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Internet and the Timing of Births

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Abstract

Technological innovations directly related to fertility have been linked to the timing of births, i.e. with postponement in the case of contraceptive technology and with "recuperation" in the case of assisted reproductive technology. We argue that the diffusion of the Internet also plays a role as an "enabling" factor in fertility choices, with a particular effect on the timing of fertility. After discussing the potential pathways for this effect, we hypothesize Internet access to contribute to lowering fertility in earlier ages and stages of the life course, and to raising fertility in later ages and stages of the life course. We also hypothesize that these age- and stage-specific effects are stratified by gender and socioeconomic status. We conduct analyses using longitudinal data from the US (NLSY) and UK (Understanding Society).

1. Introduction

When we think of technology as a determinant of fertility, contraception comes immediately to our mind. Indeed, secular fertility decline in Europe and North America did not rely on modern contraceptive techniques, which appeared (e.g., condoms) in the second half of the nineteenth century. Still, withdrawal and abstinence have been the main contraceptive technologies through which the great fertility transition progressed until the mid-twentieth century (Guinnane 2011; Santow 1993). Starting from the 1960s, the contraceptive pill, as well as other new technologies, have better control to young women, and have been crucial in determining increased female educational attainment through the possibility to disconnect sexual debut and motherhood (Goldin 2006; Goldin and Katz 2002). The proponents of the "Second Demographic Transition" idea view the introduction of efficient contraception as the crucial prerequisite that enables individuals to postpone the transition to parenthood to later ages, so that one's own goals of self-realization could be fulfilled (Lesthaeghe 2010; Lesthaeghe 2014; van de Kaa 2001). In short, the diffusion of contraceptive technology is an enabling factor for lower fertility, especially at younger ages and stages of the life course.

On the contrary, reproductive technology might become an enabling factor for higher fertility. This is undoubtedly the case of assisted reproduction technology (ART) (Sobotka, Hansen, Jensen, Pedersen, Lutz, and Skakkebaek 2008). A 2004 review by Leridon (2004) showed that technologies available by that date could make up only for less than a third of the "natural" fertility decline occurring with age for women (see de la Rochebrochard et al (2006) concerning men's age and Schmidt et al (2012) for a more recent review). However, the steep increase in fertility at older ages and the rise in twinning rates are related to the introduction and diffusion of ART (Billari, Kohler, Andersson, and Lundström 2007; Pison, Monden, and Smits 2014). In short, we see new reproductive technologies as an enabling factor for higher fertility, especially at older ages.

Contraception is not the only kind of technology that may affect fertility. Here we focus on digital technologies, and in particular on the availability of the Internet, including stable connections through broadband. Given the recent diffusion of the Internet, the fact that research on the topic is extremely limited does not come as a surprise. There is however a literature on the social implications of the Internet, which can be used when reflecting upon the potential impact on fertility. In an early sociological paper on the social implications of the internet, DiMaggio and coauthors (2001) have argued for the need to link micro-level research with analyses on institutional and political-economic factors that constrain a specific behavior. Hughes and Hans present an early discussion on the impact of the internet on family life (2001). Gershuny (2003) discusses a number of ways through which technological change (and the Internet in particular) might affect time use patterns. These include: the productivity of work in the production of basic commodities thus freeing time for

other activities (this is clear in the case of household appliances for instance (de V. Cavalcanti and Tavares 2008; Greenwood, Seshadri, and Yorukoglu 2005), but could extend to the Internet); an increased productivity in the workplace, that may allow to work shorter hours; a potential substitution between paid and unpaid work.

In order to understand the mechanisms through which the Internet can play a role in fertility, it is therefore useful to focus on the constraints towards achieving fertility goals that can become weaker with Internet access. We can mention three types of such constraints: the partnership market; information and social interaction; the possibility to combine work and family.

Partnership market. We focus on the role of the Internet is related to the possibility to meet a partner who can become a co-parent, rather than a dating partner for the short term. For what concerns marriage, the internet has been described as the new "social intermediary" in the search for mates by Rosenfeld and Thomas (2012). It has been argued that online interaction allows to gather more information on prospective partners and perhaps more stable partnership situations as the outcome of better matches (Cacioppo, Cacioppo, Gonzaga, Ogburn, and VanderWeele 2013; Hitsch, Hortaçsu, and Ariely 2010). The timing effects might push in different directions. On the one hand, the width of the partnership market might increase and therefore allow a search from a wider pool, which would take longer and imply a postponement of partnership formation. On the other hand, the speed at which information can be collected, and the possibility to make targeted search such as for specific combinations of characteristics of a prospective co-parent, as in the case of online dating (Potârcă and Mills 2015), might imply a quicker transition to a co-parenting partnership. There is no particular reason to believe that gender plays a specific role in this case. However, other aspects of social stratification will play a role, in addition to the mere access to the Internet, as prospective parents from upper socioeconomic strata might have a bigger advantage from interactions that start online.

