Abstract] [View PDF article] [PDF with links]
173. Shatanjaya Dasgupta. 2019. Impact of exposure to mass media on female empowerment: evidence from India. *International Journal of Development Issues* **18**:2, 243-258. [Crossref]
174. Vegard Iversen, Richard Palmer-Jones. 2019. All You Need is Cable TV?. *The Journal of Development Studies* **55**:5, 946-966. [Crossref]
175. Abhijit Banerjee, Eliana La Ferrara, Victor Orozco. 2019. Entertainment, Education, and Attitudes Toward Domestic Violence. *AEA Papers and Proceedings* **109**, 133-137. [Abstract] [View PDF article] [PDF with links]
176. Raphael Bruce, Rafael Costa Lima. 2019. Compulsory voting and TV news consumption. *Journal of Development Economics* **138**, 165-179. [Crossref]
177. Pamela Campa, Michel Serafinelli. 2019. Politico-Economic Regimes and Attitudes: Female Workers under State Socialism. *The Review of Economics and Statistics* **101**:2, 233-248. [Crossref]
178. Masooda Bano. 2019. Religion and female empowerment: evidence from Pakistan and northern Nigeria. *Canadian Journal of Development Studies / Revue canadienne d'études du développement* **40**:2, 163-181. [Crossref]
179. Jonas Hjort, Jonas Poulsen. 2019. The Arrival of Fast Internet and Employment in Africa. *American Economic Review* **109**:3, 1032-1079. [Abstract] [View PDF article] [PDF with links]
180. Wen-Tai Hsu, Yi Lu, Xuan Luo, Lianming Zhu. 2019. Does Foreign Direct Investment Lead to Industrial Agglomeration?. *SSRN Electronic Journal* . [Crossref]

181. Alberto Chong, Cecilia de Mendoza. Financial Inclusion, Content, and Information Technologies in Latin America 392-402. [Crossref]

182. Jenny C. Aker. 2019. Information and Communication Technologies and Rural Youth. *SSRN Electronic Journal* . [Crossref]

183. Roee Levy, Martin Mattsson. 2019. The Effects of Social Movements: Evidence from #MeToo. *SSRN Electronic Journal* . [Crossref]

184. Shaowei Ke, Yao Lu, Xinzheng Shi, Yeqing Zhang. 2019. Can Investment Incentives Crowd Out Innovation? Evidence from China. *SSRN Electronic Journal* . [Crossref]

185. Andrew Crawford, Paul Lajbcygier, Pushkar Maitra. 2018. Financial education via television comedy. *Applied Economics Letters* **25**:20, 1407-1410. [Crossref]

186. Arnaud Philippe, Aurélie Ouss. 2018. "No Hatred or Malice, Fear or Affection": Media and Sentencing. *Journal of Political Economy* **126**:5, 2134-2178. [Crossref]

187. George Akpandjar, Conrad Puozaa, Peter Quartey. 2018. Explaining Fertility Variation in Rural Communities: The Role of Electricity in Ghana. *Economies* **6**:3, 40. [Crossref]

188. Nicola Mastrorocco, Luigi Minale. 2018. News media and crime perceptions: Evidence from a natural experiment. *Journal of Public Economics* **165**, 230-255. [Crossref]

189. Janina Isabel Steinert, Lucie Dale Cluver, Franziska Meinck, Jenny Doubt, Sebastian Vollmer. 2018. Household economic strengthening through financial and psychosocial programming: Evidence from a field experiment in South Africa. *Journal of Development Economics* **134**, 443-466. [Crossref]

190. Pamela Campa. 2018. Press and leaks: Do newspapers reduce toxic emissions?. *Journal of Environmental Economics and Management* **91**, 184-202. [Crossref]

191. Catalina Amuedo-Dorantes, Susan Pozo. 2018. Assessing the Effectiveness of Pay-to-Go Policies: Evidence from Spain's Voluntary Return Program 1. *International Migration Review* **52**:3, 750-779. [Crossref]

192. Oliver Vanden Eynde, Patrick M. Kuhn, Alexander Moradi. 2018. Trickle-Down Ethnic Politics: Drunk and Absent in the Kenya Police Force (1957–1970). *American Economic Journal: Economic Policy* **10**:3, 388-417. [Abstract] [View PDF article] [PDF with links]

