

Table 6 Probit estimates – Average schooling

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

4.3 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 in Mexico including variables such as the age of marriage and the number of children for men, not much work has been devoted

to study this topic. The information provided by the MxFLS survey offers an opportunity to analyse marriage dissolution decisions but splitting the dataset for females and males is not considered the best strategy to follow in here. The change in 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 these results are presented only as complementary information as they are not considered in 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 (columns [1] and columns [4]) in Tables 7 and 8) indicate 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: In terms of marital stability, the level of education the wife brings into the marriage plays a more relevant role than the husband's level of education. 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, after marriage dissolution, women are far more likely to stay with the children living in the family home than men. As the number of children in the marriage increases, men are more likely than women to change their lifestyle after a 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 women and a negative effect for men. This variable is the only with opposite signs when splitting the dataset by gender, suggesting that employed females and unemployed males are more likely to be divorced, for the particular subgroup

of people with no more than 12 years of education. Taken together, these two results might be a potential indicator that production complementarities within the household (Becker 1993) 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*** (0.0008)	-0.001 (0.0008)	-0.001** (0.0009)	-0.003*** (0.0008)	-0.001** (0.0008)
Area (urban=1)	0.030*** (0.0055)	0.030*** (0.0050)	0.032*** (0.0055)	0.023*** (0.0053)	0.024*** (0.0048)
Ethnic group	-0.017*** (0.0065)	-0.016*** (0.0056)	-0.018*** (0.0063)	-0.019*** (0.0060)	-0.018*** (0.0050)
Marriage duration					
6-10 years	-0.220*** (0.0293)	-0.258*** (0.0299)	-0.233*** (0.0294)	-0.227*** (0.0298)	-0.272*** (0.0303)
11-15 years	-0.338*** (0.0309)	-0.384*** (0.0318)	-0.359*** (0.0310)	-0.352*** (0.0310)	-0.416*** (0.0321)
16-20 years	-0.495*** (0.0276)	-0.661*** (0.0309)	-0.520*** (0.0279)	-0.498*** (0.0276)	-0.681*** (0.0298)
More than 20 years	-0.576*** (0.0236)	-0.752*** (0.0237)	-0.604*** (0.0242)	-0.570*** (0.0242)	-0.762*** (0.0239)
Age at marriage		-0.009*** (0.0006)			-0.008*** (0.0005)
Number of children			0.006*** (0.0011)		0.002*** (0.0009)
Emp. Status (emp=1)				0.071*** (0.0084)	0.066*** (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** (0.0007)	-0.001** (0.0006)	-0.0007 (0.0007)	-0.001** (0.0007)	-0.0006 (0.0005)
Area (urban=1)	0.024*** (0.0047)	0.018*** (0.0039)	0.022*** (0.0043)	0.024*** (0.0047)	0.017*** (0.0036)
Ethnic group	-0.008 (0.0053)	-0.007 (0.0041)	-0.008 (0.0046)	-0.008 (0.0053)	-0.006 (0.0037)
Marriage duration					
6-10 years	-0.151*** (0.0344)	-0.178*** (0.0387)	-0.193*** (0.0360)	-0.150*** (0.0344)	-0.211*** (0.0392)
11-15 years	-0.256*** (0.0339)	-0.357*** (0.0391)	-0.322*** (0.0349)	-0.255*** (0.0339)	-0.428*** (0.0397)
16-20 years	-0.364*** (0.0311)	-0.569*** (0.0359)	-0.424*** (0.0326)	-0.363*** (0.0311)	-0.625*** (0.0365)
More than 20 years	-0.419*** (0.0280)	-0.620*** (0.0313)	-0.466*** (0.0302)	-0.417*** (0.0280)	-0.666*** (0.0324)
Age at marriage		-0.005*** (0.0005)			-0.004*** (0.0005)
Number of children			0.010*** (0.0010)		0.007*** (0.0009)
Emp. Status (emp=1)				-0.011 (0.0069)	-0.012** (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.

