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# Poverty and Gender Perspective in Productive Projects for Rural Women in Mexico

## Impact Evaluation of a Pilot Project

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The objective of this study is to evaluate the impact of a pilot study that promoted productive and capacity-building activities among deprived rural women of Mexico. The evaluation design is observational; 1,278 women are interviewed, and the comparison group is estimated by propensity score matching. The results show a positive impact on the carrying out of agricultural activities, in the autonomy of women in decision making, as does their perception of their role in the household. However, the project does not decrease the number of hours set aside for household chores or improve the women's technical and administrative skills.

**Keywords:** *poverty; gender role; propensity score; rural population; Mexico*

One of the great problems of the Mexican rural sector is the high social deprivation and poverty experienced by most of its families. In 2005, 26.1% of households in rural areas lived in poverty (Consejo Nacional de Evaluación de la Política de Desarrollo Social 2006), lacking resources to meet their basic nutritional needs, whereas 7.7% of households in urban areas faced the same situation. Social disadvantages have worsened and become steep social and economic inequities. These have been caused by the global economy's hold on Mexico, the recurrent crises over the past 20

years, and the scarcity and type of human capital available to farmers and indigenous peoples in Mexico for developing productive activities—especially education and capacity building for employment. This backdrop of severe poverty is a critical obstacle to developing communities and constructing a higher level of well-being for families.

In Mexico, rural and indigenous women face poverty more acutely than men do (Ávila 2006; Zapata, Alberti, and Mercado 1995). For these women, engaging in a productive activity that generates income involves some additional obstacles. This is due to a gap between the male and female labor forces, explained not only by a lack of capacity building or skill but also by lack of opportunity to build capacities and skills and then transform them into productive activities that effectively generate an income. These lacking conditions include those generated by restrictive role assignment rooted in social structures and biological differences between the sexes—that is to say, gender inequalities, including those related to time shortage, as productive activities or capacity building are expected to be such that they will allow the women to fulfill reproductive and child upbringing tasks that have been assigned to them, or alternatively, allow the women to distribute their activities in some other way. It also includes those related to the women's position within family groups where the gender hierarchy limits their freedom of movement and action (Bruschini 1994; García, Blanco and Pacheco 1999; Oliveira and Ariza 1997; Sánchez 1989).

Within the framework of international acknowledgement of the relationship between women and development, there has been debate in Mexico regarding how to incorporate women in social policy by modifying inequities—reproducing processes in the relationship between men and women. It has been argued that interventions focusing on overcoming poverty in which gender perspective is not deliberately included can hardly improve their condition (Kabeer 1998; Moser 1991; Portocarrero 1990; Zapata 2003; Tepichin 2005; Ávila 2006). The empowerment approach has been a reference frame to the development of interventions that emphasize

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the conception of women as active agents of development strategies rather than considering them as passive receptors. Empowerment is related to changes in the distribution of power in favor of those who formerly had little authority over their own lives. It is a process of winning spaces for controlling external resources as well as for improving self-esteem (Antrobus 1989; Organisation for Economic Co-operation and Development 1998; Sen 1997; Batliwala 1993, 1994; Riquer 2001).

In Mexico, several social entities (academy, nongovernmental organizations, feminist movements, government) have made efforts to design income-generating projects that deliberately include a gender perspective to overcome the reproduction of disadvantages among women living in poverty. Unfortunately, the effects found on income generation and women's well-being have been almost null. Among the limitations that have been suggested are as follows: designs with the purpose of social assistance without a business perspective to help in the understanding of the production–sales cycle; separation of the local context within which women's activities occur; lack of a diagnosis that identifies the potential of regional resources as well as community needs; and relegation of women's training and empowerment processes to a second level (Alemán et al. 1999; Cuesta, Sinquin, and Gutiérrez 1999; Espinosa 2006; González 1994; Martínez and Díaz 2004; Zapata, Alberti, and Mercado 1995; Zapata 2003).