Information and social interaction. In the literature on fertility choices, the idea of social interaction embeds social learning (implying the provision of information) and social influence (e.g. normative influence through peer pressure) (Aparicio Diaz, Fent, Prskawetz, and Bernardi 2011; Bongaarts and Watkins 1996; Kohler 2001). Traditional media, such as radio and TV, are also sources of information. Access to the Internet might change the information available to individuals who intent to have (or not to have) a child, or their intentions might change as a consequence of accessing information online. For instance, information on contraception and abortion might be available to teenagers who would like to avoid unwanted pregnancies in contexts in which sexual education and/or access to abortion are limited (Reis and Brownstein 2010). The Internet might amplify the information effects that other, older communication technologies, like the TV, have been shown to have (Jensen and Oster 2009; Kearney and Levine 2014; La Ferrara, Chong, and Duryea 2012). Online available information, therefore, would be linked to a postponement of childbearing.

On the contrary, access to the Internet might allow individuals who would like to have a child to gather information on experiences (or ART) that will allow them to have children (Billari, D'Amuri, and Marcucci 2013) or to access information on innovative approaches to rearing children (Russell 2014). If this is the case the Internet would allow to have higher fertility when individuals and couple proactively seek having children. There might be a gender-specific effect especially for women who would want to avoid unwanted pregnancies.

The possibility to combine work and family. It is well-known that, in advanced societies, the cross-country correlation between women's employment and fertility has become positive (Brewster and Rindfuss 2000; OECD 2011). This change is usually linked to institutional, policy and cultural changes that make it easier to combine work and family life for women (Engelhardt, Kögel, and Prskawetz 2004; Esping-Andersen and Billari 2015), and might particularly matter for women past their early adult years (Myrskylä, Billari, and Kohler 2011). The main question here is whether the Internet, and in particular access to stable broadband connections at home, make it easier or more difficult to combine work and family. If work spills over family life (Chesley 2005) so that individuals are "Elsewhere" when they are with their family (Conley 2009), the Internet will have a negative impact on fertility. On the other hand, if the Internet allows to work from home and gain flexibility in one's own time agenda (Baruch 2000; Wajcman 2015; Wajcman, Bittman, and Brown 2009), it would have a positive impact on fertility. Here we could hypothesize that effects are stratified by gender (with women being more affected) and socio-economic strata (with higher strata being more affected)

In the remainder of this paper, after a review of the existing empirical literature, we develop some specific hypothesis on the association between access to the Internet and subsequent fertility. We then conduct analyses on two different datasets, for the US and the UK, that allow to combine information on Internet access with fertility trajectories.

2. Relevant empirical literature (to be completed)

We shortly discuss the relevant empirical literature along the lines discussed earlier.

Partnership market. In a study that exploits the timing of broadband diffusion in the US, Bellou finds that broadband diffusion is positively correlated to marriage rates (Bellou 2015).

Information on contraception, childbearing and childrearing. On the role of internet-based information at least two studies are available. Reis and Brownstein (2010) show, across states and nations, that the volume of internet searches for terms related to abortion is inversely proportional to abortion rates, and directly proportional to the

degree access to abortion is restricted. They interpret this finding as evidence that the Internet is used to seek information on how to access abortion outside of one's own area. Billari, D'Amurri and Marcucci (2013) show that searches on Google for fertility-related terms are able to significantly contribute to forecasting fertility one or two years ahead. This is interpreted as evidence that during the fertility decision-making process, individuals and couple search for information on the internet. Using a longitudinal panel of US counties, Guldi and Herbs (2015) estimate that access to broadband "explains at least thirteen percent of the decline in the teen birth rate between 1999 and 2007".

The possibility to combine work and family. An analysis by Dettling (2013), which exploits cross-state variation in supply-side constraints to broadband access at home shows that broadband access is associated with an increase in the labor supply of married women. The largest increase in labor force participation is seen for college-educated women with children, while there is no effect of broadband on single women's or men's labor supply.

3. Hypotheses

Our general hypothesis is that modern, efficient technologies might facilitate achieving "desirable" life outcomes, such as avoiding unwanted pregnancies in some circumstances, or having a(nother) child in other circumstances. "Desirable" here is seen as in line with individual intentions (i.e. compatible with self-actualization, as in the Second Demographic Transition, or anticipated happiness (Billari 2009)). The formation of these intentions is assumed to take into account the information on the potentially long-term consequences of becoming a parent.

We see access to modern digital technology as facilitating, through a series of channels, the postponement of fertility during teenage years in particular—somehow similar to access to modern and efficient contraception. In contrast, we see access to modern digital technology, as facilitating the achievement of proactive fertility goals later in life—somehow similar to the access to ART. Given the importance of work-family.

Here are our hypotheses.

