UNIVERSITY of York

Discussion Papers in Economics

No. 19/15

The (non) impact of education on marital dissolution

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Abstract

Despite the relevant role attributed to education on marital outcomes, literature does not show a generalized consensus regarding a positive or negative effect from education on marital decisions. In this paper I investigate the impact of education on marriage dissolution exploiting a change in the length of compulsory education in Mexico in 1993 as an instrument for education. The federal government increased compulsory education from completion of primary school, sixth grade, to completion of secondary school, ninth grade, at a national level. In the first part of the analysis, the probit models reveal that education is significant and negatively related to the probability of marital breakdown. An additional year of education is associated with a decrease between 0.6 and 0.9 percentage points in the probability of marital disruption for the 2002-2012 period. However, the results using the instrumental variables methodology indicate that an additional year of schooling has no effect on the probability of marriage dissolution. This finding demonstrates that the relationship between education and divorce is not causal and suggests that although higher levels of education are an undeniable trait observed in non-broken marriages, it is not education by itself one of the mechanisms leading to better marriage outcomes.

Keywords: Marriage; Marital Dissolution; Education; Instrumental Variables; Mexico.

JEL Classification: J12; I21; C26

Acknowledgments: I gratefully acknowledge Karen Mumford, Thomas Cornelissen, Emma Tominey and participants at various seminars, for helpful comments; as well as the financial support provided by the Mexican Council of Science and Technology (CONACYT), award number 409072.

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1 Introduction

Significant research has been carried out to determine the effect of different factors that influence divorce decisions. Evidence suggests that female labour force participation, the family structure, and the costs of divorce, amongst others, have an impact on marital dissolution (Chiappori et al. 2009; Freiden 1974; Dahl and Moretti 2008). Education has traditionally been identified as one of the main traits that influence marriages. The accumulated level of schooling that each partner brings into the marriage is an important predictor of marriage stability. A higher level of schooling for either the wife or the husband stabilizes the marriage, as does complementarity in the schooling levels of the two partners (Weiss and Willis 1997). Education is also seen as an insurance against a bad marriage. The disparities in earning power and education across genders have contributed to create a vulnerable economic position for married women, and women in bad marriages are typically faced with suffering one of two fates: either divorce and struggle as low-income single mothers, or remain trapped in the marriage. In this sense education provides a route to emancipation for women (Guvenen and Rendall 2015). However, literature does not show a generalized consensus regarding a positive or negative effect from education on marital decisions. Marriages between highly educated individuals have greater gains because of the spouses' high levels of market and nonmarket skills. On the contrary, they have lower gains because they typically involve less specialization between spouses, since higher educated individuals participate more in the labour force. Consequently, there is no clear theoretical prediction about the net effect of schooling level on the gains from marriage (Becker et al. 1977).

It has been argued that higher educated individuals are better equipped to deal with the costs of divorce, since it can be easier for them to understand and handle the legal process. This contributes to them feeling less risk averse to take the divorce decision and therefore to be more prone to file for divorce (Hoem and Hoem 1992). In addition, moral objections against divorce tend to lessen for individuals with higher levels of education and there is an increased confidence that they can set up a new and independent home (Kalmijn and Poortman 2006).

In contrast, higher-educated men have more liberal views on women's work and are generally more willing to participate in child rearing. This makes them more attractive to higher educated women and leads to more satisfaction in their marriages, lowering the

risk of divorce (Kalmijn 2003). In support of this approach, education may increase the benefits of marriage because well-educated couples can interact better and build up stronger relationships, improving the quality of their marriages (Amato 1996).

Despite the relevant role of education on marriage outcomes, there are relatively few empirical studies focused on this relationship. Initially for the United States an ambiguous effect between education and marital dissolution is found (Becker et al. 1977). Later on, the influence of various socioeconomic and demographic factors on the probability of marital disruption, including education, is estimated for young black and white women aged 14 to 24 who were married at any point between 1968 and 1973. For both groups, the negative association between education and marital disruption probabilities is highly significant (Mott and Moore 1979). More recently, the trends in marriage dissolution rates by educational level for American women during 1975 to 1994 have been measured. The results indicate that marital dissolution rates fell among women with a 4-year college degree or more, but remained high among women with less than a 4-year college degree (Martin 2006). Expanding the research to analyse not only the United States, but also 16 additional countries, findings for Austria, Belgium and Lithuania support the conclusion that women with higher education face a lower risk of divorce. However, the data for France, Greece, Italy, Poland, and Spain, indicates the opposite, with a positive educational gradient of divorce. For the rest of the countries, Estonia, Finland, West-Germany, Hungary, Latvia, Sweden, Switzerland and Norway, no relationship between education and divorce is found (Harkonen and Dronkers 2006). For the United Kingdom, Berrington and Diamond (1999) investigate the hypothesis that there is a positive association between education and marital stability, but that this relationship is reduced once early marital factors such as the age at marriage and childbearing status are controlled for. The results suggest that individuals with degree-level qualifications are less likely to experience marital separation than those with lower levels of education. These educational effects are reduced when age at marriage is entered into the model and tend to increase once premarital cohabitation and childbearing status are included. Hewitt, Baxter and Western (2005) analyse the social factors associated with marital breakdown in Australia. The authors find that higher education reduces the probability of divorce for men. In contrast, women with a bachelor's degree or higher qualifications face a higher probability of marriage breakdown than women in the lowest educational levels. Therefore, the husband's education increases the stability of the marriage, while higher levels of education allow women to leave an unsatisfactory marriage.

There is clearly conflicting evidence about the effect of education on marital stability. Some literature argues a positive relationship while other claims a negative impact. However, none of these studies demonstrate a causal effect, and the impact of education on marital dissolution is still an unresolved empirical question worthy to address in this study. To accomplish this target, the analysis is conducted in two parts. First, different probit model specifications are estimated to examine the impact of education, and other divorce determinants, on the likelihood of marital dissolution in Mexico. Later, to identify not only the impact of education on marital disruption but its causal effect, the use of an instrumental variable for education is incorporated into the analysis due to the potential omitted-variable bias in the model. I believe this study is the first to formally address the causality literature within this context.

The length of compulsory education was raised in Mexico in 1993. The federal government increased compulsory education from completion of primary school, sixth grade, to completion of secondary school, ninth grade[1], at a national level. This modification in 1993 is an exceptional opportunity to create an instrument for education in Mexico, exploiting this change in the law as an exogenous variation in the number of years of schooling.

In the seminal work of Angrist and Krueger (1991), compulsory education laws are presented for the first time as a natural experiment. Although the quarter of birth is the instrument used for education, and not the compulsory school attendance per se, the authors provided the basis for further research on this subject. Changes in compulsory schooling laws as an instrument for education have been used to study the economic returns to schooling (Harmon and Walker 1995), to estimate the effect of education on participation in criminal activity (Lochner and Moretti 2004), to determine whether education has a causal effect on mortality (Lleras-Muney 2005), to analyse the quantity of education on the distribution of earnings (Brunello et al. 2009), amongst others. Yet, we still know nothing about the true impact of education on marriage dissolution. This paper fills this gap.

The results obtained from the probit specifications indicate that an additional year of education reduces the probability of marital breakdown between 0.6 and 0.9 percentage points. However, when determining its causal effect, although still negative in sign, the estimates indicate that education does not have a statistically significant effect on the

[1] In Mexico children enter primary school at age six and typically finish secondary education around age 14 or 15.

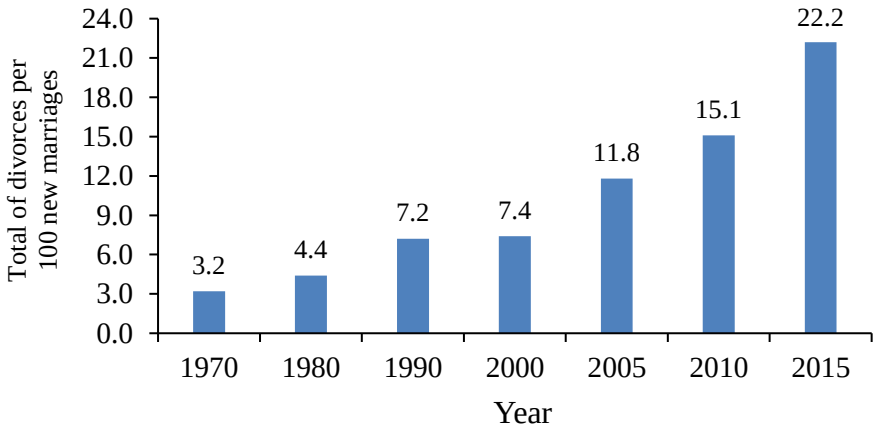
probability of marital dissolution. This finding demonstrates that the effect found between education and divorce through the probit estimations is not causal and suggests that although higher levels of education are an undeniable trait observed in non-broken marriages, it is not education by itself one of the mechanisms leading to better marriage outcomes.