In search of solutions to the obstacles most frequently faced by poor women, there is an intentional attempt to incorporate a gender perspective into capacity-building productive projects. Such projects seek to simultaneously strengthen women's work capacities and skills and initiate autonomy processes to effectively transform these capacities and earned income into better living conditions.

In this context, in 2003, the Mexican government established a technical cooperation agreement with the Inter-American Development Bank so that across the agency of the National Institute for Social Development, an institution of the Ministry of Social Development was carried out the project "Opportunities for Women of Low Income in Rural Areas" (Project OM). The objective of the project was to formulate a strategy focused on women living in rural areas to strengthen their economic productivity, contribute to gender equity, and decrease poverty in the long run. A key element was the design and implementation of a pilot study with the participation of Civil Society Organizations (CSO) with initiatives to test new approaches and institutional arrangements so to improve the access of economically deprived rural women to seed capital, credit, technical assistance, product marketing, and insurance schemes (Nacional Financiera and Interamerican Development

Bank 2003; Ávila 2003). In this sense, the distinct elements of Project OM are as follows: it includes a productive activity dimension linked to a gender perspective in the design; it is through the CSO that Project OM is linked to local reality and identifies the needs of women in the community; it is the CSO that have a direct relationship with the women; and the project's performance is evaluated through a national level coordinating agency.

This article seeks to show the results obtained by the impact evaluation of the project in its pilot phase. A questionnaire was designed for the evaluation to collect data on indicators reflecting the skills and capacities acquired by beneficiary women of the project, their perception of their social gender role, and their autonomy.

The first section of the article describes the design of the pilot project and the methodology used both for data collection and for data analysis. The second section shows the results, and the third section states the main conclusions of the study.

## **Description of the Program and Analysis Methodology**

The pilot test of Project OM was designed to be implemented by several CSO. The CSO were called to present viable initiatives<sup>1</sup> that linked gender perspective with income-earning opportunities for women living in deprived rural areas. Thirteen projects were approved and developed between May and December 2004 in communities in the states of Campeche, Chiapas, Hidalgo, Oaxaca, Puebla, Yucatan, and Veracruz. The project aimed to benefit 1,593 women of Nahuatl, Popoluca, Mayan, Totonaca, Tzetzal, Tojoloyal, Zapotec, and Mixelocali ethnicities. (See Table A1 of the appendix lists all the participating CSO in the pilot project and the general objectives of each CSO.)

The main characteristic of all initiatives was the emphasis placed on linking two dimensions: on one hand, the productive dimension,<sup>2</sup> to make economic activity performed by women sustainable; and on the other hand, the dimension related to the recognition of the women as transformation agents of their own situation. In this sense, the initiatives were planned to improve knowledge and skills about production and commercial activities, with special attention to the obstacles confronted by rural and indigenous when performing an economic activity, which had not been sufficiently addressed in previously implemented programs.<sup>3</sup> Capacity building was the means for the acquisition of new knowledge and skills.

The greatest challenge for an impact evaluation study is to generate data that reveals whether the changes observed in the population can be attributed

to the program, and also to separate these changes from other factors present in the social environment, which could also affect the outcomes of interest. Given that the same individuals cannot be observed in both scenarios, with and without the program, evaluators often estimate the impact by comparing the observed changes in the beneficiary group with the changes observed in a reference group. The assumption is made that the latter group accurately provides information on what would have occurred in the absence of the program. In this way, the simulation of the counterfactual scenario could be valid if the principle of exchangeability is fulfilled (Winship and Morgan 1999; Pearl 2001). In this sense, experimental designs are considered the most capable for attributing causal effects, as randomization increases the probability of observable and nonobservable variable distribution being similar between comparison groups. Thus, the possibility of the exchangeability principle being observed is increased. When random allocation is not possible, the challenge is to find a comparison group as similar as possible to the group receiving the intervention. Under some assumptions, this may be done through matching or through multivariate statistical methods.