193. Yvonne Jie Chen, Pei Li, Yi Lu. 2018. Career concerns and multitasking local bureaucrats: Evidence of a target-based performance evaluation system in China. *Journal of Development Economics* **133**, 84-101. [Crossref]

194. Hanna Grol-Prokopczyk. 2018. Celebrity culture and demographic change: The case of celebrity nonmarital fertility, 1974–2014. *Demographic Research* **39**, 251-284. [Crossref]

195. Charlotte Emlinger, Sandra Poncet. 2018. With a little help from my friends: Multinational retailers and China's consumer market penetration. *Journal of International Economics* **112**, 1-12. [Crossref]

196. Catalina Amuedo-Dorantes, Esther Arenas-Arroyo, Almudena Sevilla. 2018. Immigration enforcement and economic resources of children with likely unauthorized parents. *Journal of Public Economics* **158**, 63-78. [Crossref]

197. Breno Braga. 2018. The Effects of Unilateral Trade Liberalization on Marriage and Fertility Choices: Evidence from Brazil. *SSRN Electronic Journal* . [Crossref]

198. Tuan Anh Luong, Ce Matthew Shi, Zheng Wang. 2018. The Impact of Media on Trade: Evidence from the 2008 China Milk Contamination Scandal. *SSRN Electronic Journal* . [Crossref]

199. Anja Tolonen. 2018. Endogenous Gender Norms: Evidence From Africa's Gold Mining Industry. *SSRN Electronic Journal* . [Crossref]
200. Xian Zheng, Yonghong Zhou. 2018. Trade Liberalization and Wages: Evidence from the Closer Economic Partnership Arrangement between Mainland China and Hong Kong. *SSRN Electronic Journal* . [Crossref]
201. Diva Dhar, Tarun Jain, Seema Jayachandran. 2018. Reshaping Adolescents' Gender Attitudes: Evidence from a School-Based Experiment in India. *SSRN Electronic Journal* . [Crossref]
202. Alberto Chong, Cecilia de Mendoza. Financial Inclusion, Content, and Information Technologies in Latin America 7214-7222. [Crossref]
203. Craig Palsson. 2017. Smartphones and child injuries. *Journal of Public Economics* **156**, 200-213. [Crossref]
204. Anthony Almond. Experiment, Natural 1-5. [Crossref]
205. Tiloka de Silva, Silvana Tenreyro. 2017. Population Control Policies and Fertility Convergence. *Journal of Economic Perspectives* **31**:4, 205-228. [Abstract] [View PDF article] [PDF with links]
206. Vittorio Bassi, Imran Rasul. 2017. Persuasion: A Case Study of Papal Influences on Fertility-Related Beliefs and Behavior. *American Economic Journal: Applied Economics* **9**:4, 250-302. [Abstract] [View PDF article] [PDF with links]
207. Tanja Winther, Margaret N. Matinga, Kirsten Ulsrud, Karina Standal. 2017. Women's empowerment through electricity access: scoping study and proposal for a framework of analysis. *Journal of Development Effectiveness* **9**:3, 389-417. [Crossref]
208. . Citizens as Agents of Change 225-255. [Crossref]
209. Alberto Chong, Mónica Yañez-Pagans. 2017. Impact of Long Run Exposure to Television on Homicides: Some Evidence from Brazil. *The Journal of Development Studies* **53**:1, 18-31. [Crossref]
210. Melanie Guldi, Chris M. Herbst. 2017. Offline effects of online connecting: the impact of broadband diffusion on teen fertility decisions. *Journal of Population Economics* **30**:1, 69-91. [Crossref]
211. Tomoki Fujii, Abu Shonchoy. 2017. Fertility and Rural Electrification in Bangladesh. *SSRN Electronic Journal* . [Crossref]
212. Riley Wilson. 2017. Moving to Jobs: The Role of Information in Migration Decisions. *SSRN Electronic Journal* . [Crossref]
213. Alberto Chong, Martin Valdivia. 2017. Social Media Instruments and the Promotion of Financial Inclusion in Peruvian Rural Areas. *SSRN Electronic Journal* . [Crossref]
214. Tongil 'TI' Kim. 2017. Can Viagra Advertising Make More Babies?. *SSRN Electronic Journal* . [Crossref]
215. Andrey Simonov, Justin M. Rao. 2017. Demand for (Un)Biased News: Government Control in Online News Markets. *SSRN Electronic Journal* . [Crossref]
216. Roman Zakharenko. 2016. Endogenous growth and demographic transition in a model of cultural transmission. *Journal of Evolutionary Economics* **26**:5, 953-970. [Crossref]
217. Haimanti Bhattacharya. 2016. Mass media exposure and attitude towards spousal violence in India. *The Social Science Journal* **53**:4, 398-416. [Crossref]
218. Mathieu Couttenier, Sophie Hatte. 2016. Mass media effects on non-governmental organizations. *Journal of Development Economics* **123**, 57-72. [Crossref]

