Does the spouse matter in the decision-making power? The direct and indirect effects of an education reform on women's empowerment in Benin, West Africa

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Abstract

This paper uses the free primary education policy of 2006 in Benin as an exogenous variation to evaluate education's indirect and direct effects on empowerment. The 2006 education reform was one of the largest reforms in Benin in recent years. We used the triple differences taking advantage of variations in program intensity, birth cohorts, and over time. In line with the literature, we find a positive impact of the reform on schooling and learning in the long term and mixed results in the medium term. Nevertheless, our results do not show any significant impact on women's empowerment. Instead, we find that the FPE 2006 had an indirect positive impact on the choice of spouse and consequently on the empowerment of educated women with educated partners. Furthermore, targeted women with educated partners had a higher probability of partaking in households' decisions and different opinions about domestic violence following the reform.

Keywords: Policy evaluation, Education, Gender, Inequality.

JEL classification: H43, I24, I25, I28, J01

1. Introduction

With less than six years remaining, the United Nations warns that, at the current rate, the Sustainable Development Goal 5 (SDG5)[1] on gender equality will be reached in 300 years. Most indicators on gender equality are off track from the targets set for 2030. Almost 50 percent of married women lack decision making authority about their sexual and reproductive health and rights. 1 in 3 girls aged 15 to 19 has experienced some form of female genital mutilation/cutting in the 30 countries in Africa and the Middle East.

The situation on GB Following the coronavirus pandemic, the reduction in GBV has been at a very slow pace and is a concern in most countries. Globally, the United Nations (UN) indicates that about 736 million women (about one in three) have been subject to violence[2] in 2018. The proportion of women 20-24 years who were married before age 15 decreased only by three percentage points in 15 years[3] since 2003. Similarly, the proportion of women aged 15 and older in the world who are subject to violence by their intimate partners was 14.25% in 2003 and dropped to 12.49% in 2017. In this challenging context, the international community's growing concern is that the World will be drifting more and more away from the SGD5 target. It is thus even more critical to understand the drivers of women's empowerment. These factors could be key to improve gender equality before 2030. This paper answers the following questions: What are direct and indirect effects on their empowerment? Does the spouse matter in the decision-making power?

Manser and Brown (1980), McElroy and Horney (1981), and Lundberg and Pollack (1993) demonstrated that, in theory, women have more bargaining power in their households when they have more threat points. In other words, intrahousehold decisions will reflect women's preferences if they have more opportunities and resources outside their households. Education, labor market participation, asset ownership are potential ways for a woman to gain and control resources outside her household.

In this paper, we use the Free primary education (FPE) policy of 2006 in Benin as an instrument to analyze the impact of increased schooling and learning on women's empowerment. Benin has abolished schooling fees for all children in public primary schools in October 2006. In addition, the

[1]

[2] Information from UN Women facts and figures on gender-based violence.

[3] The data is coming from the SDG tracker and available here. In the world, the average number of women age 20-24 years who were married before 15 was 8.1% in 2003 and 5% in 2018.

government took several accompanying measures, such as the construction of about 8,000 primary schools, the recruitment of about 16,000 new teachers, and the training of more than 17,000 teachers and community teachers between 2006 and 2013.[4] Our identification strategy takes advantage of the variation in the program's intensity between municipalities of the country. For our analysis of the impact of FPE 2006 on education, we use a triple difference method with variations in birth cohorts, in program intensity, and over time. The data used for this analysis come from the National Census 2002 and 2013. To evaluate the impact of education on women's empowerment, we used a double-difference method with variations in intensity and birth cohorts. The data used is the Demographic and Health Surveys 2012 and 2018. These estimations allow us to measure the impact of the reform in the medium (seven years after the reform) and the long terms (12 years after).

This paper's contributions to the existing literature are twofold. First, our paper contributes to the literature on the impact of the elimination of school fees on children's learning. Several studies have evaluated the impact of the elimination of school fees on education. Most of these studies demonstrated that the FPE significantly affected access and participation in primary education (Deininger, 2003; Grogran, 2008; Lucas and Mbiti, 2012a and b). They also showed that the elimination of school fees was generally pro-poor as it gave children from disadvantaged backgrounds access to education. Although the policy had positive effects on attendance and completion, other studies demonstrated that it did not close the gender gap in access to education (Lucas and Mbiti, 2012b; Fatoke Dato, 2022). Despite concerns about the quality of education with the elimination of school fees, only a few papers studied the impact of the FPE on children's learning. Lucas and Mbiti (2012) found that the Kenyan FPE increased access and completion and did not reduce test scores for the target group. Chicoine (2020) showed similar results in Ethiopia. The removal of school fees had a positive impact on years of schooling and literacy. However, the introduction of mother-tongue instruction had a negative impact on schooling and no impact on literacy. In the Gambia, a scholarship for girls in secondary education positively impacted participation and test scores (Blimpo et al., 2019). The large increase in enrollment with the launch of the FPE also did not significantly impact the learning of children entering school in Tanzania (Valente, 2019). Overall, these studies exposed mixed effects of the FPE on learning. Our evaluation indicates that the FPE 2006 increased schooling and literacy significantly for beneficiaries in Benin in the long term. However, in the medium term, the impact on literacy is mixed.

[4] Administrative data consolidated by the author from the Statistical Yearbooks (2000 to 2014) published by the National Institute for Statistics (INSAE).

Second, this study also contributes to the literature on women's education and empowerment. Policymakers give priority to women's education because of its potential effect on children's education and health. The assumption is that an educated woman will get qualified job opportunities and ensure decent health and education for her children. She will also have bargaining power in making decisions about her fertility and her choice of spouse. However, this assumption implies that education gives her the skills, knowledge, and autonomy to make her own decisions. The evidence to prove this assumption is limited as it is generally easier to measure the outcomes. In other words, most studies have measured the effect of education on women's empowerment through the effects on outcomes such as their fertility choice and children's health. Duflo (2012) also informs that measuring the impact of education on women's empowerment is difficult because both variables are interrelated. There are possible unobservable characteristics (ability, community background, or family) that explain that a woman is more educated or empowered than the other. An empowered woman is also more likely to decide to further/invest in her education. Samarakoon and Parinduri (2015) exploited variation in schooling due to a longer school year in Indonesia in 1978 to measure the impact of education on empowerment. The authors discovered that education increased contraceptive use and promotes health practices, but there is no evidence that education improves women's decision-making authority, asset ownership, or community participation. Our paper shows that educated women with educated partners have more bargaining power to contribute to household decisions. Our results show that the impact of education on women's empowerment is indirect in Benin through their choice of spouse. The FPE 2006 increased the probability of women choosing more educated partners. We also found that women with educated partners had a greater probability of being involved in households' decisions. We also noticed a change in opinions about domestic violence.

The article's structure is as follows: section 2 presents the FPE 2006, section 3 covers the methodology, section 4 discloses the results of the impact evaluation on education, section 5 displays the impact on empowerment, and section 6 reveals some limitations of the reform and section 7 concludes.

2. Benin's free primary education reform of 2006

In 2006, the newly elected government published an ambitious education sector development program for 2006-2015. The main goal was to reach universal primary education by 2015. The national

program sets out the government priorities such as strengthening the management of the education sector, improving learning conditions, teachers' competencies and professionalization, the increase in the supply of education, better management of human resources, and the reduction of gender and geographic disparities. (MCE, 2006).

On October 14, 2006, the government declared Free Primary Education (FPE) for all children registered in public schools in preprimary and primary education. Furthermore, the government supported this FPE with additional measures such as a large school construction program, an important recruitment drive of teachers' and training for community teachers.