An observational postintervention study was carried out to evaluate the impact of the pilot of Project OM, where the sampling frame consisted of the participant group of women from all projects approved for implementation in 2004, and which were to be potentially refinanced in 2005, depending on the results obtained in the follow-up evaluation.<sup>4</sup> Given the lack of information on nonparticipant women and the high costs involved in carrying out a census in different communities, it was decided to construct a sample of women from the comparison group in the same localities where the projects were implemented. Once the sample of participant women was identified, for each participant in the community, a nonbeneficiary woman was found in the geographical neighborhood. The inclusion criterion for the comparison group was being a woman 18 to 65 years of age not participating in the productive projects. A woman was considered a geographical neighbor if her home was contiguous to a beneficiary woman's home. If a woman who fulfilled the sample inclusion criteria did not reside in that contiguous home, the next closest home was visited, and so, on until a woman was found who could be a part of the comparison group. The selection was made at a 1-to-1 ratio. One assumption behind this strategy was that the selection process for the comparison sample was independent from the project's selection (Wacholder, McLaughlin, Silverman, and Mandel 1992). The other assumption was that the differences between the groups could be minimized by using the largest possible amount of data on the economic and sociodemographic characteristics

of the family and the woman, before and after the intervention, in such a way that the likelihood of participation in the project did not depend on the individual unobservable heterogeneity. In addition, due to budget constraints, only localities with 10 or more beneficiary women were considered.

A survey instrument was designed and tested to validate on field the pertinence and viability of the questions it included. The questionnaire generated relevant data on women's individual characteristics; demographic and socioeconomic aspects of their households; a set of indicators regarding technical, organization, and production skills; other dimensions related to the degree of autonomy attained by the women in decision making, and their perception of their social roles. The instruments and the design of evaluation were approved by the commissions of ethics and investigation of the National Institute of Public Health of Mexico.

The impact evaluation analysis estimated the average treatment effect on the treated (ATT)—that is to say, beneficiary women—by Propensity Score Matching (PSM), which takes into account the estimated probability of their participation in the project (Heckman, Ichimura, and Todd 1997; Rosenbaum 2002). Key assumptions behind PSM are as follows: (a) assumes that the probability of participation depends entirely on the observable characteristics and that after controlling for it, the Conditional Mean Independence to Treatment assumption is fulfilled (i.e., the observed results of interest are independent from the decision of participating in the Project; Wooldridge 2002); (b) the common support condition is met (i.e., for each  $x$ , there exists a positive probability of participation in the nontreated group); and (c) the Stable Unit Treatment Value Assumption is met, which assumes that the presence of the treatment does not affect the outcomes of the nontreated. A condition for constructing the propensity score is that it must be a function of variables that are not modified by the project, depending to a great extent on characteristics prior to participation in the project.

The propensity score was estimated using a logit model (see Table A2 of the appendix), where the dependent variable was given a categorical value (1 = effectively participating, 0 = not participating). Effective participation was assigned when the woman confirmed her participation in the project during the survey. Women originally listed as beneficiaries who denied being so were excluded from the analysis. The estimation was adjusted by characteristics that could have some bearing on participation incentives, such as age, relationship with the head of the household, education level, having children, speaking an indigenous dialect, having been pregnant in 2004, years of residence in the locality, being a beneficiary of

the *Oportunidades* program<sup>5</sup> (which was offered to communities before 2004), prior or current participation for more than 1 year in a religious association or in any productive or community aid organization, and having voted at the federal elections in 2000. As women's decisions may be determined in an interaction with other family members, some characteristics of the family were also included: age of the head of the household, number of persons in the household, number of persons holding a paid occupation, presence of children less than 5 years of age, youth 5 to 17 years of age, and adults older than 60 years of age, presence of persons with a disability, and a simple socioeconomic status index constructed using the information of assets in the household. Dummy variables were also included to identify each CSO to control any heterogeneity among them that could affect participation incentives, such as the amount of time present in the community, broadcasting campaigns, type of organization, or recognition of the CSO in the community, among others. In the same sense, dummy variables for the municipality were also included to control for heterogeneity at this level.