219. Kandice A. Kapinos, Olga Yakusheva. 2016. Long-Term Effect of Exposure to a Friend's Adolescent Childbirth on Fertility, Education, and Earnings. *Journal of Adolescent Health* **59**:3, 311-317.e2. [Crossref]

220. Renos Vakis, Jamele Rigolini, Leonardo Lucchetti. From Diagnosis to Policies: Crafting Coordinated Policies That Reduce Chronic Poverty 99-120. [Crossref]

221. Caroline Krafft. 2016. Women, work and welfare in the Middle East and North Africa: the role of socio-demographics, entrepreneurship and public policies. *Middle East Development Journal* **8**:2, 358-361. [Crossref]

222. Zhen Guo, Monica Das Gupta, Shuzhuo Li. 2016. 'Missing girls' in China and India: trends and policy challenges. *Asian Population Studies* **12**:2, 135-155. [Crossref]

223. Louise Grogan. 2016. Household Electrification, Fertility, and Employment: Evidence from Hydroelectric Dam Construction in Colombia. *Journal of Human Capital* **10**:1, 109-158. [Crossref]

224. Leonardo Bursztyn, Davide Cantoni. 2016. A Tear in the Iron Curtain: The Impact of Western Television on Consumption Behavior. *Review of Economics and Statistics* **98**:1, 25-41. [Crossref]

225. E. Borisova, A. Kulkova. 2016. Culture, names and economic development. *Voprosy Ekonomiki* :1, 81-106. [Crossref]

226. . Expanding opportunities 100-145. [Crossref]

227. Andrew Dickens. 2016. Population Relatedness and Cross-Country Idea Flows: Evidence from Book Translations. *SSRN Electronic Journal* . [Crossref]

228. Maria Petrova, Ananya Sen. 2016. Social Media and Political Donations: New Technology and Incumbency Advantage in the United States. *SSRN Electronic Journal* . [Crossref]

229. Richard Sedlmayr. 2016. Engaging the Productive Mindset of Cash Transfer Recipients: A Dual Approach to Poverty Relief. *SSRN Electronic Journal* . [Crossref]

230. Min Yu. 2016. Research on the Impact of Infrastructure Construction on Tourism Industry: Evidence from the "Wuhan-Guangzhou High-Speed Rail". *Open Journal of Social Sciences* **04**:01, 126-131. [Crossref]

231. D.E. Bloom, D.L. Luca. The Global Demography of Aging 3-56. [Crossref]

232. Melissa S. Kearney, Phillip B. Levine. 2015. Media Influences on Social Outcomes: The Impact of MTV's 16 and Pregnant on Teen Childbearing. *American Economic Review* **105**:12, 3597-3632. [Abstract] [View PDF article] [PDF with links]

233. K. Sudhir, Joe Priester, Matt Shum, David Atkin, Andrew Foster, Ganesh Iyer, Ginger Jin, Daniel Keniston, Shinobu Kitayama, Mushfiq Mobarak, Yi Qian, Ishani Tewari, Wendy Wood. 2015. Research Opportunities in Emerging Markets: an Inter-disciplinary Perspective from Marketing, Economics, and Psychology. *Customer Needs and Solutions* **2**:4, 264-276. [Crossref]