H1: (postponement) Internet access is negatively associated with fertility at early ages

We hypothesize that social interaction with peers, as well as information available from the Internet is likely to lead to postponing first births and avoiding unwanted pregnancies (Guldi and Herbst 2015). This postponement effect is assumed to prevail

to the counter-effect of the partnership market, i.e. that the Interned might speed up the transition (Bellou 2015).

H2: (recuperation) Internet access is positively associated with fertility at later ages

Once teenage and early adult years are over, the importance of social interaction might shift towards a pro-natal effect. Moreover, as the key factor in the decision to have children becomes the possibility to combine work and family, the Internet would help affording to have a(nother) child.

H3: (gendered effects) The association of the Internet with fertility is stronger for women than it is for men

Information seeking during early years and work-family conflicts are likely to be more significant for women than for me.

H4: (fertility digital divide-education): The association of the Internet with fertility is stronger for higher educated

The role of the Internet in shaping work-family relationship is likely to be more relevant for those who have the opportunity to have a career for which work can be done from home.

H5: (fertility digital divide-employment): The association of the Internet with fertility is stronger for the employed

The role of the Internet in shaping work-family relationship is likely to be more relevant for those who work.

4. Data and methods

We conduct our analyses using two longitudinal datasets for which childbearing can be linked to Internet access during earlier years. These are the National Longitudinal Survey of Youth 1997 for the United States (NLSY97) and the UK Household Longitudinal Study (more often known as "Understanding Society"). These two different data sources (NLSY97 is basically a youth cohort study and Understanding Society a household panel), concerning comparable but different contexts will allow us to cross-validate our findings. However, the different designs of the study will not allow us to directly compare results. In terms of methods, we will conduct descriptive analyses and analyze the determinants fertility in multivariate linear probability models.

NLSY97 (US)

The analysis on the United States has been carried out using the National Longitudinal Survey of Youth 1997. The NLSY97 is an ongoing, nationally representative longitudinal study of 8,984 youths who were 12 to 16 years old in 1997. It started in 1997 and people in the sample are interviewed every year. The most recent wave that is available has been collected in 2011-2012, when surveyed individuals were between 27 and 31 years old. The data set collects very detailed information on young adults school and work histories, on top of standard socio-demographic information. What makes this survey interesting for our analysis is that from Round 7 (2003) onwards people have been asked questions about Internet access and Internet use. More specifically, from 2003 onwards respondents were asked if they had Internet access, and from 2003 to 2008 they were also asked about the place where they accessed the Internet (such as home, friend's home, school, work, library, or Internet cafe). If respondents did not have Internet access, they listed other ways they had used computers (for instance, for completing a survey, using an ATM, voting in an election, typing a document, or playing video games). Since our aim is to study how the diffusion of the Internet is associated with childbearing and the timing of childbearing, our key independent variable is built upon the question *"Which of the following places can you get access to the internet?"*, and we create a dummy that is equal to 1 if the answer to this question is *"Home"*. We are interested in internet access from home given that we want to study how internet is related to family choices – i.e. having a child –, so having access to the Internet in different places like work or school would have the same meaning.

Because we are interested in fertility timing, and how this decision of having a child is connected to Internet access, we look at two different points in time. We focus first on the period 2003-2006, when the respondents are between 19-23 and 22-26, and then on the period from 2007 to 2011, when they are between 23-27 and 27-31 years old. Dividing the analysis into these two time periods allows us to test the hypothesis that access to Internet is negatively associated with fertility in young ages (or during education), and positively associated to fertility at older ages (see H1 and H2 above). So our dependent variable is a dichotomous variable equal to 1 if the respondents had at least one child between 2003 and 2007, and between 2007 and 2011 respectively. We have the year and the month of birth of each child each respondent has ever had, so we can determine in between which waves he/she was born. Since we need information on the precise interview date from 2003 onwards, we exclude from the sample those who haven't been interviewed in one of the rounds from 2003. This leaves us with a sample of 5,729 individuals.

In order to test our third hypothesis – that effects are more marked for women than for men (H3) – we run all the analyses separately for men and women. Moreover, given that we expect that the association between Internet access and fertility is stronger for high-educated individual we distinguish between those who has been enrolled in college at least once from those who never enrolled in college (in the 2003-2007 analysis only, while in the 2007-2011 analysis we introduced college enrollment as a

control variable). Finally, only for the 2007-2011 window, we distinguish between those who are employed from those who are not.

The multivariate regressions include some socio-demographic controls such as age, partnership status, number of already born children, ethnicity, region of residence, and if living in an urban or rural area. We will first present some descriptive statistics and the multivariate analysis.

Understanding Society (UK)

The UK Household Longitudinal Study ("Understanding Society") is a panel study of about 40,000 households. Building on the experience of the British Household Panel Study, the new study started in 2009. Our analyses use Wave 1-Wave 4.