2.1 Abolition of school fees

Vis-à-vis schooling costs, the FPE of 2006 was a policy to abolish school fees. Several reports confirmed that parents were still paying other types of costs such as uniforms, parent-teacher association fees, and stationaries (OCS, 2012, UNESCO-IIEP, 2014). Furthermore, CAPOD (2017) surveyed the population about the government social measures. The report found that about 90% of the individuals surveyed were informed about abolishing school fees for children in preprimary and primary education. Most people received this information by radio or television. The government also increased the subsidies[5] per child enrolled given to schools in priority zones. These subsidies started in 2000 with the compensation for schools for the enrollment of girls in rural areas. Thus, the FPE of 2006 is a scale-up of the abolition of school fees for girls in rural areas implemented over two phases in 1993 and 2000. Further details about this FPE for girls in rural areas are available in Fatoke Dato (2022). The following sections will present the methodology for the evaluation and the potential impact of this reform.

2.2 Schools construction

Regarding the school construction, the national program aimed at building 3,300 additional classrooms per year to reach universal primary education by 2015 (MCE, 2006). The target was to reach a retention rate of 100% in 2015 from 54% in 2005. The school construction could also help cope with the increased demand for education. Although the target on school construction was not

[5] According to OCS (2012) and MCE (2006), the subsidies provided to schools per child with FPE 2006 was 15,000CFA Francs for priority zone 1(difficult access to schools and disadvantaged), 10,000 CFA Francs for priority zone 2 (difficult access to schools), 5,000 CFA Francs priority zone 3 (disadvantaged) and 0 CFA Francs for non-priority zones. The government also provided incentives to teachers deployed in these priority areas. For the previous FPE of 2000, the subsidies were 3,000 CFA Francs per girl enrolled.

met, there was an important increase in schools. Using administrative data, we estimate that the government built about 6,000 schools between 2006 and 2013 to support this policy of the abolition of school fees. This represents about 2.83 new schools for 1000 children between 5 and 14 years old in primary schools in 2006. The average class size also decreased from 51 in 2005 to 44 in 2006 and 41 in 2013. It likely shows an improvement in learning conditions at the national level.

2.3 Teachers recruitment drive

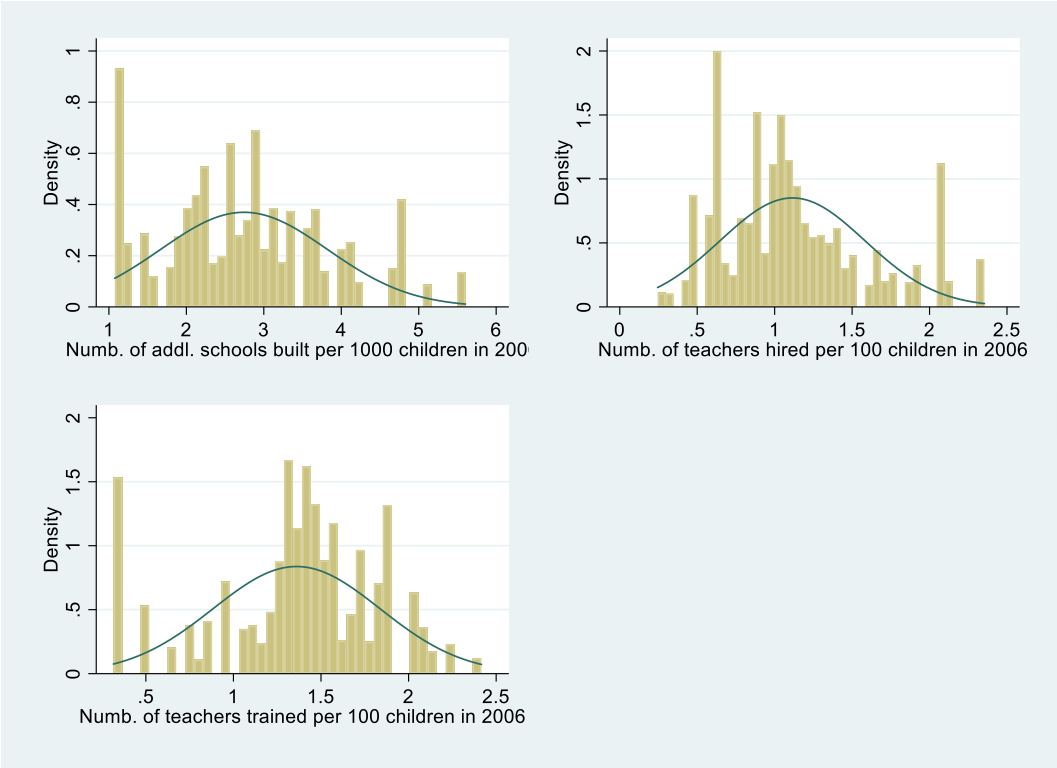
Concerning the teachers' recruitment and training, the target of the national program was a decline in the pupils/teacher ratio from 50 to 40 from 2005 to 2015 and an improvement in teachers' competence and professionalization. An official government report[6] informs that about 20,645 teachers were trained or hired between 2006 and 2010 (OCS, 2012). Also, 9,910 community teachers previously paid by parents were trained and contracted by the government[7] (OCS, 2012, UNESCO-IIEP, 2014). In addition, new student teachers from national training institutes were hired as contract teachers. The reform also included the training of schools' principals, newly contracted teachers, school inspectors, and the distribution of textbooks in the early grades (OCS, 2012). Based on the administrative data, we estimate that the government recruited about 16,000 teachers between 2006 and 2013 to support this policy of the abolition of school fees. In terms of learning conditions, the recruitment of teachers has helped with the decline in the pupils/teacher ratio from 50 in 2005 to 44 in 2006 and stayed around 44 until 2013. Primary schools' enrollment almost doubled from 1.350 to 2.060 million pupils during the same period. The World Bank Development Indicators confirmed that the Gross Enrollment Rate (GER) in the primary was steady between 2005 and 2007 (Graph 1). It increased a lot by ten percentage points between 2006 and 2008, which is the biggest increase in the period. It reached 128% in 2013, while the pupil teachers/ratio decreased to reach 43 (graph 1). Despite the upsurge in enrollment, the government maintained the pupils/teacher ratio to an adequate level. According to the administrative data, the most important improvement was in the pupil/qualified teachers' ratio, which declined from 97 in 2006 to 65 in 2013 (about 16,000 teachers were trained).

[6] The National Report is titled "*Impact de la gratuité de l'enseignement maternel et primaire sur la pauvreté, le social et les OMD*". It was produced in 2012 by "*Observatoire du Changement Social*" which is a division of the Benin Ministry of Development and Economic Analysis.

[7] According to an official government decree n° 2007-592 of December 31, 2007, 9,900 primary education community teachers were supposed to be trained and contracted.

Graph 1:

[Graph 1 here]



3. Methodology

The section specifies the identification strategies, data, descriptive statistics, and estimation procedures.

3.1 Identification strategies

The main challenge of this evaluation is to identify the impact of the FPE of 2006, given that it targeted all children. Our identification strategy is based on Lucas and Mbiti (2012a, b) and Chicoine (2019, 2020). We want to take advantage of the temporal and geographic disparities in the implementation of this national policy. We will start by estimating the magnitude of the impact of the FPE 2006 which is inversely related to the fraction of children in schools at the time of the reform. The primary school-going age in Benin is between six and 12 years old. Primary education comprises six grades. Thus, we consider that children born between 1994 and 2000 are in the target group which

are the main beneficiaries of the reform. So, if we consider that the maximum effect for a group of children that never attended school before the reform is the product of the six grades that each child can complete and the fraction of children that never attended school (6*fg0). For the group of children already in grade 1, the effect of the reform is the product of the five additional grades they can complete due to the FPE and the fraction of children that dropout in grade 1 (1*fg1). Consequently, the magnitude of the effect in the municipality m is the sum of potential effects from grade zero to six:

$$M_m = \sum_{g=0}^{6} (6 - g) * f_{mg} \ \ (equation\ 1)$$

Equation 1 does not take into consideration birth cohorts. Given the possibility of overage or underage enrollment, we need to adjust the magnitude of the effect per municipality. We expand our target group to individual born between 1988 and 2004 (age 2 to 16 in 2006). According to the National Census 2013, children born between 1988 and 1993 (age 13 to 18 in 2006) are still attending primary education. This group could have benefitted from the FPE 2006. However, less than one percent of individuals 19 years old and above still attend primary education (further details in appendix 1).