234. Elizabeth Levy Paluck, Paul Lagunes, Donald P. Green, Lynn Vavreck, Limor Peer, Robin Gomila. 2015. Does Product Placement Change Television Viewers' Social Behavior?. *PLOS ONE* **10**:9, e0138610. [Crossref]

235. Jo Boyden, Stefan Dercon, Abhijeet Singh. 2015. Child Development in a Changing World: Risks and Opportunities. *The World Bank Research Observer* **30**:2, 193-219. [Crossref]

236. Seema Jayachandran. 2015. The Roots of Gender Inequality in Developing Countries. *Annual Review of Economics* **7**:1, 63-88. [Crossref]

237. Aniruddha Mitra, James T. Bang, Arnab Biswas. 2015. Media freedom and gender equality: a cross-national instrumental variable quantile analysis. *Applied Economics* **47**:22, 2278-2292. [Crossref]
238. Shaun McRae. 2015. Infrastructure Quality and the Subsidy Trap. *American Economic Review* **105**:1, 35-66. [Abstract] [View PDF article] [PDF with links]
239. Stefano DellaVigna, Eliana La Ferrara. Economic and Social Impacts of the Media 723-768. [Crossref]
240. Tanguy Bernard, Stefan Dercon, Kate Orkin, Alemayehu Seyoum Taffesse. 2015. Will Video Kill the Radio Star? Assessing the Potential of Targeted Exposure to Role Models through Video: Table 1:. *The World Bank Economic Review* **29**:suppl 1, S226-S237. [Crossref]
241. Deming Luo, Yanjun Liu, Yiyun Wu, Xiwei Zhu, Xiangrong Jin. 2015. Does Development Zone Have Spillover Effect in China?. *SSRN Electronic Journal* . [Crossref]
242. Peter Boenisch, Walter Hyll. 2015. Television Role Models and Fertility Evidence from a Natural Experiment. *SSRN Electronic Journal* . [Crossref]
243. . Spotlight 2: Entertainment education 76-77. [Crossref]
244. . Thinking with mental models 62-75. [Crossref]
245. . Overview: Human decision making and development policy 1-23. [Crossref]
246. Hsin-Lan Ting, Chon-Kit Ao, Ming-Jen Lin. 2014. Television on Women's Empowerment in India. *The Journal of Development Studies* **50**:11, 1523-1537. [Crossref]
247. Jörg Peters, Christoph Strupat, Colin Vance. 2014. Television and Contraceptive Use – A Weak Signal?. *The Journal of Development Studies* **50**:11, 1538-1549. [Crossref]
248. Puja Dutta, Rinku Murgai, Martin Ravallion, Dominique van de Walle. Overview 1-22. [Crossref]
249. Niclas Berggren, Therese Nilsson. 2014. Globalization and the Transmission of Social Values: The Case of Tolerance. *SSRN Electronic Journal* . [Crossref]
250. George M Akpandjar, Peter Quartey, Conrad Y Puozaa. 2014. From Darkness to Light: The Effect of Electrification on Fertility in Rural Ghana. *SSRN Electronic Journal* . [Crossref]
251. Catherine Rodriguez, Fabio Sanchez, Sandra Zamora. 2014. On the Radio: Effectiveness of the Viva Seguro Financial Education Program. *SSRN Electronic Journal* . [Crossref]
252. Sofia Amaral. 2014. Do Improved Property Rights Decrease Violence Against Women in India?. *SSRN Electronic Journal* . [Crossref]
253. Michael Grimm, Anicet Munyehirwe, Joerg Peters, Maximiliane Sievert. 2014. A First Step Up the Energy Ladder? Low Cost Solar Kits and Household's Welfare in Rural Rwanda. *SSRN Electronic Journal* . [Crossref]
254. Roman Zakharenko. 2014. Endogenous Growth and Demographic Transition in a Model of Cultural Transmission. *SSRN Electronic Journal* . [Crossref]
255. Filipe R. Campante, Daniel A. Hojman. 2013. Media and polarization. *Journal of Public Economics* **100**, 79-92. [Crossref]
256. Jennifer M. Trudeau. 2013. The Role of New Media on Teen Sexual Behaviors and Fertility Outcomes The Case of '16 and Pregnant'. *SSRN Electronic Journal* . [Crossref]