Once the propensity score was constructed and the existence of common support was assured, women from the treatment group were matched with nontreated women using Stata v9.2 software. Matching was specified by kernel with common support, and standard errors for bootstrapping were obtained with 400 replications. A general matching was performed for both participants and nonparticipants groups. A sample balancing test was done to verify the effectiveness of the matching strategy.

After the matching was completed, the impact of participation in Project OM was estimated in a set of outcome variables related to the following:

- Labor participation and expenditure
- Technical, administrative, and organizational skills
- Woman's perception of her own role in the household and gender equity
- Decision-making autonomy in matters of the couple relationship. Only women who were married or in a live-in relationship were considered.

The impact estimation was carried out for the following subsamples: (a) the aggregate of all initiatives, (b) initiatives that had exclusive capacity building activities, and (c) initiatives that promoted productive activities as well (see Table 1). To explore a possible differential effect of Project OM, complementary analyses of effects were performed among the young women subsample (under 36 years of age) and in the subsample of women with the highest education level (secondary school and over).



**Table 1**  
**Initiatives and Sample Size**

Civil Society Organizations (CSO)	Treated	Nontreated	Total	Activity type
CSO 1	98	141	239	Capacity building and production
CSO 2	85	85	170	Capacity building
CSO 3	92	91	183	Capacity building
CSO 4	71	71	142	Capacity building and production
CSO 5	48	60	108	Capacity building and production
CSO 6	91	89	180	Capacity building and production
CSO 7	53	54	107	Capacity building
CSO 8	52	66	118	Capacity building
CSO 9	5	5	10	Capacity building
CSO 10	11	10	21	Capacity building
Total	606	672	1,278	

## Results

The final sample obtained consisted of 1,301 women with a complete interview, 629 in the group of participant women, and 672 in the comparison group, distributed among 10 CSO (Table 1). Of the women who were known to have participated in Project OM, 23 claimed that they did not and were excluded from the analysis.

The estimation of the propensity score (Table A2 of the appendix) showed that many of the variables included in the model were significantly associated with the likelihood to participate in the project, which resulted in a highly discriminant model (Figure A1 of the appendix). As we expected, dummy variables for CSO and those related to women's social participation were significantly associated with a greater likelihood of participating in the project. The number of members in the household was inversely associated to the likelihood to participate, which may be due to a concomitant increased load of domestic work.

The result of the balancing of the samples (Table A3 of the appendix) after matching indicates that high comparability between groups was obtained. All variables that were significantly associated with the probability of participation turned out to be balanced.

The descriptive analysis before the matching (Table 2) shows that the mean age in the sample was 39 years, with a mean age significantly greater

in participant women compared to nonparticipant women. It is interesting to note that the mean age of women does not already correspond to age associated with child rearing, between the ages of 20 and 34 years. A high percentage of women (29.4%) reported having no formal schooling, and more than half the women in both groups reported having only elementary school education, with similar distribution between treated and nontreated women. This high percentage of illiteracy accounts for the high degree of deprivation experienced by these women. A high percentage of these women (70%) reported speaking an indigenous dialect. The average time they had lived in the locality is also greater (32 years) for participating women than for nonparticipating women (28 years). In both groups, more than 90% reported having had children.

For household characteristics, it was found that the average size of the households was approximately five members, with nearly 23% of these households having persons 60 years of age or older, and a small percentage of them (about 5%) having a disabled person. It was found that a lower proportion of households of participant women had children less than 5 years of age. The age of participating women and the absence of children less than 5 years of age are important with relation to time availability for non-household activities. These characteristics were included in the propensity score model for participation. Once the matching was done, as Table A3 of the appendix shows, the differences between groups were eliminated and the samples came out balanced in most variables.

## **Labor Participation and Expenditure**

The impact analysis reveals that around 70% of participant women were involved in some productive activity during the year before the survey and 50% performed some agricultural activity (Table 3). Participation in Project OM represented a statistically significant growth of 14 percentage points (pp), equivalent to 34.1% in women's participation in agricultural or livestock activities. This impact was 22.9 pp among women involved in productive activities. On the other hand, the analysis did not find this impact on women who merely had capacity-building experience in the field.