Table 1:

Birth year	Age	grade	FPE	Birth year	Age	grade	FPE
2000	0			2000	1		
2001	1			2001	2		
2002	2			2002	3		
2003	3			2003	4		
2004	4			2004	5		
2005	5			2005	6	1	
2006	6	1	Yes	2006	7	2	Yes
2007	7	2	Yes	2007	8	3	Yes
2008	8	3	Yes	2008	9	4	Yes

2009	9	4	Yes	2009	10	5	Yes
2010	10	5	Yes	2010	11	6	Yes
2011	11	6	Yes	2011	12		

Source: Author

If we consider the different birth cohorts, we have the following magnitudes:

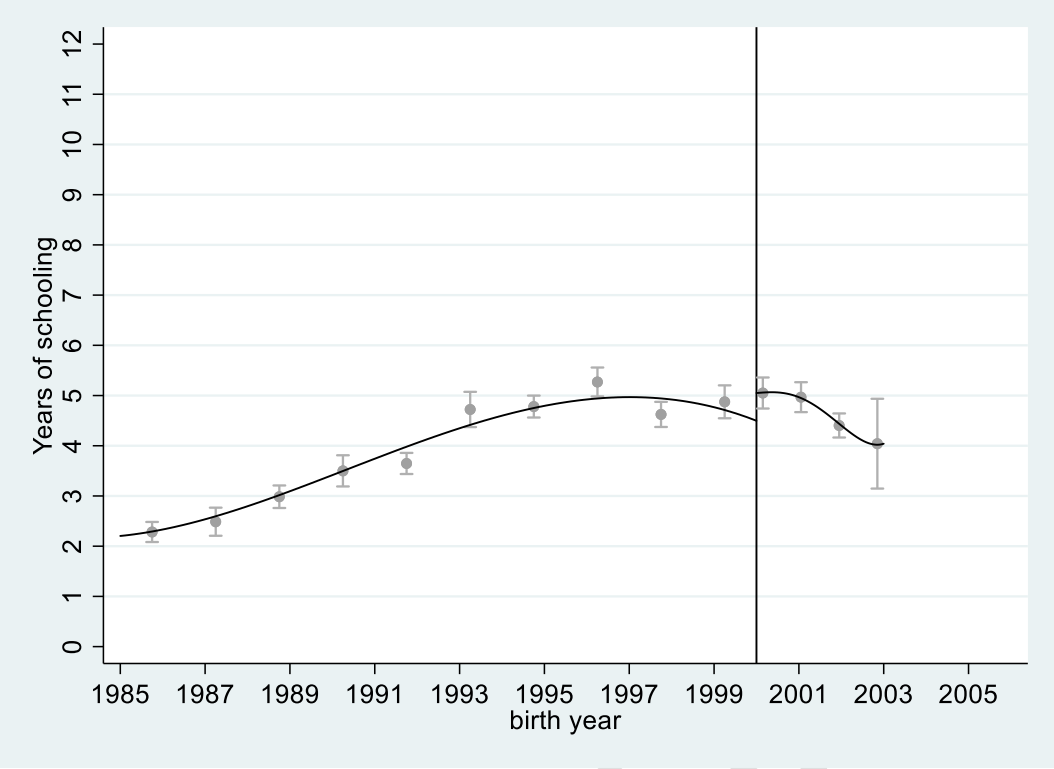
$$M_{my} = \sum_{g=0}^{6} (6-g) * f_{mg} \ \ if \ y \geq 2000$$

$$M_{my} = \sum_{g=(1999-y)}^{6} (6-g) * f_{mg} \ \ if \ 1988 \leq y \leq 1999$$

$M_{my} = 0 \ if \ y \leq 1988$ (equation 2)

Therefore, Equation 2 considers the variation in birth cohorts and municipalities to capture the magnitude of the effect of the abolition of schools.

Graph 2



Source: Author based on National Census 2002 and DHS 2012, 2018

Education by age in high and low intensity areas

As such, these supplementary measures were demand driven. To measure the impact of these reforms we will be using the instrumental variable that allows for endogeneity in program placement, individual participation or both. In our case, the selection of which municipalities will receive more school constructions, teachers or training depends on the population of school going age and primary school enrollments. We decided to test two potential instruments for the program placement: the literacy rate and the gender parity index in enrollment (girls' primary completion) per municipality.

3.2 Data and descriptive statistics

The data for this study is from the National Census of 2002 and 2013 produced by the National Institute for Statistics and Economic Analysis (INSAE) and published by the Minnesota Population Center. In addition, we used the Benin Demographic and Health Surveys (DHS) 2012 and 2018 to evaluate the impact of the FPE on women's empowerment. Finally, community-level data on schools' construction, teachers' recruitment, and training are administrative data produced annually by the national institute for statistics.

Table 2 presents descriptive statistics of key variables. On average, individuals in target group A have completed 4.32 years of schooling, while those in the control group have 3.50 years. About 16% of treated in the target group A are literate while 0.5% of individuals in the control group are. About 50% of the individuals in each group are female. Also, around 50% of individuals in each group live in a rural area. But less than 20% of individuals live in a household with a female household head in these groups. About 45% of individuals live in a household where the head is literate. For target group A, 51% of individuals are Christian, 26% are Muslim, and 16% are from other religions. It is similar for other groups. In the main, the structure of these groups is largely comparable when considering education, households, and region variables.

Table 2: Descriptive statistics of treatment and control groups

[Table 2 here]

3.3 Estimation procedure

We use the ordinary least squares to estimate equation 3 below. E is the education variable. The education variables of interest in this analysis are years of schooling completed and literacy. Our focus is what children achieved in primary education because the main goal of the reform was to reach UPE. *X* is a vector of individual (gender, age, and age square) and household characteristics (household head's literacy level, gender, and age, religion, ethnicity…); The parameter of interest is a2, a3 and a4, which gives the impact of the abolition of school fees, the school construction, the recruitment of teachers and their training on education. The equation also includes regions' fixed effects because of the disparities across regions.

$$E = a_1 + a_2 M_{my} + a_3 Birth\_cohort + a_4 Municipalities + a_5 Years\_trend + a_6 X + v_1$$

(Equation 3)

We used Equation 3 for all estimates on women's empowerment. In this case, Y is for the outcome variables on empowerment. We used women's participation in household decisions (education, health, visits to relatives…) and opinion about domestic violence. The following sections present the summary of our estimations.

Program placement bias

4. Impact of the FPE 2006 on schooling and learning

In this section, we present the results of our estimation on the impact of the FPE 2006 on schooling and learning. The proxy variable used for schooling is the years of schooling completed, which is a good proxy to measure grade completion. The outcome variable used for learning is literacy. Literacy is the ability to read and write in a language. It is an important prerequisite for the acquisition of knowledge and competence, which is essential for a woman to make her own decision.

In general, our estimations suggest that the FPE 2006 increased significantly the years of schooling completed and literacy for target women. The causal effect is rather different depending on the level of intensity of the reform. We presented the results of the estimation by intensity level. The results presented in this section are the medium-term effects of the FPE 2006 as it is about seven years after the reform.

4.1 Impact of the school construction on schooling and learning

Overall, the estimation results indicate that the school construction increased the number of years of schooling completed for the target group A and B. This result is consistent with Duflo (2004) in Indonesia. Table 3 shows that the years of schooling completed have increased by 0.67 years of schooling for the target group A in municipalities with high intensity in school construction. But there is no significant impact on literacy. We need to keep in mind that these results are computed about seven years after the beginning of the reform. The results are the medium-term impact of the policy. It might not be enough time to capture any impact on learning. In addition, Valente (2019) found a

similar result in Tanzania. The removal of school fees improved enrollment but did not have a significant impact on learning.