The paper is organized as follows: Institutional details of divorce in Mexico are described in Section 2. Section 3 presents the data. In Section 4 the estimation strategy is discussed, followed in Section 5 and Section 6 by the empirical findings. Section 7 concludes.

2 Institutional details of divorce in Mexico

Over the last forty-five years, and especially during the past two decades, the number of divorces relative to the number of new marriages per year has increased substantially in Mexico (see Figure 1). According to data from the National Institute of Statistics and Geography (INEGI), in 1970 for every 100 new marriages there were three divorces. By 1990 and 2000 this rate rose to seven, and in 2015 it reached 22 per 100 new marriages.

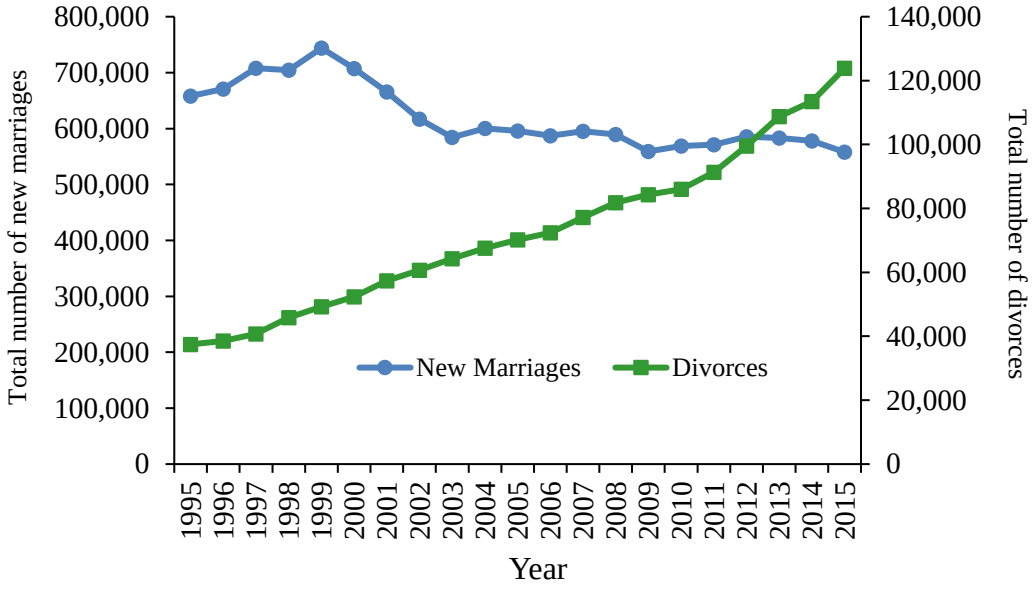
Figure 1 Divorces per 100 new marriages in Mexico



Source: National Institute of Statistics and Geography (INEGI).

These changes are the combination of less couples getting married and more couples getting divorced every year (see Figure 2). During the period from 1995 to 2015, the average rate of growth is -0.7% for the total number of new marriages, and 6.2% for the total number of divorces.

Figure 1 Evolution of new marriages and divorces in Mexico

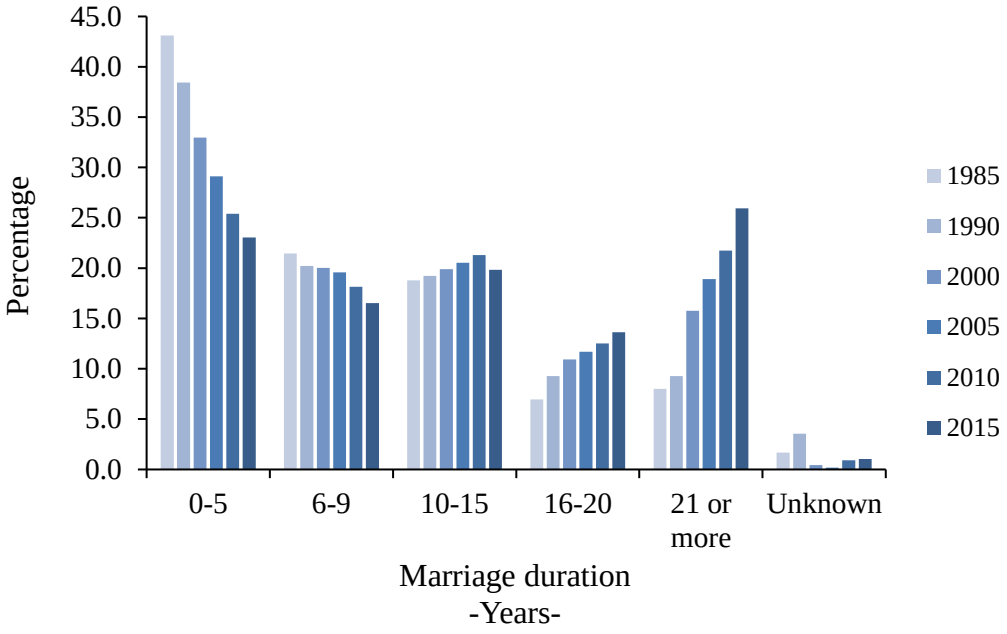


Source: National Institute of Statistics and Geography (INEGI).

Despite these changes in the marital patterns in Mexico and the important consequences of divorce on individuals and societies, this topic has not yet become relevant for policy makers or researchers in the country, and there is a lack of formal economic studies exploring the relationship between socio-economic factors and marriage dissolution.

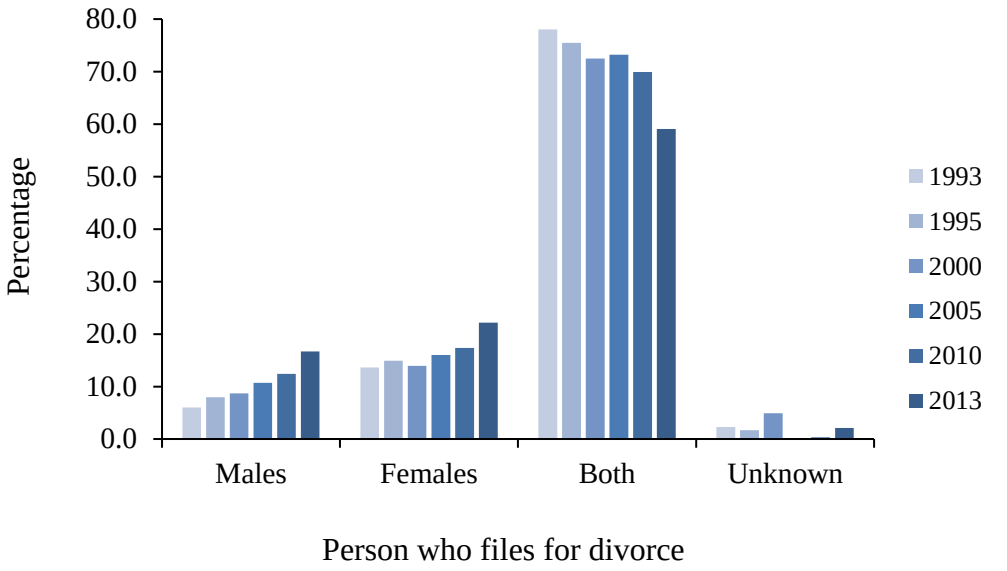
An important modification in marital patterns is presented in Figure 3. In 1985, 43% of the divorcing couples had a marriage that lasted no more than 5 years, while only 8% of the couples that got divorced had 21 or more years married. By 2015, these percentages were 23% and 25%, respectively. This means that even though in general terms the length of the marriage is an important factor that brings stability to the union, recently, couples are getting divorced regardless of the time they have spent together. In addition, in 1993, 78% of the divorces were filed by the couple, but ten years later, in 2013, only 59% of the divorces remained in this category (see Figure 4).

Figure 2 Divorces per year by marriage duration



Source: National Institute of Statistics and Geography (INEGI).