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

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

The Wald-test indicates the null hypothesis of no endogeneity is rejected and the use of an instrument for the years of schooling is an appropriate decision. This test assesses whether the error terms in 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 considered the right strategy to estimate the effect of education on marital dissolution (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 the change in compulsory education in Mexico a valid instrument for the years of schooling? As the first stage of the model specification is linear, the approach followed is to estimate its linear version and compare it to the 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 to rule out weak identification. The values obtained in the simplest model (column [1]) and the complete model (column [5]) are 14.0 and 21.4 in Table 9; and 11.6 and 14.8, in Table 10; indicating 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 (0.0046)	-0.002 (0.0029)	-0.002 (0.0071)	-0.005 (0.0043)	-0.001 (0.0039)
Area (urban=1)	0.039** (0.0173)	0.037*** (0.0128)	0.040 (0.0328)	0.036** (0.0152)	0.034** (0.0167)
Ethnic group	-0.018 (0.0116)	-0.013 (0.0086)	-0.019 (0.0193)	-0.019* (0.0112)	-0.015 (0.0106)
Marriage duration					
6-10 years	-0.275*** (0.0787)	-0.276*** (0.0267)	-0.287* (0.160)	-0.276*** (0.0697)	-0.279*** (0.0301)
11-15 years	-0.460*** (0.116)	-0.599*** (0.0679)	-0.481* (0.247)	-0.461*** (0.101)	-0.605*** (0.0996)
16-20 years	-0.602*** (0.113)	-0.854*** (0.0720)	-0.627*** (0.239)	-0.600*** (0.0974)	-0.856*** (0.105)
More than 20 years	-0.683*** (0.0597)	-0.922*** (0.0374)	-0.706*** (0.129)	-0.680*** (0.0514)	-0.922*** (0.0549)
Age at marriage		-0.015*** (0.0040)			-0.014** (0.0058)
Number of children			0.010 (0.0072)		0.004** (0.0019)
Emp. Status (emp=1)				0.042*** (0.0154)	0.038** (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*** (0.104)	0.609*** (0.106)	0.171* (0.102)	0.405*** (0.103)	0.408*** (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.

The estimates in columns (1) to (5) do not show an additional year of schooling reduces the probability of marital dissolution at standard confidence levels. A casual effect is not observed. All the other results are consistent with the findings observed in sections 4.1 and 4.2. The only exception is the variable ethnic group which is not statistically significant in the complete model (column [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 suggests 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 considering endogeneity, the effect of education is not statistically significant on the probability of marital breakdown. Comparing the values obtained for the probit and the

IV probit coefficients for education, it is observed the probit estimators are downward-bias.

7 Conclusion

This paper analyses the effect of education on marital dissolution in the context of a Latin American country, Mexico. While there is vast economic literature related to education and marital decisions, analyses have mainly focused on developed economies or European countries. Studies can be found for Norway, United States, United Kingdom and others, with findings differing across countries and linked to differences in several factors such as the labour market conditions, social policies and strictness of divorce legislation.

Empirical evidence showing the impact of education and other potential divorce determinants on marriage dissolution is non-existent for the Latin American Region. This can be attributed to the lack of surveys with adequate information to fully study the topic, discouraging researchers to work on this field.

In the first part of the analysis, outcomes across all the different specifications are significantly negatively correlated with marriage dissolution. The results using the IV methodology in the second part, indicate the relationship between education and divorce is not causal.

These two findings together let us draw important implications. Is education by itself a driving mechanism increasing marital stability in Mexico? No. Developing economies face substantially lower levels of education attainment, higher dropout rates, poor quality teaching and lack of financial resources (classrooms, materials, technology). All these factors are preventing education to be a stronger catalyst to positively change social norms and conventions surrounding family life and no causal effect from higher levels of education on marriage stability can be established. Does it mean the level of education has nothing to do with better marriage outcomes in Mexico? Education is a worldwide powerful tool to reduce social and economic disadvantages. This work suggests education is undoubtedly capturing the effect of other cognitive and/or cultural mechanisms present. We aim to further stimulate research to continue analysing the mechanisms driving marital decisions in the Latin American region.

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