We here focus on respondents aged 18-39 at Wave 1. Because of a different design in the data collection about own children it is not possible to compare childbearing histories of men and women (women are asked thoroughly about pregnancies and their outcome, while men have a more generic question about fathering between waves), and we focus only on women. We exclude the ethnic minority boost, those who were single parents at Wave 1, and those who were pregnant at Wave 1. We only focus on respondents who participated to Waves 1-4 (and therefore use the longitudinal weight provided in Wave 4 for our analyses).

In Understanding Society, respondents were directly asked whether their household was connected to broadband.

Multivariate regression include controls at Wave 1 such as household income (equivalized), whether the household own a house, age of the respondent, employment status, region of the respondent, rural/urban residence.

Results

NLSY 97

Descriptive Findings

We start our analysis by looking at the prevalence of Internet access from home in our sample. Table 1 shows that the proportion of respondents having Internet at home is quite high, and increasing over time, from 61.2% in 2003 to 71.3% in 2008. The prevalence is high but it still allows us to have enough variation in the data and look at its association with fertility outcomes.

Table 1. Access to Internet (US NLSY)

Access to Internet from Home	N	%
2003	3,507	61.2
2004	3,465	60.5
2005	3,589	62.7
2006	3,749	65.4
2007	3,936	68.7
2008	4,084	71.3

N=5,729

At the same time we have enough individuals becoming parents between 2003 and 2007, and between 2007 and 2011. 30.1% of our respondents experience childbearing between 2003 and 2007, when they are on average between 21 and 24 years old. Almost the same proportion – 31.6% – becomes a mother or a father between 2007 and 2011, being on average between 25 and 29 years old.

Table 2. Fertility between 2003 and 2011 (US NLSY)

Any Child Between…	N	%
2003-2007	**1,724**	**30.1**
1 Child	1,296	22.6
2 Children	387	6.8
3 Children	38	0.7
4 Children	3	0.1
2007-2011	**1,809**	**31.6**
1 Child	1,451	25.3
2 Children	323	5.6
3 Children	31	0.5
4 Children	4	0.1

N=5,729

Looking at these simple proportions we know that we have enough variation in the data to start investigating the relationship between Internet access and childbearing.

We have 52.7% women in our sample, and an heterogeneous ethnic composition with 48.5% individuals who define themselves as white, 27.2% as Black, and 20.6% as Hispanic. Respondents' parents[1] have been on average enrolled in tertiary education, and have 13.2 years of education. When we look at some important socioeconomic and demographic characteristics over the two time periods considered in the analysis we can see that 37.7% of the sample is still enrolled in school in 2003, while this percentage drops to 16.5% in 2007. So our distinction over time allows us to pick up not only the age effect, but partially also the difference between being still in school and being not enrolled.

Table 3. Descriptive Statistics (US NLSY)

% Female	52.7
% White	48.5
% Black	27.2
% Hispanic	20.6
Parents' Education, Avg. (years)	13.2
2003-2007	
Mean Age 2003	20.9
Mean Age 2006	23.9
% in School 2003	37.7
% Some College before 2003	56.3
% Employed 2003	55.0
% Had Children before 2003	24.7
% Married/Cohabiting	24.3
% in North East Region	16.2
% in North Central Region	23.1
% in South Region	38.9
% in West Region	21.9
% Urban	79.6
2007-2011	
Mean Age 2007	24.8
Mean Age 2011	28.7
% in School 2007	16.5
% Some College before 2007	61.3
% Employed 2007	73.2
% Had Children before 2007	42.0
% Married/Cohabiting	44.1
% in North East Region	15.3
% in North Central Region	22.1
% in South Region	40.1
% in West Region	22.6
% Urban	80.9
N=5,729	