Figure 3 Divorces per year by person who files for divorce

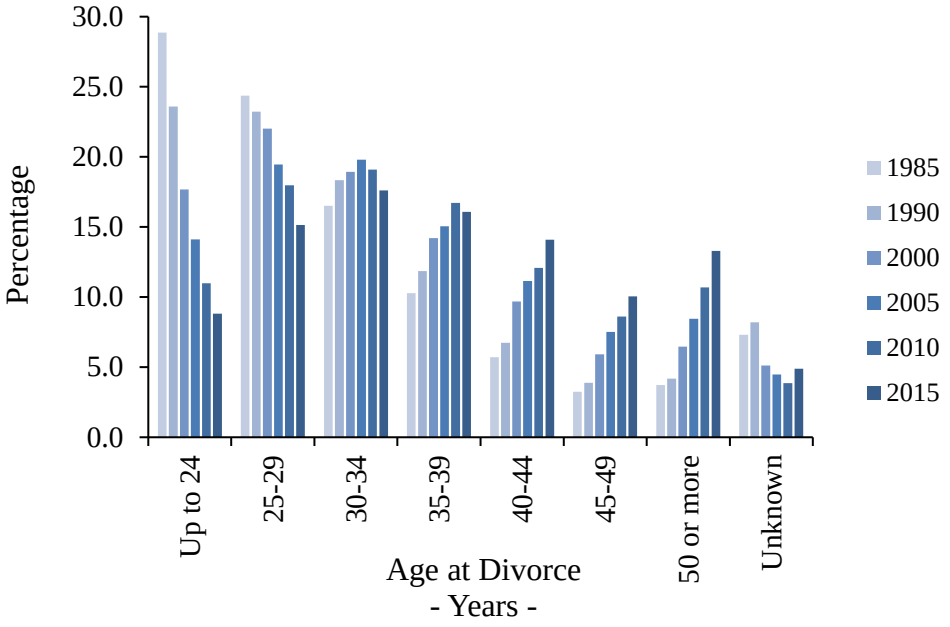


Source: National Institute of Statistics and Geography (INEGI).

Figure 5 and Figure 6 complement the above information showing that for both, females and males, the age at divorce presents a similar pattern, with a decrease over time in the percentage of the younger group of people getting divorced and an increase in the

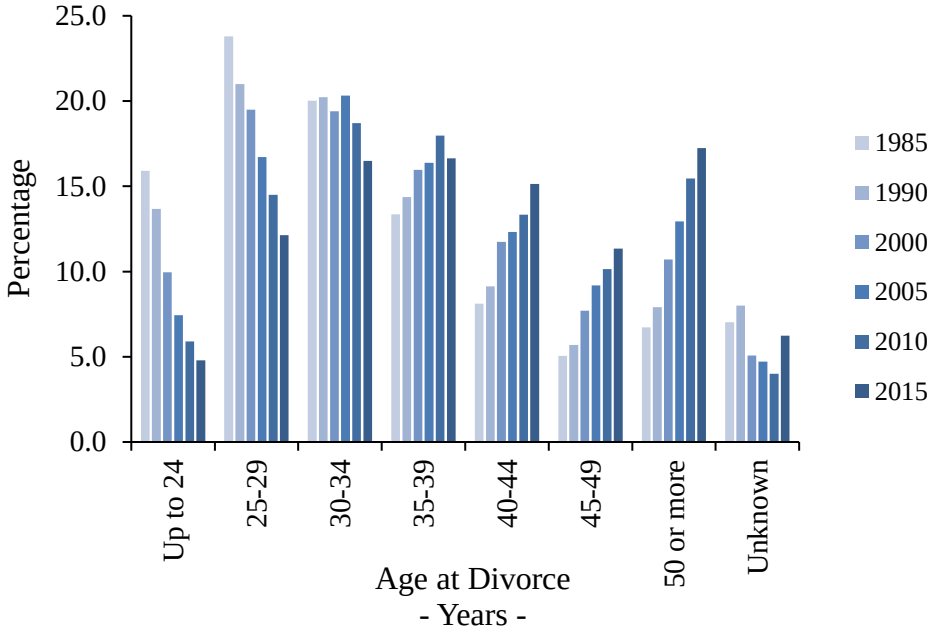
percentage of the older group of people doing so. It should be highlighted that despite these changes, more than 50% of the people that got divorced in 2015 were still under 40 years of age.

Figure 4 Divorces per year by age at divorce -Females-



Source: National Institute of Statistics and Geography (INEGI).

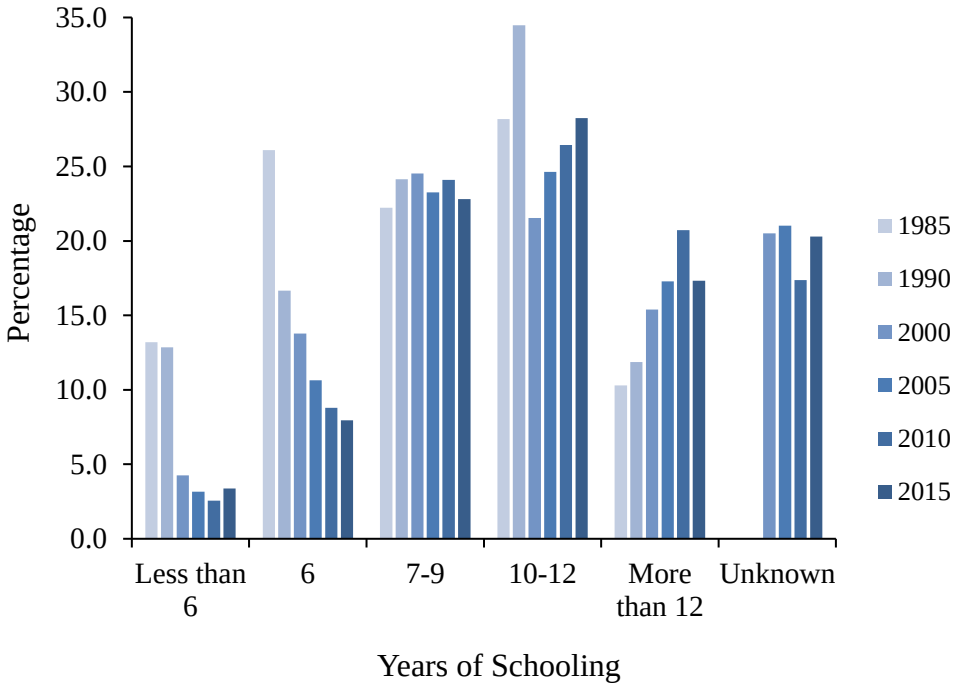
Figure 5 Divorces per year by age at divorce -Males-



Source: National Institute of Statistics and Geography (INEGI).

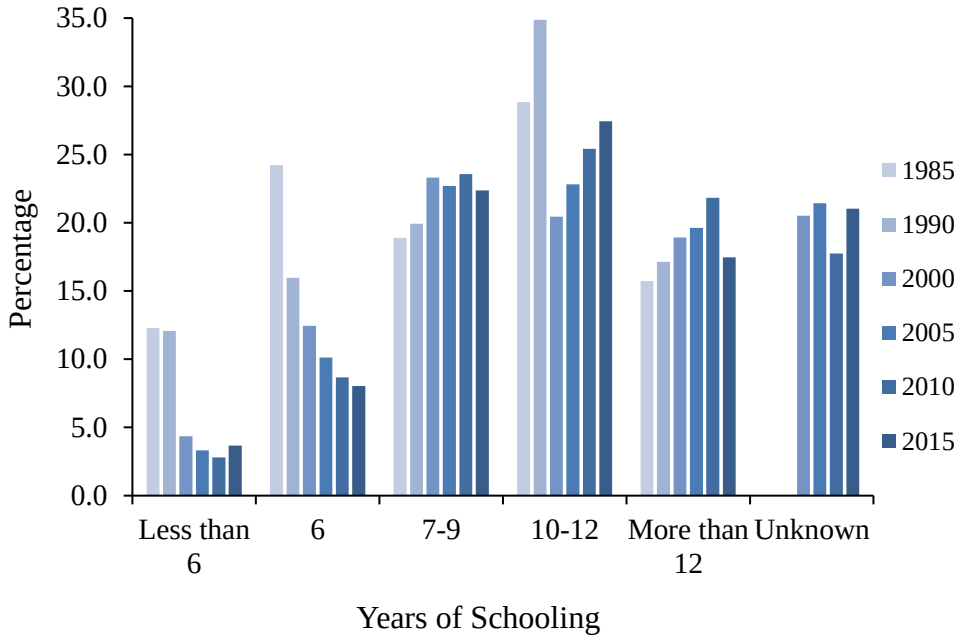
Finally, the percentage of females with six or less years of education getting divorced declined almost 28 percentage points between 1985 and 2015 (see Figure 7). The corresponding decline for males was 24 percentage points (see Figure 8). In contrast, the percentage of females getting divorce with more than 12 years of education was 10% in 1985 and 17% twenty years later in 2015. Comparing the percentage for males in this same category, the incremental shift was from 15% to 17%. The cohorts with secondary education (7-9 years of schooling) for females and males, have behaved similarly during the 30 year period, fluctuating around 22% of people divorced. But the most noticeable aspect to highlight is that around 30% of the people divorced in 1985 and in 2015 were in the 10-12 years of schooling cohort. As a consequence, approximately 70% of the total population that has experience divorce in the past 30 years have attended as a maximum only 12 years of schooling.