Table 3: Impact of the school construction on years of schooling and literacy

[Table 3 here]

For older individuals between 13 and 18 years old (target group B), the results also indicate that the school construction has increased their years of schooling by 0.21 years. This effect is smaller compared to younger cohorts of birth which is logical. The younger cohorts are the primary targets of the reform. We provide the results of the teachers' interventions on schooling and learning in the following subsections.

4.2 Impact of the teachers' recruitment and training on schooling and learning

In general, our results indicate that the teachers' recruitment and training also increased the years of education completed for target group A (Table 4). We found a significant impact of the teachers' training on literacy but no significant impact from the recruitment.

While living in a municipality with high intensity in teachers' recruitment increased the years of schooling by 0.928 for beneficiaries, living in an area with high intensity in teachers' training increased the years of education by 0.528 for the target group (Table 4). This result implies that teachers' recruitment might have more effect on schooling than teachers' training. The effect is also similar on target group B.

Table 4: Impact of the teachers' recruitment and training on years of schooling completed and literacy

[Table 4 here]

We also noticed that literacy has significantly increased for women in the target group A. Table 4 indicates that the probability of being literate has significantly improved by 2.8% for beneficiaries in high-intensity areas for teachers' training. There is no significant impact on women living in municipalities with high intensity for teachers' recruitment. It implies that teachers' training had an impact on learning while teachers' recruitment did not.

We need to understand these results in the context of education in Benin. It is important to keep in mind that we cannot completely separate the effects of teachers' recruitment and training. Teachers

recruited attend pre-service training before starting their classes. But community teachers are not trained even though they represent the majority of the teaching force (about 2/3 according to UNESCO-IIEP 2011). UNESCO-IIEP (2014) points out that some of the community teachers do not even have the qualification to be contract teachers. In 2006, the government decided with the reform to give contracts to all community teachers and trained them. However, it was a three years in-service training for 9,900 teachers since most of them were already in classrooms. Hence, in areas where the teachers' recruitment is higher than the teachers' training, it is plausible that the government has contracted community teachers. Since the in-service training took about three years, we can understand that the teachers' recruitment might not have an impact on learning as expected. Also, in these disadvantaged communities, having a teacher in school is essential to maintain children in schools. The community might not be too selective on the competence of the teachers but ensuring that the basic conditions for learning are provided to the learners. So, our results show that in these cases, the recruitment of teachers has a stronger impact on years of schooling than teachers' training. The result is also consistent with Chin (2005), who showed in India that the redistribution of teachers across schools improved primary education completion, especially for the poor and girls.

4.3 The overall impact of the reform on schooling and learning

In the main, the results of our estimations demonstrate that beneficiaries living in areas with high intensity overall for the reform have benefitted the most of the FPE. While targeted individuals in group A completed 0.67 more years in the high-intensity areas for school construction, 0.93 in high-intensity areas for teachers' recruitment, and 0.53 in high-intensity areas for teachers training, they gained 1.13 more years in high-intensity areas for the overall reform.

Table 5: Impact of the overall reform on years of schooling completed

[Table 5]

However, there is no significant impact on literacy for beneficiaries living in areas with high intensity in the overall reform. This result suggests that among the FPE 2006 measures, mainly the teachers' training had an impact on learning in the medium term.

In summary, the reform has significantly improved years of schooling and literacy for the target population. We observed that the different interventions of the reform had different impacts on schooling and learning. While all the measures had an impact on the schooling (years of education

completed), only the teachers' training had an impact on learning. It could be just that the impact on learning cannot be captured yet in all municipalities in the medium term. But, municipalities with high intensity in teachers' training had gained on learning faster than the other areas. The estimation of the impact of the FPE on schooling and learning in the long term should help us verify this assumption. In the following section, we will also analyze the impact on women's bargaining power.

5. Impact of the FPE 2006 on women's empowerment

Our results presented in the previous section show that the FPE 2006 significantly improved schooling and learning for all. In this section, we will first check the impact on learning in the long term and on women. We want to make sure that the target women have acquired some basic knowledge to make their own decision. Then, we will analyze the impact of the reform on women's empowerment. We also conduct further analysis on indirect channels such as the partner's education and the labor market participation to better understand the channels through which the reform could improve women's empowerment.

In the following analysis, we used the DHS data, which provides more details about literacy and also the outcomes variables on empowerment. We also do not distinguish between the younger and the older target groups in this section. We included all of them in one target group. This distinction was relevant and useful mostly to analyze the heterogeneity of the impact on younger and older children in primary education completion. The following estimates are about the long-term effects of education on empowerment, so 12 years after the reform.

3.1.1. The selection bias and women empowerment (IV)

5.1 Impact of the FPE 2006 on schooling and learning with the DHS

In the context of Benin, the official language is French. The country also has eight main ethnic groups (Fon, Yoruba, Adja, Bariba, Betamaribe, Dendi, Peulh, Yoa, and Lokpa) with specific dialects. The Demographic and Health Surveys provide information on literacy, whatever the language of the respondent might be. For this analysis, we observe the impact on overall literacy, but also the ability to read "part of a sentence" or a "whole sentence." The results of our estimations are in Table 6.

Table 6: Impact of the FPE on women's literacy

[Table 6 here]

Using DHS data, our estimations in Table 6 confirm that the FPE 2006 had a significant positive impact on years of schooling completed and literacy for women in the target group and in high-intensity municipalities for the overall reform. It shows an increase by 0.84 years of schooling and by 6.6% of the probability of being literate for the same group. Like the estimates based on the Census data, the impact is the strongest on years of schooling for women living in the high-intensity areas for the overall reform. We noticed that all measures of the FPE 2006 had an impact on literacy. The school construction increased significantly the probability to be literate by 4.1%, the teachers' recruitment by 7.1%, and the teachers' training by 6%. Once again, women living in the high-intensity areas for the overall reform are not the ones that benefitted most from the impact on literacy. The teachers' recruitment and training appear to have the most effect on learning. Similarly, Michaelowa (2001) also found that the high recruitment of teachers on flexible non-civil servants' contracts was an efficient way to improve learning. The results also confirmed our assumption that the effects on learning could not be captured in all target municipalities in the medium term, but it can be in the long term.

Furthermore, the estimations indicate that it is the ability to read a "whole sentence" that has improved and not "part of a sentence," Columns 4 and 5 of Table 6 indicate that the ability of beneficiaries to read a whole sentence has increased significantly by 4.8% for these target women living in high-intensity areas. However, there is no significant effect on the ability to read part of a sentence. In the rest of the section, we focus the analysis on women's empowerment.

5.2 Does improved schooling and learning affect women's empowerment?

To measure progress on the woman's ability to make her own decisions, we used several proxies for empowerment: her contribution in making household decisions and her opinion about domestic violence. According to UN Women: "*Violence negatively affects women's general well-being and prevents women from fully participating in society. It impacts their families, their community, and the country at large. It has tremendous costs, from greater strains on health care to legal expenses and losses in productivity.*" If the woman does not acknowledge the violence toward her, she will likely not report it and continue living in the same situation. It could be damaging to her health, productivity, and participation in the community. In that

sense, it is an expression of the female's ability to value herself and reject any discrimination toward her. Even though it is not a decision, it is evidence of her mindset that could affect her decisions.

The DHS surveys provide information about these proxies of empowerment for women between 15 and 49 years old. Table 7 presents the results of our estimation.