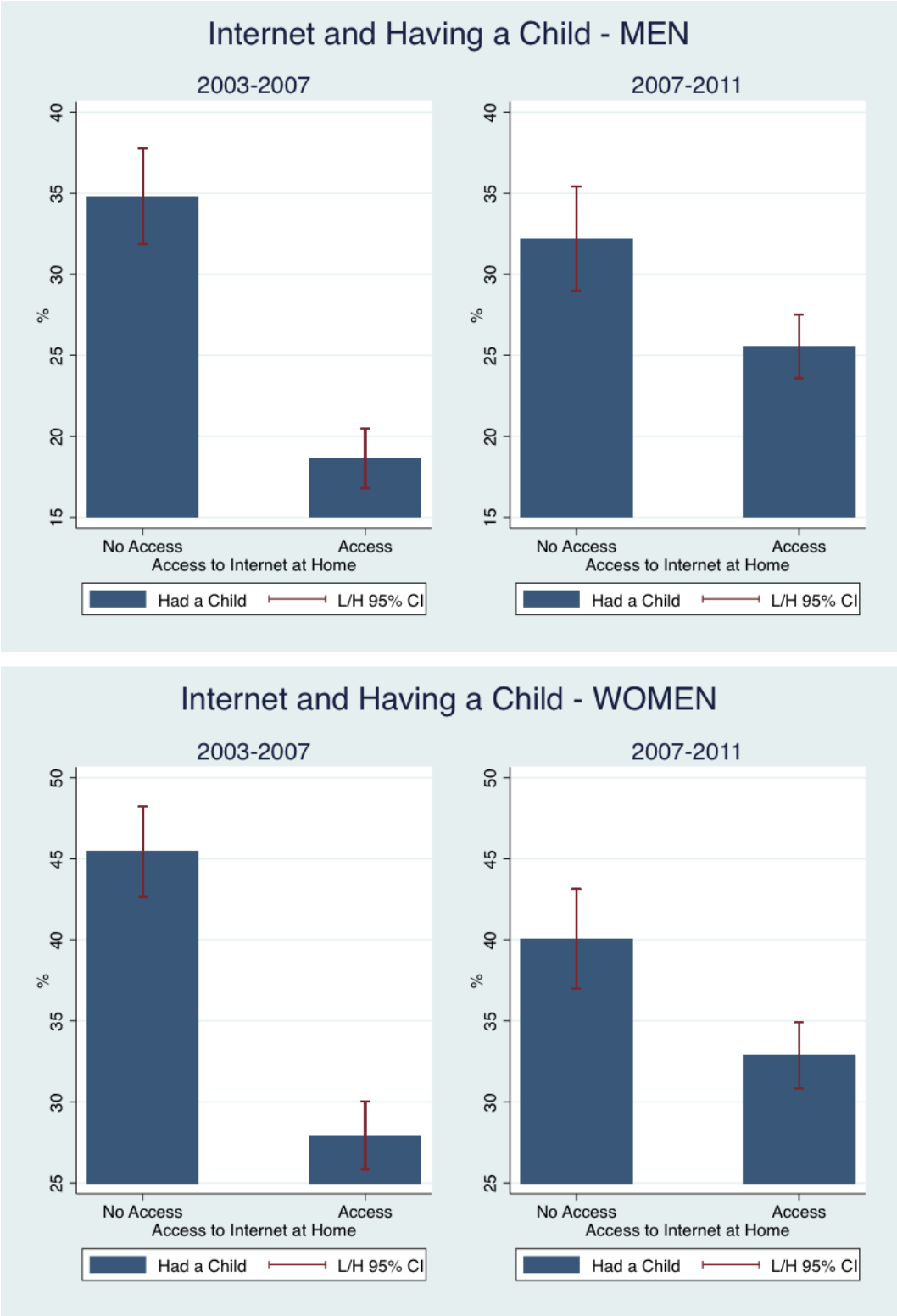
[1] We picked the highest education attainment between the mother and the father.

In the same way we see the proportion of people ever enrolled in college increasing from 56.3% to 61.3%, and the proportion of those employed full-time[2] rising by 18.2% between 2003 and 2007. In Round 7 (2003) we have 24.3% of the sample in a co-residential union, i.e. in a marriage or cohabitation. And almost a quarter of the sample has had children before 2003. As expected these proportions are much higher in Round 11 (2007), with 44.1% being in a partnership and 42% being already a parent. In both time periods there is a quite similar distribution of individuals residing in the four macro-regions[3] identified by the census, with the majority living in the South, and around 80% living in an urban area.

Figure 1 shows the average proportion of men (top graph) and women (bottom graph) who have had a child in 2003-2007 and 2007-2011, based on having access to the Internet at home. Among men in 2003-2007, it is very clear how the likelihood of having a child is much higher for those who did not have access to the Internet compared to those who had access. This difference is still present but much smaller in 2007-2011. This finding seems to show that there is a negative association between Internet access at home and childbearing, in particular for younger ages. This is in line with our first hypothesis (postponement), but doesn't seem to confirm the second hypothesis (recuperation).
Among women we observe exactly the same trend, even though the average proportion becoming a mother is higher than for men, both with and without Internet access at home.

[2] Measured as being employed for 40 weeks or more in 2003 and 2007, respectively.
[3] North East States: Northeast: CT, ME, MA, NH, NJ, NY, PA, RI, VT; North Central States: IL, IN, IA, KS, MI, MN, MO, NE, OH, ND, SD, WI; South States: AL, AR, DE, DC, FL, GA, KY, LA, MD, MS, NC, OK, SC, TN, TX, VA, WV; West: AK, AZ, CA, CO, HI, ID, MT, NV, NM, OR, UT, WA, WY.

Figure 1. Internet and Childbearing (US NLSY)



Multivariate Analyses

In order to verify these results taking into account other possible factors influencing the relationship between Internet access and fertility, we run a set of linear probability models. Tables 4a and 4b report the results for the period 2003-2007, for men and women respectively. Model (1) includes only exogenous variables (i.e. age at interview in 2003 and ethnicity) and the variable indicating access to the Internet. Model (2) adds some socioeconomic and demographic controls. Models (3) and (4) replicate the specification in (2) distinguishing between those who have never been enrolled in college by 2003 and those who have.