Figure 6 Divorces per year by years of schooling -Females-



Source: National Institute of Statistics and Geography (INEGI).

Figure 7 Divorces per year by years of schooling -Males-



Source: National Institute of Statistics and Geography (INEGI).

3 Data

The Mexican Family Life Survey (MxFLS) is the first longitudinal, multi-thematic survey representative of the Mexican population at national, urban, rural and regional levels. The MxFLS collects information on a wide range of socioeconomic and demographic indicators at the individual, household, and community level, providing retrospective information on education and marriage, amongst others, for each one of the individuals that comprise the sample. There have been three rounds: 2002, 2005-2006 and 2009-2012, and the data for this 10-year period is public[2].

A common problem that researchers face in Mexico is the lack from suitable data. The possibility to conduct research using the information from the Mexican Family Life Survey is a unique opportunity to understand in more detail the structure of the families in the country, and especially since the MxFLS third round, according to the original design of the MxFLS survey, will probably be the last one collected.

[2] www.ennvih-mxfls.org.

The dependent variable in the analysis is marital status (Ds), defined as 1 if the person has ever been divorced or separated from marriage[3], or 0 if is currently married with no previous divorce or separation history. The main independent variable, education, is a measure of the number of years of schooling (Ed). This is the standard approach followed in most of the relevant literature, and for this case it has been computed using the available information on the latest level of schooling reached by the individual, the latest grade concluded, and if the person obtained the certificate of completion for some levels of education (high school, undergraduate and postgraduate).

Given that the MxFLS is a household survey, if all the observations were included in the analysis, then a double count of married individuals from the same household would be present in the study. In order to define an appropriate strategy to identify the impact that education has on the probability of marital dissolution and to deal with a potential distortion generated if duplicated observations for a household were considered when keeping the information for the husband and also for the wife, the strategy to follow is to use the record of the individual in the household with the highest level of education. Then if the wife has 8 years of education, but the husband has 9 years, the information of the latter is used.

A typical approach is to conduct the analysis separately for women and men. However, due to the sample size, the *highest educated* option is considered the most suitable path to follow. Although this is the main strategy, robustness checks are also provided using the average level of education for married couples, and the gender strategy, splitting the dataset between women and men. The purpose is to compare how different the results are when following these other approaches and to verify if the main findings are still valid.

3.1 Summary statistics

Descriptive statistics on the variables used in the analyses are presented in Table 1. Slightly more than half of the sample consists of females (54%) representing 53% of the married subsample and 64% of the divorced subsample. 55% of the individuals live in urban areas, and not surprisingly, less than 19% belong to an ethnic group and only 51%

[3] The MxFLS allows to distinguish from those separated from marriage and those separated from cohabitation. Typically, studies consider separated individuals as part of their divorced subsample (Becker at el. 1977; Marinescu 2015), therefore, for this study divorced and separated persons are treated as part of the same group.

are employed (which is consistent with most of the females not reporting earnings as will be shown below). In addition, 50% of the married subsample consists of people with more than 20 years of marriage, and people with 5 or less years of marriage duration represent the highest share in the divorced subsample (37%). Around 17% of the individuals have been affected by the reform, and the birth cohort of people born between 1929 and 1948 has the lowest representation in the sample (19%)[4]. Finally, as it can be observed, 8% of the sample are divorced individuals.

Table 1 Descriptive statistics

Description	**Overall sample %**	**Married %**	**Divorced %**
Females	54.6	53.7	64.6
Urban Strata	55.7	54.5	68.3
Ethnic group	18.8	19.3	13.0
Employed	51.6	51.0	57.8
0-5 years of marriage duration	13.9	11.8	37.3
6-10 years of marriage duration	11.5	11.0	17.7
11-15 years of marriage duration	11.1	10.6	16.2
16-20 years of marriage duration	11.8	11.7	11.8
More than 20 years of marriage duration	51.5	54.7	16.8
Affected by the reform	17.1	17.7	11.3
Birth cohort 1929-1948	19.2	19.2	19.3
Birth cohort 1949-1968	41.0	40.5	46.7
Birth cohort 1969-1988	39.7	40.2	33.8
Total of observations	**12 501**	**11 458 (91.7%)**	**1 043 (8.3%)**

Source: Mexican Family Life Survey (MxFLS).

Table 2 presents the average years of schooling, age at marriage, and number of children, for married and divorced people. Although the differences between these two subsamples are not very large, on average, divorced individuals are higher educated, go into marriage younger and have more children.

[4] People born before 1929 and after 1988 were excluded from the sample due to the scarce number of observations available in each of these years.

Table 2 Descriptive statistics – Mean and standard deviation values

Description	Overall sample		Married		Divorced	
	Mean	Standard deviation	Mean	Standard deviation	Mean	Standard deviation
Years of schooling	6.6	3.6	6.5	3.6	6.8	3.6
Age at marriage	21.7	5.6	21.8	5.6	20.7	5.4
Number of children	3.4	2.6	3.3	2.6	3.7	2.7

Source: Mexican Family Life Survey (MxFLS).

According to the MxFLS fieldwork protocols the individuals who answered the marital history section in the MxFLS first round did not have to re-answer it in the second and third rounds. They only had to update this information if they changed their marital status since the previous round. Therefore, the above statistics are based on information provided in the three rounds[5]. In addition, it is important to mention that the information for an individual has been completed using the data provided during the three rounds. For instance, if an individual reported a divorced marital status in round one but the years of education are not available, then, round two and three are used to obtain the level of education for this person, if reported in any of them.

Two additional factors may be considered important when analyzing marital decisions: earnings and the years of schooling not only of the individual that is under analysis, but also the level of education of the other person involved in the relationship. Table 3 presents the number of observations reporting missing values in the variable earnings for each round[6]. Earnings are not reported for a large proportion of observations[7]. For instance, in the second round, 83% of all married women have missing data, given their low participation in the labour market. Regarding the inclusion in the model of the years of schooling of the other person involved in the relationship, the issue is again related to the levels of non-response. 27% of the divorced population did not provide information about the years of schooling of their ex-husbands or ex-wives. Even though there are techniques to impute omitted values, or indicator variables could be created to control for not reported values, since the percentages of missing information are so high, these options are left out and it has been decided not to consider these two variables in the study rather than to include them.

[5] The final dataset includes all those who turned to divorce or separated in the second and third rounds as well.
[6] The variable considered is the income reported in the last twelve months.
[7] There are two reasons for these missing values, the person does not work or the person is working but did not report the information.

Table 3 Earnings – Missing values

Round	Married				Divorced/Separated			
	Females		Males		Females		Males	
	Total	%	Total	%	Total	%	Total	%
First round	5 041	81.8	1 942	36.6	411	60.9	126	34.1
Second round	5 162	83.8	2 018	38.0	449	66.6	159	43.0
Third round	5 191	84.2	2 562	48.3	479	71.0	196	53.1

Source: Mexican Family Life Survey (MxFLS).

4 Estimation strategy

4.1 Identification strategy

To identify the causal effect of education on marital dissolution the following equations are estimated:

$$Ds_i = \beta_{Ed}Ed_i + \beta_{Am}Am_i + \beta_{Ch}Ch_i + \beta_{Es}Es_i + \beta_{Ar}Ar_i + \beta_{Et}Et_i + \beta_{Md}Md_i + \beta_{Bc}Bc_i + \beta_{Gn}Gn_i + v_i \quad (1)$$

$$Ed_i = \beta_{In}In_i + \beta_{Am}Am_i + \beta_{Ch}Ch_i + \beta_{Es}Es_i + \beta_{Ar}Ar_i + \beta_{Et}Et_i + \beta_{Md}Md_i + \beta_{Bc}Bc_i + \beta_{Gn}Gn_i + \varepsilon_i \quad (2)$$

Where Ds is a binary indicator for marital status (divorced/separated = 1), Ed are the years of schooling, Am is the age at marriage, Ch is the number of children, Es is the employment status (employed = 1), and Ar, Et, Md, Bc, Gn, and In, are indicator variables for area where the individual lives (urban area = 1), ethnic group (belongs to an ethnic group = 1), marriage duration (0-5 years = 1, 6-10 years = 2, 11-15 years = 3, 16-20 years = 4, more than 20 years = 5), birth cohort (born between 1929-1948 = 1, born between 1949-1968 = 2 and born between 1969-1988 = 3), gender (woman = 1), and instrument (affected by the change in the law = 1), respectively. Specification (1) is based on Becker at el. (1977) but it has been adapted for the Mexican case and according to the information available. It also represents the probit model to be estimated in the first part of the analysis. In Becker's model, two regressions were estimated separately, one for

men and another for women. In this case due to sample size, it has been decided to estimate on the pooled sample and to control for gender instead.