Table 7: Impact of the FPE on women's empowerment
[Table 7 here]

Overall, our initial analysis shows mostly no significant impact of the FPE 2006 on women's participation in households' decisions or her opinions on domestic violence. For household decisions, we used several outcome variables such as the decisions on children's education, on the respondent/children's health, on visits to family relatives, on the large households' purchase, and on the use of her earnings. It is important to note that we consider that the woman has a say in the decision-making process if she makes the decisions alone or with her partner. We notice no significant impact on any of the outcomes' variables for households' decisions. Finally, on domestic violence, we used several possible justifications for domestic violence, such as the wife going out without telling her husband, neglecting the children, arguing with her husband, refusing to have sex with her husband, or burning the food. There is also no significant impact of the FPE 2006 on any of these opinions. In the following section, we analyze other variables that could affect women's empowerment.

5.3 Which other variables affect empowerment?

For the following analysis, our assumption is that education might improve empowerment through indirect channels such as the partner's education or the women's labor market participation.

5.3.1 The husband/partner level of education

For further analysis, we look at the effect of the partner's education on the target women living in municipalities with high intensity overall in the reform. As stated earlier, the literature indicates the possibility of assortative matching (Behrman and Rosenzweig 2002). In other words, there is a possibility that educated women will choose more educated partners. This decision will ultimately influence their bargaining power in the households and their lives. In the following analysis, we first try to check the assumption of assortative matching because of the reform.

Table 8: Impact of the FPE on the choice of husband
[Table 8 here]

Generally, our estimates in Table 8 column 1 indicate that there is no significant impact of the FPE 2006 on the probability of having an educated husband. However, in columns 2, 3, and 4, we analyze more specifically the effect by the level of education. Our estimates show that the likelihood of having a husband with tertiary education has increased by 4.2% for target women living in municipalities with high overall intensity. There is no significant impact of the reform on having a husband with a primary or secondary level of education.

We, therefore, analyze the impact of FPE 2006 on empowerment for women with educated partners. Table 9 demonstrates that women with educated partners have a significantly higher probability of participating in decisions about the households compared to women with "uneducated" partners. Column 4 shows a significantly higher probability (by 28.6%) for the woman to have a say in the decision to make large purchases when her husband has a tertiary education than no formal education.

Table 9: Impact of the FPE on empowerment for women with husband/partner's level of education
[Table 9 here]

There is also a significant impact of the reform on women's opinions about domestic violence. Columns 1, 2, and 3 of Table 9 indicate that having an educated partner decreases the probability of justifying domestic violence by any of the following reasons: the wife going out without telling her husband, neglecting the children, or arguing with her husband. The effect is even stronger for women whose partners have a tertiary level of education. Indeed, for these women, there is a significantly lower probability of justifying domestic violence by 16.8% for "going out without telling the husband," by 13% for "neglecting the children," and by 14.2% for "arguing with the husband." For women whose husbands have a secondary level of education, there is a significantly lower probability of justifying domestic violence by 14.1% for "going out without telling her husband" and by 12.4% for "neglecting the children."

Hence, the FPE 2006 has increased the probability of educated women to select more educated partners on the marriage market. The results also demonstrate that a partner's education influences the woman's opinion about domestic violence and her bargaining power in household decisions.

5.3.2 *Women labor market participation and empowerment*

Another indirect channel to capture the impact on women's empowerment could be her participation in the labor market. The increase in schooling and learning could also improve women's participation in the labor market. They could thus contribute to the household's income and wealth, which might give them higher bargaining power. We will try to verify this assumption in this section. For the labor market participation, we used a common proxy variable available in the DHS surveys. It is the probability of working currently or in the last 12 months. We also analyze the impact on the type of payment the woman receives for her work: no payment, cash only, or cash and kind.

Table 10: Impact of the FPE on labor market participation
[Table 10 here]

The results of our estimations in Table 10 prove that the FPE 2006 did not improve the labor market participation for the beneficiaries. We don't find any significant impact on any of the variables with the main equations. The results could be because the evaluation impact is just 12 years after the reform. Most individuals in the beneficiaries' group who were between 6 and 18 years in 2006 are between 18 and 30 years old in 2018. It is possible that the impact on labor market participation could be detected later on during their lifetime.

Since there is no impact on labor market participation, we don't estimate the impact on women's empowerment. Nevertheless, we checked whether this impact is the same for all age groups. The other estimations in Table 10 indicate that there is a mixed effect on labor market participation by age group. On the probability of currently working, we only find a significant effect on girls aged 10 and 14 at the time of the reform. Individuals aged 10 at the time of the reform had a higher probability of working by 14.5%, while individuals aged 14 had a lower probability of working. On the payment received for the job, we also found a significant impact of individuals aged seven, 10, 12, 15, and 16. For instance, the likelihood of not being paid has significantly decreased by 6.4% and 7.1% for individuals aged 15 and 16 at the time of reform.

In summary, our long-term estimates established that the FPE 2006 improved schooling and learning but no direct impact on women's empowerment. We rather found an impact of the reform on women's empowerment through their husbands/partners' education. The results indicated that there

is a higher probability for educated women to select a more educated husband. Through this channel, we also show that women whose husband/partner has a tertiary level of education had a higher probability of contributing to the household's decisions and of not justifying domestic violence for any reason. We also verify the assumption of another indirect channel through her labor market participation. We found no significant on the beneficiaries' labor market participation. In the final section, we analyze some factors that still determine women's empowerment despite the reform.

6. The limitations of the reform

The literature indicates that poverty and cultural norms could impede on women's empowerment (More details in Duflo, 2012; Jayachandran, 2015). In this section, we verify whether these factors still influence empowerment following the FPE 2006. We analyze the effect of the household wealth, ethnicity, and religion on the women's probability to participate in households' decisions or on their opinion about domestic violence.

6.1 What is the effect of the household wealth?

In the main, our results prove that the household wealth is still a determinant of women's empowerment. Our estimates in Table 11 indicate that the level of wealth has an effect on target women's participation in households' decisions. When analyzing households decisions for target women from the poorest quintile to the richest ones, Column 2, 3, 4, and 5 show a significant increase in having a say in decisions about her children health, visits to family, large purchases, and the use of her earnings for women in wealthier households. For instance, on the use of her earnings, the probability that she contributes to the decision-making process increased significantly by 20% for the poorer, by 30.2% for the middle, by 24.1 for the richer, and 28% for the richest quintile of wealth compared to the poorest quintile.

Table 11: Impact of the FPE on empowerment for married women by the level of wealth
[Table 11 here]

Living in a wealthy household also influences women's opinions on domestic violence. Columns 1, 2 of Table 11 display a significant decrease in the probability of justifying domestic violence for the following reasons: "going out without telling the husband," "neglecting the children." For instance,

the probability of justifying domestic violence by "going out without telling the husband" decreased by 12.8% for the poorer, 21.9% for the middle, by 16.7% for the richest quintile of wealth compared to the poorest quintile.

6.2 *What is the effect of cultural norms on women's empowerment?*

Cultural norms are also potential barriers to women's empowerment. Education and awareness could be pivotal in improving these gender norms. In this analysis, we investigate whether increasing women's education changes the gender norms and the preconceived notions on gender roles. Using the same questions of decisions for households and opinions about domestic violence, we look at the impact of the reform on target women depending on their ethnicity and religion. Ethnicity and religion are good proxies for cultural norms frequently used in the literature.

Benin has eight main ethnic groups (Fon, Adja, Yoruba, Bariba, Betamaribe, Dendi, Peulh, Yoa, and Lokpa) and three main religions (Christianism, Islam, and traditional religion). As explained in Fatoke Dato (2022), there are some ethnic groups and religions with less conservative views about gender than others. The paper demonstrates that the main ethnic groups (Fon, Yoruba, and Adja) have less conservative's views on gender norms compared to the others. They also represent the largest ethnic group with about 60% of the population (National Census, 2013). Christians are less conservative on gender roles than others as well. Thus, our estimates try to distinguish the impact of the reform on decisions and opinions for women in these groups.