As we can see from Table 4a, and confirming results of Figure 1, there is a negative association between access to the Internet and the probability of having a child. This is also true when we take into account parents' education, number of previous kids, partnership status and region of residence. Once we stratify by college enrollment we see that the level of significance drops to 5%, and the relationship is stronger for those who have never been enrolled in college.

Table 4a. Linear Probability Models, 2003-2007 – MEN (US NLSY)

Y = Had a child between 2003 and 2007	(1)	(2)	(3) Never in College	(4) Ever in College
Access to Internet at Home	-0.132***	-0.086***	-0.070**	-0.059**
	(0.017)	(0.018)	(0.028)	(0.024)
Ethnicity (Ref: White)				
Black	0.108***	0.100***	0.069**	0.126***
	(0.020)	(0.022)	(0.034)	(0.027)
Hispanic	0.098***	0.047*	0.067*	0.038
	(0.022)	(0.025)	(0.041)	(0.029)
Other	-0.053	-0.015	0.038	-0.03
	(0.042)	(0.044)	(0.092)	(0.045)
# Children before 2003		0.071***	0.061***	0.100***
		(0.016)	(0.021)	(0.028)
Parents' Edu (yrs.)		-0.012***	-0.013**	-0.004
		(0.003)	(0.006)	(0.004)
Married/Cohabiting		0.241***	0.201***	0.272***
		(0.023)	(0.035)	(0.031)
Constant	0.396***	0.471***	0.522***	0.213**
	(0.068)	(0.081)	(0.127)	(0.106)
Controls	Age	YES	YES	YES
N	2711	2498	1177	1321

* p<0.10, ** p<0.05, *** p<0.01

Controls: Age at Interview 2003, Region, Urban Area

Among women we find very similar results, with the exception that the relationship between access to the Internet and childbearing is not significantly different from zero when we look only at women who have never been enrolled in college.

Table 4b. Linear Probability Models, 2003-2007 – WOMEN (US NLSY)

Y = Had a child between 2003 and 2007	(1)	(2)	(3) Never in College	(4) Ever in College
Access to Internet at Home	-0.155***	-0.066***	-0.025	-0.051**
	(0.018)	(0.019)	(0.032)	(0.024)
Ethnicity (Ref: White)				
Black	0.081***	0.092***	0.035	0.098***
	(0.021)	(0.023)	(0.040)	(0.027)
Hispanic	0.079***	0.001	-0.045	0.025
	(0.023)	(0.026)	(0.045)	(0.031)
Other	-0.077	-0.073	-0.034	-0.068
	(0.048)	(0.048)	(0.101)	(0.051)
# Children before 2003		0.061***	0.028	0.089***
		(0.012)	(0.017)	(0.020)
Parents' Edu (yrs.)		-0.020***	-0.011*	-0.017***
		(0.003)	(0.006)	(0.004)
Married/Cohabiting		0.218***	0.114***	0.270***
		(0.021)	(0.033)	(0.026)
Constant	0.425***	0.600***	0.589***	0.394***
	(0.068)	(0.082)	(0.135)	(0.106)
Controls	Age	YES	YES	YES
N	3018	2820	1133	1687

* p<0.10, ** p<0.05, *** p<0.01

Controls: Age at Interview 2003, Region, Urban Area

The analysis on the most recent time period 2007-2011 is performed in the same way and reported in Tables 5a and 5b. Models (1) and (2) remain the same. Model (3) introduces the variable related to ever being enrolled in college by 2007 (as a control), while Models (4) and (5) stratify by employment status in 2007.

Looking at men we can see that there is no association between Internet access and fertility as soon as we control for socioeconomic and demographic characteristics. This seems to partially confirm our second hypothesis, showing how the association is not positive but also not negative. Moreover there is no difference between those employed and those not employed full-time.

Among women the results are slightly different in the sense that Internet access is negatively associated with the probability of having a child in the first three specifications. However, the relationship stops to be significant once we divide the sample by employment status.