Given that the dependent variable in the analysis is dichotomous and the endogenous regressor is continuous, the maximum likelihood estimation using an IV probit model is the preferred approach to follow. This procedure is adopted over the two-stage least squares (2SLS) regression analysis, because maximum likelihood makes stronger specification assumptions, being more efficient than other estimators. In addition, it allows to predict outcomes between 0 and 1, while in 2SLS there is nothing to bind the value to the [0-1] range (Lewbel, Dong and Yang, 2012).

4.2 Validity of the instrument

Table 4 shows the enrolled students and potential students in secondary school during the period 1988-1998. In the academic years previous to the change in the law, a percentage decrease is observed in the ratio enrolled/potential students in 1989-1990 and 1990-1991, and a slight increase is registered in 1991-1992 and 1992-1993. However, in the academic year directly affected by the reform, 1993-1994, and the two subsequent academic years, this ratio shows higher percentage increases. To the best of my knowledge, there were no other modifications that would have affected the educational attainment around the reform date, therefore this can be considered a positive indicator about the validity of the instrument.

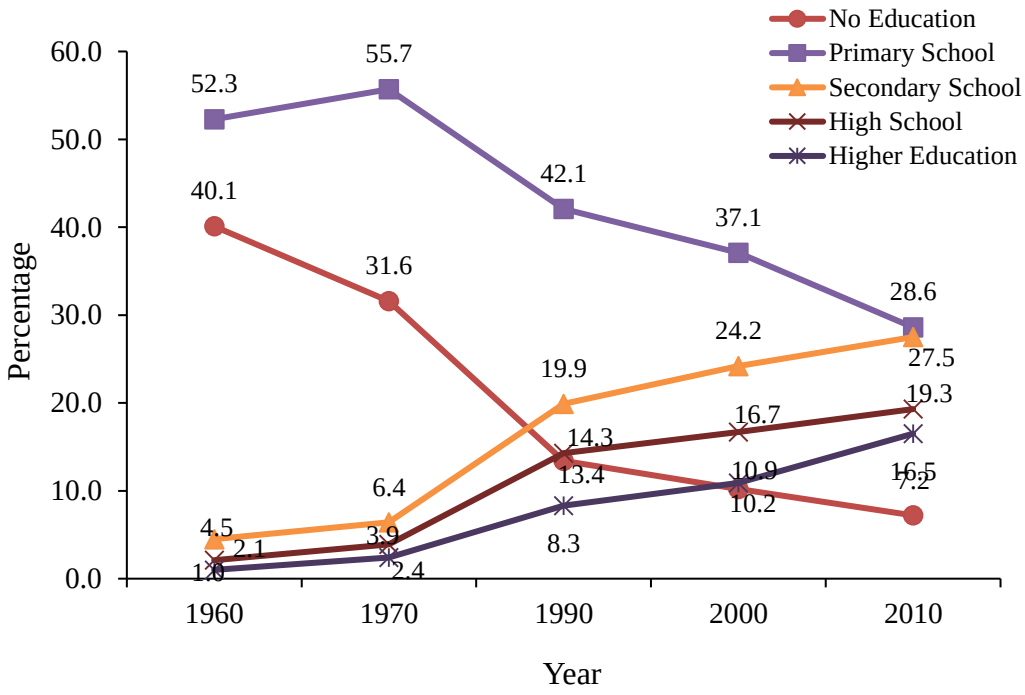
Table 4 Enrolled and potential students – Secondary school

Academic year	Enrolled students	Potential students	% (Enrolled / Potential)	% increase
1988-1989	**4 355 334**	7 438 743	58.5	
1989-1990	**4 267 156**	7 410 859	57.5	**-0.9**
1990-1991	**4 190 190**	7 354 602	56.9	**-0.6**
1991-1992	**4 160 692**	7 286 822	57.1	**0.1**
1992-1993	**4 203 098**	7 221 894	58.2	**1.1**
1993-1994	**4 341 924**	7 169 977	60.5	**2.3**
1994-1995	**4 493 173**	7 135 485	62.9	**2.4**
1995-1996	**4 687 335**	7 118 062	65.8	**2.8**
1996-1997	**4 809 266**	7 115 739	67.5	**1.7**
1997-1998	**4 929 301**	7 127 587	69.1	**1.5**

Source: Enrolled students: Secretariat of Public Education. Educational statistics. Historical statistics.
Potential students: Author's elaboration based on World Bank data. World Development Indicators. Population, total and Birth rate, crude (per 1 000 people).
http://data.worldbank.org/indicator/SP.POP.TOTL?locations=MX
http://data.worldbank.org/indicator/SP.DYN.CBRT.IN?locations=MX

The highest attained level of education has increased considerably in Mexico. Figure 9 shows for 1960, 1970, 1990, 2000 and 2010, the percentage of the population aged 15 and older by level of education. As can be observed, the percentage of population with no education and only primary education has steeply decreased over time from 40.1 percent and 52.3 percent in 1960, respectively, to 7.2 percent and 28.6 percent in 2010, respectively. On the other hand, higher percentages for people with secondary school, high school and higher education, have been gradually reached. In 1970 only 6.4 percent of Mexicans attended secondary school, while in 1990 this percentage tripled.

Figure 8 Percentage of population aged 15 and older -Level of education-



Source: National Institute of Statistics and Geography (INEGI). For some years percentages do not add up to 100% due to the non-specified category.

Since the instrument proposed tries to capture the causal effect by the exogenous variation induced by the 1993 reform, the existing positive trend in the levels of education has to be addressed in the analysis. Failure to account for it would generate biased estimations, because the growing tendency in the years of education would be incorrectly attributed to the instrument. In order to control for the positive trend in the years of education, individuals are grouped in three birth cohorts groups, 1929-1948, 1949-1968 and 1979-1998. This also provides the opportunity to control for other possible intergenerational changes such as different attitudes towards divorce for example.

Another issue that has to be considered is the potential sample selection bias in the nature of the analysis being conducted. The dataset only includes people married, divorced and separated, and it is likely that those individuals who were affected by the reform and are married, divorced or separated at the time of the survey, are also those with lower levels of educational attainment[8]. However, the selection bias present in the sample is offset by another important feature of the dataset. The 1993 change in the law, encourages students that would previously have not attended or completed secondary education to stay in school until they finish it. However, it has no effect on those individuals who initially were determined to pursue higher levels of education. Clark and Royer (2013) show that these reforms generate only weak spillovers to higher levels of educational attainment. On the bases of the foregoing, all those persons with more than 12 years of education are excluded from the sample. Two main implications should be highlighted: 1) Not to consider the group of individuals above 12 years of education contributes to reduce the potential selection bias mentioned earlier. The higher the level of education, the less likely to be married, divorced or separated if affected by the change in the compulsory years of schooling. 2) The analysis is centered only on the effect of education on marital disruption for the group of people with no more than 12 years of schooling. Although the 2010 Census indicates that 82.6% of the Mexican population has as a maximum 12 years of education and 61.1% of the divorced population in 2010 are also in this group (up to 12 years of education), the findings in this analysis should carefully not be extended to the entire Mexican population.

5 Probability of marital dissolution

5.1 Empirical results

The marginal effects obtained for the probit specification established in this analysis, when treating schooling as exogenous, are presented in Table 5. Column (1) reports the results for the simplest model, when the age at marriage, the number of children and the employment status are not considered. It could be argued that these three covariates are

[8] All those who were born in 1979 were the first generation affected by the compulsory schooling change, since they were finishing 8th grade and starting 9th in 1993.

themselves affected by schooling, representing one of the channels by which education affects marriage dissolution. Therefore columns (2) to (4) show the estimations when adding these variables initially excluded from the model, one at a time. Finally, in column (5) the complete model specified is presented (Equation 1).