When analyzing the sum total of all productive activities, a significant impact of the project was documented, similar to that found in agricultural activities. This may be owing to the high correlation between these two variables. The ATT estimator did not reveal any significant impacts of the project in nonagricultural activities, such as labor work, handcrafts, assembly work, or peddling products. Similarly, no significant impact was

**Table 2**  
**Descriptive Statistics**

	Treated	Nontreated	<i>p</i> Value <sup>a</sup>
Woman's characteristics			
<i>n</i>	606	672	
Age	41.16 (13.37)	37.02 (13.51)	.000
Schooling			
% no schooling	31.19	27.53	.098
% elementary school	52.48	54.46	.414
% middle school or higher	16.34	18.01	.444
% speak an indigenous dialect	70.46	69.79	.778
% head of the household	17.33	20.24	.183
% pregnant in 2004	9.24	13.84	.079
% was participating in the Oportunidades program	82.67	54.46	.000
Average length of time she has lived in the locality (years)	32.42 (15.98)	28.21 (16.28)	.001
% who have children	92.74	93.45	.695
Household's characteristics			
Average members (Size)	4.85 (2.07)	4.72 (2.20)	.422
Log socioeconomic status <sup>b</sup>	1.78 (0.599)	1.66 (0.638)	.000
% households with children more than 5 years of age	35.97	49.70	.000
% households with persons 5 to 17 years of age	72.44	66.07	.106
% households with persons less than 60 years of age	25.08	21.28	.111
% households with persons with disabilities	6.11	3.87	.110

Note: Standard deviations in parenthesis.

a. Ho treated nontreated = 0 by regression analysis adjusted by clustering at locality level.

b. Simple index based on the number of assets in the household.

observed regarding the average daily number of hours women dedicate to domestic work. In other words, the fact that the women were participating in the project did not exempt them of their usual work load, meaning that women had to extend their working hours to participate in the productive activity. No significant impact was found in the contribution that the women offer to the household with money and work.

In spite of the positive effects of the project in agricultural activities, the ATT analysis does not provide evidence of any impacts of Project OM on the food expenditure level of households, whether monthly or weekly. It was

**Table 3**  
**Matching Estimators for Average Treatment Effect on the Treated: Economic Outcomes**

Variable	All samples				Sample 1				Sample 2			
	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference
		0.554	0.414	0.140**	0.595	0.366	0.229**	0.526	0.457	0.069		
Agricultural activities or raising livestock independently (1 = yes, 0 = no)	0.154	0.103	0.051	0.02	0.041	-0.021	0.277	0.145	0.132**			
Worked as a laborer, artisan, assembly worker, etc (1 = yes, 0 = no)	0.103	0.115	-0.012	0.05	0.077	-0.027	0.147	0.149	-0.002			
Worked selling products (foodstuffs, artisan products, clothing, etc.; 1 = yes, 0 = no)	6.730	7.000	-0.270	6.84	7.52	-0.680	6.62	6.64	-0.020			
Mean daily hours spent doing household chores	0.710	0.571	0.139**	0.691	0.476	0.215**	0.736	0.647	0.089*			
Was dedicated to some productive activity <sup>a</sup> (1 = yes, 0 = no)	0.309	0.279	0.030	0.264	0.299	-0.035	0.345	0.27	0.075			
Contributes work and money to the household (1 = work and money, 0 = work only, including domestic work)	245.92	248.50	-2.58	236.49	241.02	-4.53	253.82	252.96	0.860			
Food expenditure (last week of the survey)	1047.89	1088.27	-40.38	1041.92	1122.27	-80.35	1054.13	1052.04	2.090			
Total monthly expenditure (last month of the survey)												

Note: Sample 1: Women in Civil Society Organizations with capacity building activities only; Sample 2: Women in Civil Society Organizations with capacity-building and productive activities; The effects estimate was obtained through weighted kernel matching.

a. Productive activity adds “worked in agricultural activities, livestock raising, labor, handicrafts, assembly, or selling products.”  
\**p* significant at 10%. \*\**p* significant at 5%.

interesting to find that only about 30% acknowledged bringing earnings into the household. In an additional analysis of how the produced goods ended up, it was observed that only 19% of women who produced something through their participation in the project sold everything, whereas 43% sold part of what they produced and consumed the other part, and 33% used the products for autoconsumption. Consumption of the produced goods certainly contributes to relief of the impoverished condition with relation to nutrition, but it does not facilitate the consolidation of a long-term productive activity.