Table 5a. Linear Probability Models, 2007-2011 – MEN (US NLSY)

Y = Had a child between 2007 and 2011	(1)	(2)	(3)	(4) Not Employed	(5) Employed
Access to Internet at Home	-0.055***	-0.022	-0.021	-0.036	-0.018
	(0.019)	(0.020)	(0.020)	(0.039)	(0.023)
Ethnicity (Ref: White)					
Black	0.041*	0.085***	0.084***	0.094**	0.078***
	(0.021)	(0.022)	(0.023)	(0.042)	(0.027)
Hispanic	0.023	-0.01	-0.01	-0.06	0
	(0.023)	(0.026)	(0.026)	(0.060)	(0.028)
Other	-0.159***	-0.120***	-0.120***	-0.096	-0.131**
	(0.044)	(0.045)	(0.045)	(0.098)	(0.051)
# Children before 2007		0.014	0.013	0.016	0.012
		(0.010)	(0.011)	(0.020)	(0.013)
Parents' Edu (yrs.)		-0.009***	-0.009***	-0.016**	-0.008**
		(0.003)	(0.003)	(0.007)	(0.004)
Married/Cohabiting		0.268***	0.268***	0.269***	0.266***
		(0.019)	(0.019)	(0.045)	(0.021)
Ever Enrolled in College			-0.008	-0.03	-0.002
			(0.020)	(0.042)	(0.022)
Constant	0.243***	0.267***	0.265***	0.297**	0.320***
	(0.056)	(0.072)	(0.073)	(0.130)	(0.092)
Controls	Age	YES	YES	YES	YES
N	2711	2497	2497	561	1936

* p<0.10, ** p<0.05, *** p<0.01

Controls: Age at Interview 2007, Region, Urban Area

So the effects are more marked for women than for men, as suggested by our third hypothesis, but this is true until with take into account employment status. Hence, if employment plays a role, it doesn't seem to determine a difference in the association of Internet with fertility between women employed full-time and not employed full-time.

Table 5b. Linear Probability Models, 2007-2011 – WOMEN (US NLSY)

Y = Had a child between 2007 and 2011	(1)	(2)	(3)	(4) Not Employed	(5) Employed
Access to Internet at Home	-0.072***	-0.044**	-0.048**	-0.048	-0.041
	(0.019)	(0.020)	(0.021)	(0.038)	(0.026)
Ethnicity (Ref: White)					
Black	-0.005	0.052**	0.051**	0.032	0.054*
	(0.021)	(0.024)	(0.024)	(0.042)	(0.029)
Hispanic	0.042*	0.025	0.025	-0.057	0.058*
	(0.023)	(0.027)	(0.027)	(0.052)	(0.032)
Other	-0.056	-0.03	-0.031	0	-0.054
	(0.048)	(0.050)	(0.050)	(0.089)	(0.061)
# Children before 2007		0.014	0.016*	0.011	0.017
		(0.009)	(0.009)	(0.015)	(0.012)
Parents' Edu (yrs.)		-0.006*	-0.006*	-0.014**	-0.004
		(0.003)	(0.003)	(0.007)	(0.004)
Married/Cohabiting		0.183***	0.183***	0.169***	0.184***
		(0.019)	(0.019)	(0.036)	(0.023)
Ever Enrolled in College			0.017	0.01	0.026
			(0.021)	(0.038)	(0.026)
Constant	0.431***	0.425***	0.424***	0.549***	0.383***
	(0.053)	(0.075)	(0.075)	(0.135)	(0.090)
Controls	Age	YES	YES	YES	YES
N	3018	2777	2777	842	1935

* p<0.10, ** p<0.05, *** p<0.01

Controls: Age at Interview 2007, Region, Urban Area

Understanding Society

Descriptive Findings

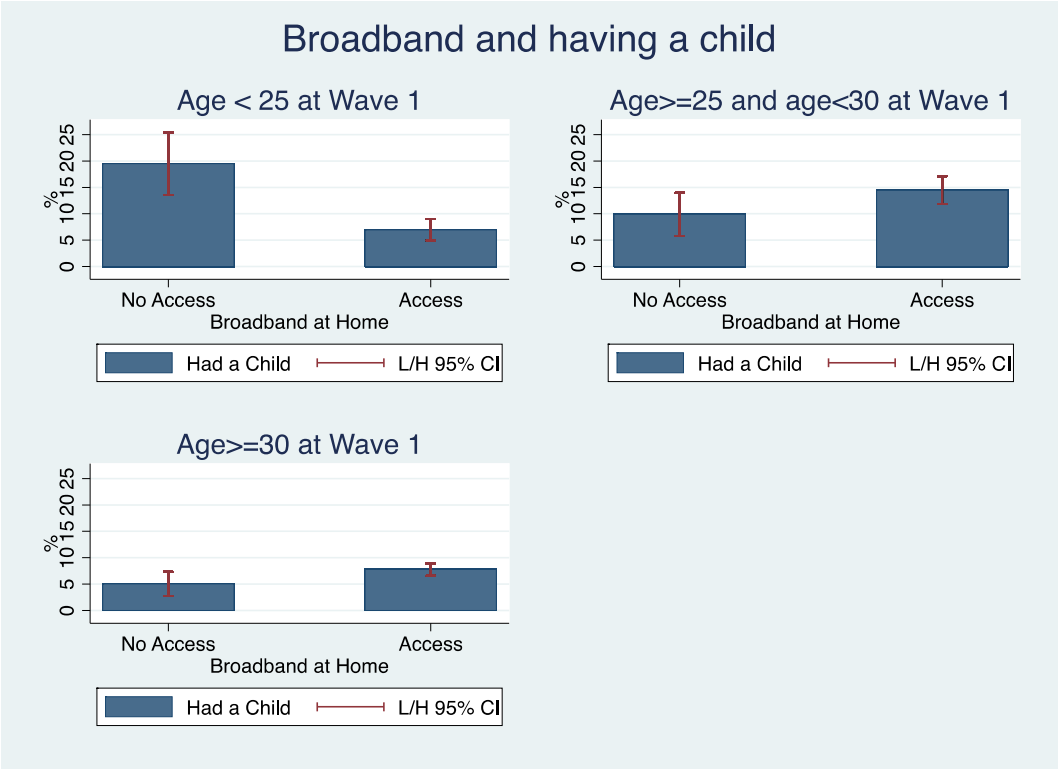
The proportion of respondents (women) with access to a broadband connection in the household at Wave 1 is 81.1% (n=4,705). 9.5% of the respondents had at least one child between Wave 1 and Wave 4. Table 6 contains a set of descriptive statistics.