The relationship between all the explanatory variables and the probability of marriage dissolution is significant. Moreover, the data indicates that an additional year of schooling is associated with a decrease between 0.006 and 0.009 in the probability of marital dissolution, depending on the controls used, for those with 12 years of education as a maximum[9]. This means that for the period 2002-2012, an extra year of education makes an individual between 0.6 to 0.9 percentage points less likely to get divorced.

According to column (5), the age at marriage and belonging to an ethnic group reduce the probability of marriage dissolution by 0.01 and 0.02, respectively. Marriage duration also indicates that the longer the marriage, the lower the probability of marital breakdown. On the contrary, living in an urban area increases this probability by 0.03. All these four variables present the expected association according to literature. A variable that shows a different path is the number of children. The data indicates that in Mexico an additional child increases the probability of marriage dissolution by 0.006. A potential explanation for this to happen in the country, is that the analysis is restricted to the group of people with no more than 12 years of education, therefore, an additional child represents higher household expenditure, increasing internal financial family strain that leads to instability within the marriage. Finally, the employment status indicates that employed individuals increase by 0.04 their probabilities of separation. Yet this result should not be considered as conclusive as the others, because for this specific variable a different effect between the subgroups of women and men is expected. The issue will be addressed below, when a gender strategy for the probit estimation is performed.

It could be argued that the effect of education on marital dissolution seems to be relatively small versus other variables in the model, such as marriage duration. However, given that divorce rates early-on in marriages are higher, and later-on lower, the larger effect of the variable marriage duration is reasonable. In addition, considering that only 8.3% of the dataset are divorced individuals and the impact of an additional year of schooling is of the same magnitude as an additional child (but opposite in direction), the marginal effect obtained for the years of schooling should not be minimized at this stage.

[9] All results only apply to this subgroup even if not explicitly mentioned.

For instance, completion of secondary school (9 years of education) decreases in 1.8 percentage points the probability of marital dissolution, compared to completion of primary school (6 years of education).

The results for the complete model are in line with those reported in columns (1) to (4), for all the variables. In particular for education, a stronger negative effect on marital dissolution (0.009) is observed at first, and then it is reduced when the age at marriage and the number of children are incorporated to the model, but not when only the employment status is added.

Table 5 Probit estimates

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.009***	-0.006***	-0.007***	-0.009***	-0.006***
	(0.0009)	(0.0009)	(0.0010)	(0.0009)	(0.0009)
Area (urban=1)	0.044***	0.043***	0.045***	0.041***	0.039***
	(0.0058)	(0.0054)	(0.0057)	(0.0057)	(0.0053)
Ethnic group	-0.026***	-0.023***	-0.027***	-0.027***	-0.025***
	(0.0067)	(0.0061)	(0.0064)	(0.0065)	(0.0058)
Marriage duration					
6-10 years	-0.191***	-0.215***	-0.209***	-0.193***	-0.224***
	(0.0254)	(0.0253)	(0.0252)	(0.0255)	(0.0250)
11-15 years	-0.310***	-0.356***	-0.341***	-0.317***	-0.382***
	(0.0264)	(0.0267)	(0.0260)	(0.0264)	(0.0266)
16-20 years	-0.483***	-0.636***	-0.517***	-0.484***	-0.655***
	(0.0237)	(0.0254)	(0.0234)	(0.0238)	(0.0248)
More than 20 years	-0.585***	-0.741***	-0.616***	-0.583***	-0.754***
	(0.0193)	(0.0186)	(0.0193)	(0.0196)	(0.0185)
Age at marriage		-0.011***			-0.010***
		(0.0006)			(0.0006)
Number of children			0.010***		0.006***
			(0.0011)		(0.0010)
Emp. Status (emp=1)				0.050***	0.047***
				(0.0070)	(0.0066)
Total of observations	8 468	8 468	8 468	8 468	8 468

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and gender and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level.

5.2 Probability of marital dissolution – Average schooling

As previously mentioned, to define an appropriate strategy to identify the impact that education has on the probability of marital dissolution, and to deal with a potential distortion generated if duplicated observations for a household were considered in the analysis since information was available for the husband and also for the wife, the

decision taken was to use the record of the individual in the household with the highest level of education. Thus, if the wife had 8 years of education, but the husband had 9 years, the information of the latter was used. The results obtained for this approach were presented in the previous section 5.1. The main purpose of this section is to compare the results when a different strategy is followed, when the average level of education for married couples is used in the study. It is important to include these results and to verify if the effect of schooling on the probability of marriage dissolution is still negative when the approach is modified. Table 6 provides the marginal effects for the five different specifications discussed earlier.

Table 6 Probit estimates – Average schooling

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.005***	-0.003***	-0.003***	-0.005***	-0.002***
	(0.0010)	(0.0010)	(0.0010)	(0.0010)	(0.0010)
Area (urban=1)	0.041***	0.040***	0.042***	0.038***	0.037***
	(0.0059)	(0.0055)	(0.0058)	(0.0059)	(0.0054)
Ethnic group	-0.022***	-0.020***	-0.023***	-0.023***	-0.022***
	(0.0070)	(0.0064)	(0.0068)	(0.0069)	(0.0061)
Marriage duration					
6-10 years	-0.188***	-0.212***	-0.207***	-0.190***	-0.223***
	(0.0252)	(0.0252)	(0.0251)	(0.0253)	(0.0249)
11-15 years	-0.306***	-0.351***	-0.339***	-0.313***	-0.380***
	(0.0264)	(0.0268)	(0.0260)	(0.0264)	(0.0266)
16-20 years	-0.483***	-0.637***	-0.518***	-0.484***	-0.657***
	(0.0236)	(0.0253)	(0.0233)	(0.0236)	(0.0247)
More than 20 years	-0.582***	-0.739***	-0.615***	-0.581***	-0.753***
	(0.0193)	(0.0187)	(0.0192)	(0.0195)	(0.0185)
Age at marriage		-0.011***			-0.010***
		(0.0006)			(0.0006)
Number of children			0.012***		0.007***
			(0.0011)		(0.0011)
Emp. Status (emp=1)				0.048***	0.046***
				(0.0072)	(0.0067)
Total of observations	8 468	8 468	8 468	8 468	8 468

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and gender and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level.

A negative and significant impact on the probability of marital dissolution is reported for an additional year of schooling. As it can be expected, when using the average education of the household, rather than the highest level, the impact of schooling on the probability of marriage dissolution is smaller. Column (5) of Table 6 indicates that an extra year of education reduces by 0.2 percentage points the probability of marriage dissolution. The rest of the variables present a similar behavior. This evidence supports

the conclusions obtained through the main approach established in the first part of the analysis. It also contributes to dispel the argument that the inclusion in the dataset of the highest educated individuals is the real driving force for the findings in this study.

5.3 Probability of marital dissolution – Only women and only men

Typically, empirical studies based on marriage decisions are conducted splitting the dataset by gender. Then, conclusions obtained for the women subgroup are compared with the men subgroup. Due to the lack of surveys for Mexico that include variables such as the age of marriage, and the number of children for men, not much work has been devoted to study this topic. Although the information provided by the MxFLS survey offers an opportunity to analyze marriage dissolution decisions, splitting the dataset for females and males is not considered the best strategy to follow in here, given the instrument used to establish the causal effect between education and marital breakdown. The change in the compulsory years of education was implemented in 1993. If the *only women*/*only men* approach is followed, the number of people divorced and separated affected by this change is considerably reduced within each subset.

The limitation in the number of observations to conduct the analysis following the gender strategy restricts the IV methodology but not the probit estimation. Therefore, in this subsection, results are provided when the probit analysis is conducted by gender. The reader is asked to bear in mind that these results are presented only as complementary information, since they are not considered for the second part of the analysis, the causality approach.

Tables 7 and 8 present the marginal effects for the only women and only men subsamples, respectively. The variable years of schooling continues to exhibit a negative effect for both, the female and male subsamples, but it is only consistently significant for women. The results reported when the years of schooling are significant for both, women and men, column (1) and column (4) in Tables 7 and 8, indicate that an additional year of education decreases by 0.003 the probability of marital dissolution for women, while it only reduces in 0.001 the probability of marital dissolution for men. This finding highlights an important implication: the level of education that the wife brings into the marriage plays a more relevant role than the level of education of the husband, in terms of marital stability. Another notable finding is that an additional child increases only by

0.2 percentage points the probability of marital disruption for women, but it increases by 0.7 percentage points the probability for men (column [5] in Tables 7 and 8). As mentioned earlier, more children in the household represent higher financial strain. However, women are far more likely to stay with the children and continue to live in the family home than men after marriage dissolution. Therefore, as the number of children in the marriage increases, men have a greater opportunity than women to change their lifestyle through marital breakdown. This is an important result against the strategy commonly followed in other studies where the number of children is not considered when the marital decisions of men are modelled. Finally, and perhaps the most striking finding in this subsection: the variable employment status shows a positive impact for the only women results, while for the only men results it exhibits a negative effect. This variable is the only one that presents opposite signs when splitting the dataset by gender, suggesting for the particular subgroup of people with no more than 12 years of education, that employed females and unemployed males are more likely to be divorced. Taken together, these two results might be a potential indicator that production complementarities within the household (Becker 1991) are important in Mexico, with more stable marriages with working husbands and non-working wives.