Table 12: Impact of the FPE on empowerment for married women by ethnicity
[Table 12 here]

Table 12 present a significant increase in the probability to contribute to the household's decisions for women of ethnic groups Adja and Yoruba compared to the other ethnic group. Indeed, the probability for target women to have a say in decisions about their children education increased by 14.6% for Adja and 11.8% for Fon. There is also a significant increase in the probability of the target women having a say in decisions about their children's health by 15.4% for Adja and 12.2% for Fon. The results are similar for decisions about the woman's earnings. We also notice no significant difference in the impact by religious groups or on opinions about domestic violence.

Finally, the FPE 2006 had a positive impact on learning for target women. However, our estimates do not show any significant direct impact on women's empowerment. The impact on empowerment was through channels such as their husband's education, household wealth, and ethnicity.

Conclusion

Our study aimed at evaluating the impact of education on women's empowerment. We used the variations in the program intensity of Benin's FPE 2006 as an instrument to measure the impact. As a reminder, with the elimination of school fees, the government implemented several accompanying measures, including the construction of about 6,000 schools, the recruitment of 16,000 teachers, and training of 20,644 teachers and 9,910 community teachers between 2006 and 2013. The reform was national in scope and a scale-up of the previous FPE 2000 aimed only at girls in rural areas (more details in Fatoke Dato, 2022). Based on this evaluation, country-level stakeholders can contemplate the following policy considerations:

A free education policy can improve students' access, retention, and learning with the right complementary measures. The quantity-quality trade-off has been discussed as a possible issue of the elimination of school fees. Several authors demonstrated that the policy is pro-poor as it allows access to education for vulnerable children (Deininger, 2003). However, the surge in enrollments can ultimately lead to poor quality of education with an increase in pupils/teacher ratio or in the number of pupils per classroom in good conditions. The likely outcome of this overcrowding of schools could be poor learning. In the case of Benin, we found that the policy has been designed to remove one barrier to education access through schooling fees and improve learning conditions. The design of the policy was critical to improving both retention and learning. We noticed that the target population stayed on average 1.081 more years in schools in high-intensity areas for the overall reform. The impact of the reform decreased over time as estimates with the DHS data showed an increase by 0.84 years for women in the same target group 12 years after the reform. But the impact on literacy increased over time. The probability of being literate was 2.8% six years after the reform but increased significantly by 6.6% 12 years after the reform.

Another important point of this paper is the differentiated impact of learning inputs in the acquisition of knowledge. Besides the difference in the impact of the policy due to the program intensity, this paper showed that some inputs had more impact on schooling and learning. For instance, on years of schooling

completed, the results showed that the target population remained longer in schools by 0.59 for those in municipalities with high-intensity in school construction, 0.44 for those in municipalities with high-intensity in teachers recruitment, 0.49 in municipalities with high-intensity in teachers training. But the mix of all interventions usually had the stronger impact overall. Similarly, on learning, our estimates indicate an increase for women in the target group by 4.1% for the high-intensity area in school construction, 7.1% in the high-intensity area for teachers' recruitment, and 6% in the high-intensity area for teachers training. These results imply that in areas where more progress has been made on schools' construction, children usually stayed longer in schools. But for improved literacy, it appears that teachers' training and recruitment matter the most. Thus, given the budget constraint, policymakers could adjust the design of their reform depending on their objectives. But this suggests that all learning inputs play an important role in the process of improving both retention and learning. It will be necessary to find the right balance for equitable access and improved learning.

Even though education might not directly lead to an increase in empowerment, it indirectly affects woman empowerment through her choices of partner. Our analysis reveals that the improvement in education is not sufficient in itself to empower women in Benin. As a reminder, Benin is a context where gender norms are still prominent. However, one advantage of education is that it gives the woman the possibility to choose an educated partner, which is evidence of more empowerment. Our evaluation shows that women in the target population had a higher probability of having a partner with a tertiary level of education by 4.2%. We noticed that the partner's education is a significant determinant in giving women more bargaining power in their households. It confirms the assumption of assortative mating. With educated partners, women in the target group had a higher probability of contributing to the decision-making process about the households. We also observed a change in their opinion about domestic violence. There was a significant decrease in the probability of justifying domestic violence for educated women whose partners had a secondary or tertiary level of education than no formal education.

Finally, the study also points out that socio-economic factors and cultural norms are persistent and will need to be remedied to improve women's empowerment. Another factor that contributed to women's empowerment in the target population was the household's wealth. We found that women in wealthier households had a higher probability of partaking in household decisions such as their children's health, visits to family, large purchases, and the use of their earnings than those in the poorest ones. There was also a significant difference in their opinion about domestic violence compared to women in the poorest ones. The evaluation shows that gender norms also influence the impact that education could have on

women's empowerment. The results showed a significant increase in empowerment for women in less conservative ethnic groups than others.

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Tables

Table 1: Means of municipality level variables by FPE 2006 intensity levels.

	High intensity		**Low intensity**	
	Mean	Std. Dev.	Mean	Std. Dev.
Intensity in schools' construction				
Number of schools built per 1000 children between 5-14 years old	2.589	1.409	1.392	0.370
Intensity in teachers' recruitment				
Number of teachers recruited per 100 children between 5-14 years old	1.436	1.014	0.518	0.208
Intensity in teachers training				
Number of new teachers trained per 100 children between 5-14 years old	1.277	0.166	0.746	0.223
Overall intensity				
Number of schools built per 1000 children between 5-14 years old	2.906	1.976	1.523	0.474
Number of teachers recruited per 100 children between 5-14 years old	1.701	1.408	0.616	0.311
Number of new teachers trained per 100 children between 5-14 years old	1.318	0.210	0.819	0.273

Source: Author based on administrative data from 2005 to 2013 and Census 2002, 2013

Table 2: Descriptive statistics of the treatment and control groups

Variables	Cohorts born between 1994-2000		Cohorts born between 1988-1993		Older cohorts born between 1988-1967	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Education variables						
Years of schooling completed	4.325	4.628	4.551	5.046	3.503	4.714
Literacy	0.158	0.364	0.135	0.342	0.050	0.219
Individual characteristics						
Age	15.411	5.664	21.955	5.584	36.847	5.515
Female	0.512	0.500	0.537	0.499	0.505	0.500
Household characteristics						
Rural	0.553	0.497	0.501	0.500	0.497	0.500
Household Head's (HH) age	44.735	15.900	42.023	15.987	43.039	12.305
Female HH	0.179	0.383	0.159	0.365	0.142	0.350
HH is literate	0.416	0.493	0.469	0.499	0.482	0.500
Religion						
Muslim	0.263	0.441	0.253	0.434	0.239	0.426
Christian	0.515	0.500	0.544	0.498	0.527	0.499
Other	0.167	0.373	0.150	0.357	0.175	0.380
Regions						
Alibori	0.090	0.287	0.075	0.263	0.031	0.173
Atacora	0.098	0.298	0.074	0.262	0.037	0.189
Atlantique	0.114	0.318	0.111	0.314	0.052	0.222
Borgou	0.117	0.321	0.095	0.294	0.040	0.196
Collines	0.109	0.312	0.092	0.290	0.043	0.203
Couffo	0.089	0.285	0.067	0.251	0.030	0.171
Donga	0.088	0.283	0.077	0.266	0.032	0.176
Littoral	0.104	0.305	0.130	0.336	0.074	0.262
Mono	0.094	0.292	0.078	0.269	0.037	0.188
Oueme	0.120	0.325	0.121	0.326	0.054	0.227
Plateau	0.121	0.326	0.109	0.312	0.050	0.219

Zou	0.083	0.277	0.074	0.261	0.034	0.182
Observations	626,850		626,850		626,850	

Source: Author based on National Census 2002, 2013.