A first bivariate analysis by age of respondents at Wave 1 (Figure 2) shows that, at a descriptive level, the negative relationship between access to broadband and subsequent fertility, which is visible for respondents aged 18-25 at Wave 1 is reversed at later ages. However, differences are statistically significant between the two groups of broadband access only for the early age group. These descriptive findings are therefore in line with what we found for the US using NLSY (Figure 1).

Table 6. Descriptive Statistics (UK Understanding Society, Women)

% With broadband access at W1	81.1
% Having at least one child (W1-W4)	9.5
Age W1	29.4
(std. dev.)	6.2
Household income (equivalized) W1	1486.61
(std. dev.)	918.13
% Owning a house W1	54.3
% Owning a house with value greater than £ 250K W1	11.6
Number of previous children (biological) W1	1.03
(std. dev.)	1.13
% Full-time student W1	8.3
% Employed W1	67.1
% Higher educated W1	41.5
% Married/Cohabiting W1	60.2

Figure 2. Internet and Childbearing (UK Understanding Society, Women)



Multivariate Analyses

(Comment to be added)

Table 7a. Linear Probability Models, women aged up to 25 at Wave 1 (2009) (UK Understanding Society, Women)

Y = Had a child between 2009 and 2013	(1)	(2)	(3) Lower educated	(4) Higher educated
Access to Broadband at Home	-0.123***	-0.075***	-0.069**	-0.084
	(0.025)	(0.028)	(0.034)	(0.058)
# Children at Wave 1		0.098***	0.092***	0.176***
		(0.020)	(0.024)	(0.054)
Married/cohabiting		0.055**	0.017	0.127***
		(0.027)	(0.035)	(0.044)
Controls	Age	YES	YES	YES
N	782	750	549	201

* p<0.10, ** p<0.05, *** p<0.01
Controls: Age at Wave 1 (and age squared), Equivalized household income, Own house, House of high value, Region, Rural/urban, full-time student.

Table 7b. Linear Probability Models, women aged 25-30 at Wave 1 (2009) (UK Understanding Society, Women)

Y = Had a child between 2009 and 2013	(1)	(2)	(3) Lower educated	(4) Higher educated
Access to Broadband at Home	0.048*	0.009	0.053	-0.033
	(0.027)	(0.029)	(0.035)	(0.055)
# Children at Wave 1		0.018	0.022	0.018
		(0.012)	(0.015)	(0.025)
Married/cohabiting		0.079***	-0.008	0.147***
		(0.025)	(0.033)	(0.040)
Controls	Age	YES	YES	YES
N	897	876	457	419

* p<0.10, ** p<0.05, *** p<0.01
Controls: Age at Wave 1 (and age squared), Equivalized household income, Own house, House of high value, Region, Rural/urban, full-time student.

Table 7c. Linear Probability Models, women aged 30-39 at Wave 1 (2009) (UK Understanding Society, Women)

Y = Had a child between 2009 and 2013	(1)	(2)	(3) Lower educated	(4) Higher educated
Access to Broadband at Home	0.036**	0.036**	0.038**	0.036
	(0.015)	(0.016)	(0.018)	(0.029)
# Children at Wave 1		-0.014***	-0.004	-0.034***
		(0.005)	(0.006)	(0.009)
Married/cohabiting		0.051***	0.025	0.095***
		(0.013)	(0.017)	(0.021)

Controls	Age	YES	YES	YES
N	2386	2315	1272	1043

* p<0.10, ** p<0.05, *** p<0.01
Controls: Age at Wave 1 (and age squared), Equivalized household income, Own house, House of high value, Region, Rural/urban, full-time student.

Conclusion and further plans

Conclusions, discussions and caveats have to be elaborated. The usual general caveat is that our results deal with association, and different designs should be used to derive causal effects.

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