Table 7 Probit estimates – Only women

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.003***	-0.001	-0.001**	-0.003***	-0.001**
	(0.0008)	(0.0008)	(0.0009)	(0.0008)	(0.0008)
Area (urban=1)	0.030***	0.030***	0.032***	0.023***	0.024***
	(0.0055)	(0.0050)	(0.0055)	(0.0053)	(0.0048)
Ethnic group	-0.017***	-0.016***	-0.018***	-0.019***	-0.018***
	(0.0065)	(0.0056)	(0.0063)	(0.0060)	(0.0050)
Marriage duration					
6-10 years	-0.220***	-0.258***	-0.233***	-0.227***	-0.272***
	(0.0293)	(0.0299)	(0.0294)	(0.0298)	(0.0303)
11-15 years	-0.338***	-0.384***	-0.359***	-0.352***	-0.416***
	(0.0309)	(0.0318)	(0.0310)	(0.0310)	(0.0321)
16-20 years	-0.495***	-0.661***	-0.520***	-0.498***	-0.681***
	(0.0276)	(0.0309)	(0.0279)	(0.0276)	(0.0298)
More than 20 years	-0.576***	-0.752***	-0.604***	-0.570***	-0.762***
	(0.0236)	(0.0237)	(0.0242)	(0.0242)	(0.0239)
Age at marriage		-0.009***			-0.008***
		(0.0006)			(0.0005)
Number of children			0.006***		0.002***
			(0.0011)		(0.0009)
Emp. Status (emp=1)				0.071***	0.066***
				(0.0084)	(0.0079)
Total of observations	6 833	6 833	6 833	6 833	6 833

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level.

Table 8 Probit estimates – Only men

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.001**	-0.001**	-0.0007	-0.001**	-0.0006
	(0.0007)	(0.0006)	(0.0007)	(0.0007)	(0.0005)
Area (urban=1)	0.024***	0.018***	0.022***	0.024***	0.017***
	(0.0047)	(0.0039)	(0.0043)	(0.0047)	(0.0036)
Ethnic group	-0.008	-0.007	-0.008	-0.008	-0.006
	(0.0053)	(0.0041)	(0.0046)	(0.0053)	(0.0037)
Marriage duration					
6-10 years	-0.151***	-0.178***	-0.193***	-0.150***	-0.211***
	(0.0344)	(0.0387)	(0.0360)	(0.0344)	(0.0392)
11-15 years	-0.256***	-0.357***	-0.322***	-0.255***	-0.428***
	(0.0339)	(0.0391)	(0.0349)	(0.0339)	(0.0397)
16-20 years	-0.364***	-0.569***	-0.424***	-0.363***	-0.625***
	(0.0311)	(0.0359)	(0.0326)	(0.0311)	(0.0365)
More than 20 years	-0.419***	-0.620***	-0.466***	-0.417***	-0.666***
	(0.0280)	(0.0313)	(0.0302)	(0.0280)	(0.0324)
Age at marriage		-0.005***			-0.004***
		(0.0005)			(0.0005)
Number of children			0.010***		0.007***
			(0.0010)		(0.0009)
Emp. Status (emp=1)				-0.011	-0.012**
				(0.0069)	(0.0058)
Total of observations	5 668	5 668	5 668	5 668	5 668

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level.

In terms of gender, this section enriches the previous findings. Interesting results are observed from this strategy, although due to sample size reasons it is not followed when determining the causal effect of education on marriage dissolution.

6 The causal effect of education on the probability of marital dissolution

To identify not only the association of education on marital disruption but its causal effect, the use of the 1993 change in the length of compulsory education in Mexico is incorporated into the analysis as an instrument for education. The IV probit estimates (Equation 1 and Equation 2) using models identical to the earlier probit specifications are presented in Table 9 and Table 10.

The results obtained for the Wald-test of exogeneity indicate that the null hypothesis of exogeneity is rejected and therefore the use of an instrument for the years of schooling is an appropriate decision. This test is assessing whether the error terms in the structural equation (1) and equation (2) are correlated. If the test is not significant, the null

hypothesis cannot be rejected and a probit regression would be the appropriate strategy to estimate the effect of education on marital dissolution, since there is no endogeneity and no need for instrumental variables (Wooldridge 2010).

Table 9 IV probit estimates

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.008*	-0.005*	-0.007	-0.009*	-0.005
	(0.0053)	(0.0031)	(0.0078)	(0.0050)	(0.0040)
Area (urban=1)	0.042**	0.040***	0.043	0.039***	0.037**
	(0.0172)	(0.0123)	(0.0302)	(0.0153)	(0.0153)
Ethnic group	-0.022*	-0.017**	-0.023	-0.023**	-0.018*
	(0.0120)	(0.0084)	(0.0194)	(0.0117)	(0.0103)
Marriage duration					
6-10 years	-0.277***	-0.276***	-0.287**	-0.277***	-0.279***
	(0.0730)	(0.0261)	(0.134)	(0.0662)	(0.0285)
11-15 years	-0.462***	-0.599***	-0.482**	-0.463***	-0.604***
	(0.107)	(0.0609)	(0.206)	(0.0957)	(0.0842)
16-20 years	-0.603***	-0.851***	-0.625***	-0.600***	-0.853***
	(0.105)	(0.0648)	(0.201)	(0.0925)	(0.0892)
More than 20 years	-0.685***	-0.922***	-0.707***	-0.681***	-0.922***
	(0.0555)	(0.0338)	(0.108)	(0.0490)	(0.0468)
Age at marriage		-0.014***			-0.013***
		(0.0036)			(0.0048)
Number of children			0.009*		0.003**
			(0.0054)		(0.0015)
Emp. Status (emp=1)				0.044***	0.039***
				(0.0152)	(0.0153)
Total of observations	8 468	8 468	8 468	8 468	8 468
Wald test of exogeneity	96.07	260.88	42.18	106.81	171.0
Prob > chi	0.0000	0.0000	0.0000	0.0000	0.0000
First-stage coefficient					
Instrument	0.391***	0.693***	0.207**	0.439***	0.492***
	(0.104)	(0.107)	(0.103)	(0.104)	(0.106)
F-test for instrument	14.0895	41.994	4.06411	17.8264	21.4003
Prob > F	0.0002	0.0000	0.0438	0.0000	0.0000

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and gender and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level. *Statistically significant at the 90% confidence level.

A further important question is if the change in the number of years of compulsory education in Mexico is a valid instrument for the years of schooling or if this is a weak instrument. Since the first stage of the model specification is linear, the approach followed is to estimate its linear version and compare the obtained F-statistic for instrument weakness with the rule of thumb indicated by Staiger and Stock (1997). According to this rule, the F-statistic should be greater than 10 for weak identification not to be seen as a problem. Therefore, since the estimated value of the F-statistic for the simplest model

(column [1]) and the complete model (column [5]) are 14.0 and 21.4, respectively in Table 9; and 11.6 and 14.8, respectively in Table 10; the instrument can be considered relevant.