Table 3: Impact of the school construction on years of schooling and literacy

	Years of schooling completed	Literacy
VARIABLES	OLS (1)	OLS (4)
Treatment group: individuals born 1994-2000		
Control group: individuals born 1969-74		
Dummy for target group A	1.410***	0.396***
	(0.19)	(0.03)
Dummy for 2013	10.078***	1.163***
	(0.44)	(0.05)
Target group A*2013	-1.275***	-0.659***
	(0.25)	(0.03)
Dummy for high intensity area for construction	0.240***	0.021**
	(0.08)	(0.01)
Target group A*High intensity in construction	0.029	0.014
	(0.08)	(0.01)
High intensity in construction*2013	0.095	0.036***
	(0.10)	(0.01)
Target group A*High intensity in construction*2013	0.668***	0.003
	(0.10)	(0.01)
Other control variables	Yes	Yes
Observations	127633	125609
R-square	0.346	0.288

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender and literacy level, as well as categorical variables for region, religion and ethnicity. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on National Census 2002 and 2013

Table 4: Impact of the teachers' recruitment and training on years of schooling and literacy

VARIABLES	Years of schooling completed	Literacy
Equations on teachers' recruitment		
	OLS (1)	OLS (2)
Treatment group: individuals born 1994-2000 *Control group: individuals born 1969-74*		
Dummy for target group A	1.403***	0.389***
	(0.19)	(0.03)
Dummy for 2013	10.149***	1.165***
	(0.45)	(0.05)
Target group A*2013	-1.362***	-0.661***
	(0.26)	(0.03)
Dummy for high intensity area for teachers' recruitment	0.352***	0.040***
	(0.07)	(0.01)
Target group A*High intensity in teachers' recruitment	-0.003	0.031***
	(0.08)	(0.01)
High intensity in teachers' recruitment*2013	-0.051	0.013
	(0.10)	(0.01)
Target group A*High intensity in teachers' recruitment*2013	0.928***	0.017
	(0.10)	(0.01)
Equations on teachers' training		
	OLS (3)	OLS (4)
Dummy for high intensity area for teachers' training	0.114*	0.013
	(0.07)	(0.01)
Target group A*High intensity in teachers' training	0.100	0.017
	(0.07)	(0.01)
High intensity in teachers' training*2013	0.029	0.005
	(0.09)	(0.01)
Target group A*High intensity in teachers' training*2013	0.528***	0.028**
	(0.10)	(0.01)
Equations on teachers' recruitment		
Other control variables	Yes	Yes
Observations	127633	125609
R-square	0.348	0.289
Equations on teachers' training		
Other control variables	Yes	Yes

Observations	127633	125609
R-square	0.344	0.287

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender and literacy level, as well as categorical variables for region, religion and ethnicity. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on National Census 2002 and 2013

Table 5: Impact of the overall reform on years of schooling completed and literacy for women born 1994-2000

	Years of schooling completed	Literacy
VARIABLES	OLS (1)	OLS (4)
Treatment group: individuals born 1994-2000		
Control group: individuals born 1969-74		
Dummy for target group A	1.450***	0.396***
	(0.19)	(0.03)
Dummy for 2013	10.111***	1.167***
	(0.44)	(0.05)
Target group A*2013	-1.280***	-0.658***
	(0.25)	(0.03)
Dummy for high intensity overall	0.611***	0.051***
	(0.08)	(0.01)
Target group A*High intensity in overall	-0.265***	0.021
	(0.09)	(0.01)
High intensity in overall*2013	-0.025	0.032**
	(0.12)	(0.01)
Target group A*High intensity in overall*2013	1.126***	-0.000
	(0.12)	(0.02)
Other control variables	Yes	Yes
Observations	127633	125609
R-square	0.348	0.288

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender and literacy level, as well as categorical variables for region, religion and ethnicity. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on National Census 2002 and 2013

Table 6: Impact of the FPE on women's schooling and literacy

	Years of schooling	Literacy	Respondent is able to read part of a sentence	Respondent is able to read a whole sentence
VARIABLES	OLS (1)	OLS (2)	OLS (3)	OLS (4)
Treatment group: individuals born 1988-2000				
Control group: individuals born 1969-1974				
High intensity overall	-0.432**	-0.024	0.000	-0.026
	(0.17)	(0.02)	(0.01)	(0.02)
Target group	3.235***	0.318***	0.012*	0.306***
	(0.10)	(0.01)	(0.01)	(0.01)
Target group *High intensity overall	0.839***	0.066**	0.023	0.048*
	(0.22)	(0.03)	(0.02)	(0.03)
Other control variables	Yes	Yes	Yes	Yes
Observations	12976	12976	12976	12976
R-square	0.260	0.207	0.0126	0.198

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region, religion and ethnicity. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 7: Impact of the FPE on women's empowerment

Decisions about the households (The respondent is the main decision maker about the following decisions)					
VARIABLES	Education of children	Respondent's health/health of her child	Visits to family or relatives)	Large household purchases	How to spend respondent's earnings
Treatment group born 1988-2000					
Control group born 1969-1974					
High intensity overall	0.014*	0.015*	0.021	0.028	0.036
	(0.01)	(0.01)	(0.03)	(0.03)	(0.03)
Target group	-0.097***	-0.095***	-0.382***	-0.351***	-0.387***
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Target group *High intensity overall	0.005	0.003	-0.041	-0.057*	-0.042
	(0.01)	(0.01)	(0.03)	(0.03)	(0.03)
Opinion about domestic violence (The respondent thinks wife beating is justified in any of the following reasons)					
VARIABLES	Wife goes out without telling husband	Wife neglects the children	Wife argues with husband	Wife refuses to have sex with husband	Wife burns the food
High intensity overall	-0.016	-0.000	-0.014	-0.007	-0.038**
	(0.02)	(0.02)	(0.02)	(0.02)	(0.02)
Target group	-0.031***	-0.018*	-0.018**	-0.013*	-0.019**
	(0.01)	(0.01)	(0.01)	(0.01)	(0.01)
Target group *High intensity overall	0.015	-0.001	0.006	-0.011	0.025
	(0.02)	(0.02)	(0.03)	(0.02)	(0.02)
Equations on household decisions					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	12976	12976	12976	12976	12976
R-square	0.801	0.804	0.158	0.126	0.189
Equations on domestic violence					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	12745	12835	12846	12795	12843
R-square	0.0900	0.0682	0.0593	0.0366	0.0344

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 8: Impact of the FPE on the choice of husband

VARIABLES	Likelihood to have an educated husband	Likelihood to have a husband with primary education	Likelihood to have a husband with secondary education	Likelihood to have a husband with tertiary education
	OLS (1)	OLS (2)	OLS (3)	OLS (4)
Treatment group: individuals born 1988-2000 *Control group: individuals born 1969-1974*				
High intensity overall	0.022	-0.009	0.046*	-0.016
	(0.03)	(0.03)	(0.03)	(0.01)
Target group	0.100***	0.022*	0.047***	0.031***
	(0.01)	(0.01)	(0.01)	(0.01)
Target group *High intensity overall	0.054	0.027	-0.015	0.042**
	(0.03)	(0.03)	(0.03)	(0.02)
Other control variables	Yes	Yes	Yes	Yes
Observations	7951	7951	7951	7951
R-square	0.218	0.0583	0.0679	0.0602

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region, religion and ethnicity. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 9: Impact of the FPE on empowerment for women by the husband/partner's level of education