Table 10 IV probit estimates – Average schooling

	Marginal Effects				
	(1)	**(2)**	**(3)**	**(4)**	**(5)**
Years of schooling	-0.004	-0.002	-0.002	-0.005	-0.001
	(0.0046)	(0.0029)	(0.0071)	(0.0043)	(0.0039)
Area (urban=1)	0.039**	0.037***	0.040	0.036**	0.034**
	(0.0173)	(0.0128)	(0.0328)	(0.0152)	(0.0167)
Ethnic group	-0.018	-0.013	-0.019	-0.019*	-0.015
	(0.0116)	(0.0086)	(0.0193)	(0.0112)	(0.0106)
Marriage duration					
6-10 years	-0.275***	-0.276***	-0.287*	-0.276***	-0.279***
	(0.0787)	(0.0267)	(0.160)	(0.0697)	(0.0301)
11-15 years	-0.460***	-0.599***	-0.481*	-0.461***	-0.605***
	(0.116)	(0.0679)	(0.247)	(0.101)	(0.0996)
16-20 years	-0.602***	-0.854***	-0.627***	-0.600***	-0.856***
	(0.113)	(0.0720)	(0.239)	(0.0974)	(0.105)
More than 20 years	-0.683***	-0.922***	-0.706***	-0.680***	-0.922***
	(0.0597)	(0.0374)	(0.129)	(0.0514)	(0.0549)
Age at marriage		-0.015***			-0.014**
		(0.0040)			(0.0058)
Number of children			0.010		0.004**
			(0.0072)		(0.0019)
Emp. Status (emp=1)				0.042***	0.038**
				(0.0154)	(0.0171)
Total of observations	8 468	8 468	8 468	8 468	8 468
Wald test of exogeneity	84.51	225.32	32.12	96.82	134.97
Prob > chi	0.0000	0.0000	0.0000	0.0000	0.0000
First-stage coefficient					
Instrument	0.353***	0.609***	0.171*	0.405***	0.408***
	(0.104)	(0.106)	(0.102)	(0.103)	(0.106)
F-test for instrument	11.6187	32.6798	2.78878	15.3298	14.8883
Prob > F	0.0007	0.0000	0.0950	0.0001	0.0001

Source: Mexican Family Life Survey (MxFLS). Robust standard errors in parentheses. Marginal effects at sample means. All regressions include a constant term and gender and birth cohort control dummies. Marriage duration categorical base: 0-5 years of marriage. ***Statistically significant at the 99% confidence level. **Statistically significant at the 95% confidence level. *Statistically significant at the 90% confidence level.

However, the estimates in columns (1) through (5), although still negative in sign, do not show that an additional year of schooling reduces the probability of marital dissolution at standard confidence levels. For instance, none is statistically significant at the 5 percent level. This result suggests that the previous relationship found between education and divorce through the probit estimations is not causal and indicates that although higher levels of education are an undeniable trait observed in non-broken marriages, it is not education by itself one of the mechanisms leading to better marriage outcomes. The rest of the variables present effects consistent with the findings observed in sections 5.1 and

5.2. The only exception is the variable ethnic group which is not statistically significant, for example, in the complete model (columns [5] in Tables 9 and 10).

As discussed earlier, the use of the IV technique obtains consistent estimators that traditional methodologies fail to account for. In this particular case, the probit model that ignores the endogeneity in education suggests that an additional year of schooling is associated with a decrease between 0.6 and 0.9 percentage points in the probability of marital dissolution. However, when using an instrument for the years of schooling, education is found to have no statistically significant effect on the probability of marital breakdown. Comparing the values obtained for the probit and the IV probit coefficients for education, it is observed that the probit estimators are downward-bias.

7 Conclusion

This work aims to answer the following question: Is it possible to establish a causal effect of education on the probability of marital dissolution? While there is vast economic literature related to marital decisions, the emphasis has been mainly addressed to analyze the impact of factors such as female labour force participation, costs of divorce, communication, amongst others. In terms of showing an impact from education on marriage outcomes, studies where education is associated with marital dissolution decisions can be found for Australia, Lithuania, United States, United Kingdom, and other countries. However, none of these studies demonstrate a causal effect. In addition, relationships have been found to be ambiguous and to differ by country. For some countries education exerts a positive effect on the probability of marriage dissolution, while for others a negative or null association is identified. Furthermore, to the best of my knowledge, empirical evidence showing the impact of education and other potential divorce determinants on marriage dissolution is non-existent for Mexico. This can be attributed to the lack of surveys in the country with adequate information to study this topic fully, discouraging researchers to work on this field.

In the first part of the analysis, the probit models reveal that education is significant and negatively related to the probability of marriage dissolution. An additional year of education is associated with a decrease between 0.6 and 0.9 percentage points in the probability of marital dissolution for the 2002-2012 period. However, the results using

the IV methodology indicate that an additional year of schooling has no effect on the probability of marital dissolution, suggesting that the relation initially found between education and divorce is not causal. This finding highlights the relevance of the instrumental variables technique in the analysis in order to correctly assess the impact of education on marital decisions. Although higher educated individuals indeed face a lower probability of divorce, education is not one of the driving forces leading to better marriage outcomes.

Education is a powerful tool to reduce social, cultural and economic disadvantages. Since divorce rates have greatly increased in recent years in Mexico, this work adds knowledge to understand better the mechanisms behind marital dissolution in the country, underlining the role of education. This study also suggests that other social studies that assume a causal relation between education and marital disruption may need to be carefully rethought. Further research should be devoted in Mexico, and other developing countries, to investigate one of the most important non-market institutions; the institution of marriage.

Bibliography

Amato, P. R. (1996). Explaining the intergenerational transmission of divorce. *Journal of Marriage and the Family*, 58(3), 628–640.

Angrist, J. D., & Krueger, A. B. (1991). Does compulsory school attendance affect schooling and earnings? *The Quarterly Journal of Economics,* 106(4), 979–1014.

Becker, G. S. (1991). A treatise on the family. *Harvard University Press,* Enlarged version.

Becker, G. S., Landes, E. M., & Michael, R. T. (1977). An economic analysis of marital instability. *Journal of Political Economy*, 85(6), 1141–1187.

Berrington, A., & Diamond, I. (1999). Marital dissolution among the 1958 British birth cohort: The role of cohabitation. *Population Studies*, 53, 19–36.

Brunello, G., Fort, M., & Guglielmo, W. (2009). Changes in compulsory schooling, education and the distribution of wages in Europe. *The Economic Journal*, 119, 516–539.

Chiappori, P. A., Iyigun, M., & Weiss, Y. (2009). Investment in schooling and the marriage market. *American Economic Review*, 99(5), 1689–1713.

Clark, D., & Royer, H. (2013). The effect of education on adult mortality and health: Evidence from Britain. *American Economic Review,* 103(6), 2087–2120.

Dahl, G. B., & Moretti, E. (2008). The demand for sons. *Review of Economic Studies*, 75(4), 1085–1120.

Freiden, A. (1974). The United States marriage market. *Journal of Political Economy*, 82(2), Part II, S34–S53.

Guvenen, F., & Rendall, M. (2015). Women's emancipation through education: A macroeconomic analysis. *Review of Economic Dynamics*, 18(4), 931–956.

Harkonen, J., & Dronkers, J. (2006). Stability and change in the educational gradient of divorce: A comparison of seventeen countries. *European Sociological Review*, 22, 501–517.

Harmon, C., & Walker, I. (1995). Estimates of the economic return to schooling for the United Kingdom. American Economic Review, 85(5), 1278-1286.

Hewitt, B., Baxter, J., & Western, M. (2005). Marriage breakdown in Australia. The social correlates of separation and divorce. *Journal of Sociology*. *The Australian Sociological Association*, 41(2), 163–183.

Hoem, B., & Hoem, J. (1992). The disruption of marital and non-marital unions in contemporary Sweden. *Demographic Application of Event History Analysis*, 61–93. Oxford.

Kalmijn, M. (2003). Union disruption in the Netherlands: Opposing influences of task specialization and assortative mating. *International Journal of Sociology*, 33(2), 36–64.

Kalmijn, M., & Poortman, A. (2006). His or her divorce? The gendered nature of divorce and its determinants. *European Sociological Review*, 22(2), 201–214.

Lewbel, A., Dong, Y., & Yang, T. T. (2012). Comparing features of convenient estimators for binary choice models with endogenous regressors. The Canadian Journal of Economics, 45(3), 809-829.

Lleras-Muney, A. (2005). The relationship between education and adult mortality in the United States. *The Review of Economic Studies*, 72(1), 189–221.

Lochner, L., & Moretti, E. (2004). The effect of education on crime: Evidence from prison inmates, arrests, and self-reports. *American Economic Review*, 94(1), 155–189.

Marinescu, I. (2015). Divorce: What does learning have to do with it? *National Bureau of Economic Research*, Working paper 21761.

Martin, S. P. (2006). Trends in marital dissolution by women's education in the United States. *Demographic Research*, 15(20), 537–560.

Mott, F., & Moore, S. (1979). The causes of marital disruption among young American women: An interdisciplinary perspective. *Journal of Marriage and the Family*, 41, 355–365.

Staiger, D., & Stock, J. (1997). Instrumental variables regression with weak instruments. *Econometrica*, 65(3), 557–586.

Weiss, Y., & Willis, R. J. (1997). Match quality, new information, and marital dissolution. *Journal of Labor Economics*, 15(1), Part II, S293–S329.

Wooldridge, J. M. (2010). Econometric analysis of cross section and panel data. *The MIT Press*, Cambridge.