Decisions about the households (The respondent is the main decision maker about the following decisions)					
VARIABLES	Education of children	Respondent's health/health of her child	Visits to family or relatives)	Large household purchases	How to spend respondent's earnings
Treatment group: individuals born 1988-2000					
Control group: individuals born 1969-1974					
Target group *High intensity overall*Partner with primary education	-0.002	-0.003	-0.008	0.068	0.080
	(0.01)	(0.01)	(0.09)	(0.10)	(0.09)
Target group *High intensity overall*Partner with secondary education	0.005	0.003	0.038	0.105	-0.009
	(0.01)	(0.01)	(0.08)	(0.09)	(0.09)
Target group *High intensity overall*Partner with tertiary education	-0.032	-0.044	0.121	0.286*	0.125
	(0.02)	(0.03)	(0.16)	(0.17)	(0.14)
Opinion about domestic violence (The respondent thinks wife beating is justified for any of the following reasons)					
VARIABLES	Wife goes out without telling husband	Wife neglects the children	Wife argues with husband	Wife refuses to have sex with husband	Wife burns the food
Target group *High intensity overall*Partner with primary education	-0.052	0.015	-0.010	0.043	0.069
	(0.07)	(0.08)	(0.08)	(0.06)	(0.07)
Target group *High intensity overall*Partner with secondary education	-0.141*	-0.124*	-0.062	-0.034	-0.061
	(0.07)	(0.07)	(0.07)	(0.05)	(0.06)
Target group *High intensity overall*Partner with tertiary education	-0.168***	-0.130**	-0.142**	0.002	-0.076
	(0.05)	(0.06)	(0.06)	(0.05)	(0.05)
Equations on households' decision					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	7951	7951	7951	7951	7951
R-square	0.960	0.962	0.0374	0.0832	0.143
Equations on domestic violence					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	7845	7894	7900	7892	7896
R-square	0.102	0.0732	0.0697	0.0428	0.0313

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 10: Impact of the FPE on married women's labor market participation

VARIABLES	Currently working	Not paid	Paid in cash only	Paid in cash and kind
Treatment group born 1988-2000 *Control group born 1969-1974*				
	Main estimations			
Target group *High intensity overall	-0.032	-0.021	-0.010	0.014
	(0.02)	(0.02)	(0.03)	(0.02)
	Other estimations			
High intensity overall*age 6	0.055	0.064	0.050	-0.037
	(0.22)	(0.19)	(0.23)	(0.03)
High intensity overall*age 7	0.053	0.153	-0.034	-0.054*
	(0.13)	(0.14)	(0.14)	(0.03)
High intensity overall*age 8	-0.028	0.031	-0.002	-0.048
	(0.12)	(0.09)	(0.11)	(0.03)
High intensity overall*age 9	-0.021	-0.044	0.081	-0.048
	(0.09)	(0.05)	(0.09)	(0.04)
High intensity overall*age 10	0.145**	-0.070	0.209**	0.004
	(0.07)	(0.06)	(0.09)	(0.05)
High intensity overall*age 11	-0.037	0.013	0.032	-0.028
	(0.07)	(0.06)	(0.08)	(0.04)
High intensity overall*age 12	-0.037	-0.040	-0.067	0.124*
	(0.07)	(0.04)	(0.07)	(0.07)
High intensity overall*age 13	-0.064	-0.006	-0.021	-0.018
	(0.07)	(0.04)	(0.08)	(0.04)
High intensity overall*age 14	-0.105*	-0.044	-0.037	0.010
	(0.06)	(0.04)	(0.07)	(0.04)
High intensity overall*age 15	0.018	-0.064**	0.042	0.036
	(0.05)	(0.03)	(0.06)	(0.04)
High intensity overall*age 16	-0.025	-0.071***	0.032	0.020
	(0.05)	(0.03)	(0.06)	(0.04)
High intensity overall*age 17	-0.043	-0.029	0.018	-0.035
	(0.04)	(0.03)	(0.06)	(0.03)
High intensity overall*age 18	0.055	-0.021	0.096	-0.025
	(0.05)	(0.03)	(0.06)	(0.04)
	Main estimations			
Other control variables	Yes	Yes	Yes	Yes
Observations	8777	8777	8777	8777
R-square	0.0824	0.0109	0.0388	0.00652
	Other estimations			
Other control variables	No	No	No	No
Observations	8777	8777	8777	8777
R-square	0.0341	0.0915	0.144	0.0815

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region, type of place of residence, survey years. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 11: Impact of the FPE on empowerment women by level of wealth

Decisions about the households (The respondent is the main decision maker about the following decisions)					
VARIABLES	Education of children	Respondent's health/health of her child	Visits to family or relatives)	Large household purchases	How to spend respondent's earnings
Treatment group born 1988-2000 *Control group born 1969-1974*					
Target group *High intensity overall*being in the poorer quintile	0.077	0.085*	0.342***	0.343***	0.200*
	(0.05)	(0.05)	(0.11)	(0.11)	(0.12)
Target group *High intensity overall*being in the middle quintile	0.053	0.056	0.372***	0.370***	0.302***
	(0.03)	(0.04)	(0.11)	(0.10)	(0.12)
Target group *High intensity overall*being in the richer quintile	0.018	0.025	0.272**	0.381***	0.241**
	(0.04)	(0.04)	(0.11)	(0.10)	(0.11)
Target group *High intensity overall*being in the richest quintile	0.048	0.045	0.367***	0.345***	0.280**
	(0.04)	(0.04)	(0.11)	(0.10)	(0.11)
Opinion about domestic violence (The respondent thinks wife beating is justified in any of the following reasons)					
VARIABLES	Wife goes out without telling husband	Wife neglects the children	Wife argues with husband	Wife refuses to have sex with husband	Wife burns the food
Target group *High intensity overall*being in the poorer quintile	-0.089	-0.188**	-0.057	-0.056	-0.045
	(0.08)	(0.09)	(0.09)	(0.08)	(0.07)
Target group *High intensity overall*being in the middle quintile	-0.128*	-0.061	0.021	0.030	-0.020
	(0.07)	(0.08)	(0.08)	(0.06)	(0.06)
Target group *High intensity overall*being in the richer quintile	-0.219***	-0.166**	-0.123	-0.052	-0.059
	(0.07)	(0.08)	(0.09)	(0.06)	(0.07)
Target group *High intensity overall*being in the richest quintile	-0.167**	-0.151*	-0.041	0.004	-0.042
	(0.07)	(0.08)	(0.08)	(0.06)	(0.06)
Equations on household decisions					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	12976	12976	12976	12976	12976
R-square	0.801	0.805	0.163	0.131	0.196
Equations on domestic violence					
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	12745	12835	12846	12795	12843
R-square	0.0950	0.0725	0.0631	0.0410	0.0379

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region, type of place of residence, survey years. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Table 12: Impact of the FPE on empowerment on women by ethnicity and religion

Decisions about the households (The respondent is the main decision maker about the following decisions)					
VARIABLES	Education of children	Respondent's health/health of her child	Visits to family or relatives)	Large household purchases	How to spend respondent's earnings
Treatment group born 1988-2000 *Control group born 1969-1974*					
Target group *High intensity overall*Being Adja	0.146***	0.154***	-0.017	-0.049	0.239**
	(0.05)	(0.05)	(0.13)	(0.13)	(0.12)
Target group *High intensity overall*Being Yoruba	0.094	0.078	-0.177	-0.401**	0.084
	(0.06)	(0.06)	(0.16)	(0.16)	(0.15)
Target group *High intensity overall*Being Fon	0.118***	0.122***	0.048	0.015	0.348***
	(0.04)	(0.04)	(0.13)	(0.13)	(0.11)
Target group *High intensity overall*Christian	0.012	0.001	-0.014	-0.055	-0.001
	(0.02)	(0.02)	(0.09)	(0.08)	(0.07)
Target group *High intensity overall*Muslim	0.033	0.029	-0.046	-0.054	0.129
	(0.04)	(0.04)	(0.11)	(0.10)	(0.10)
Other control variables	Yes	Yes	Yes	Yes	Yes
Observations	12976	12976	12976	12976	12976
R-square	0.802	0.806	0.165	0.131	0.195

Robust standard errors in parentheses adjusted for clustering at the cluster level. The other variables are child's age and gender, household head's age, gender, as well as categorical variables for region, type of place of residence, survey years. *** Significant at 1%, ** Significant at 5%, *Significant at 10%.

Source: Author's own computations based on Benin Demographic Households Survey 2012-2018

Data availability statement

The data supporting the findings of this study are openly available on the following: Demographic and Health Survey, Benin National Census.