### **Technical, Organizational, and Administrative Skills**

These skills included balancing a basic book of accounts between expenditure and savings, knowing how to save, knowing how to fill out forms to apply for credit, being able to manage and in various instances solve group or community problems, and knowing how to use a calculator. Table 4 shows that Project OM did not have a significant impact on the acquisition of basic administrative skills for the planning and execution of a productive project. In general, 35% of the women reported that they are able to use a calculator, 10% know how to file for credit, and only 5% know which institution to approach in case of a group or community problem.

### **Woman's Perception of Her Own Role in the Household and Gender Equity**

With regard to the indicators mentioned for women's perceptions of their gender role in the household, Table 5 shows that around 46% of women agreed that it would be best if women only dedicated themselves to household chores. A similar percentage agreed that men are better than women for working outside the home. On the other hand, approximately 78% of women in both groups agreed that women and men are equally capable of performing paid work but that it is more difficult for women due to time constraints.

Among women participating in projects with productive and capacity-building activities, the impact analysis revealed that Project OM significantly reduced (by 14.7 pp) the proportion of women who deemed their role in the household to be exclusive for domestic chores. On the other hand, a greater proportion of women participating in projects with only capacity-building activities recognized equality between men and women in terms of the ability to perform any paid work; moreover, these women also recognized inequality in the conditions for access to labor market. Aside from that, no significant impacts of Project OM were found in the other variables studied.

**Table 4**  
**Matching Estimators for Average Treatment Effect on the Treated:**  
**Outcomes Related to Technical, Administrative, and Organizational Skills**

Variable	All samples				Sample 1				Sample 2			
	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference
	Knows how to calculate what she spends on foodstuffs and other goods, and how much money is left (1 = yes, 0 = no)	0.632	0.640	-0.008	0.67	0.63	0.040	0.603	0.651	-0.048		
Knows how to save (1 = yes, 0 = no)	0.604	0.598	0.006	0.562	0.552	0.010	0.642	0.605	0.037			
Knows how a savings institution works (1 = yes, 0 = no)	0.194	0.221	-0.027	0.17	0.224	-0.054	0.214	0.216	-0.002			
Knows how to fill out forms to file for credit (1 = yes, 0 = no)	0.064	0.135	-0.071*	0.05	0.16	-0.110*	0.08	0.121	-0.041			
Knows how manage different instances in organizations, programs, or offices to solve group or community problems (1 = yes, 0 = no)	0.058	0.048	0.010	0.062	0.058	0.004	0.059	0.044	0.015			
Knows how to use a calculator (1 = yes, 0 = no)	0.309	0.404	-0.095*	0.341	0.416	-0.075	0.291	0.374	-0.083			

Note: Sample 1: Women in Civil Society Organizations with capacity building activities only; Sample 2: Women in Civil Society Organizations with capacity-building and productive activities; The effects estimate was obtained through weighted kernel matching.  
 \**p* significant at 10%. \*\**p* significant at 5%.

**Table 5**  
**Matching Estimators for Average Treatment Effect on the Treated:**  
**Outcomes Related to Perception of Women's Role in the Household**

Variable	All samples				Sample 1				Sample 2			
	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference
	It would be best if women dedicated themselves to household chores only (1 = agree, 0 = disagree)	0.422	0.508	-0.086	0.365	0.512	-0.147*	0.462	0.549	-0.087		
Men are better than women at working outside the home (1 = agree, 0 = disagree)	0.452	0.473	-0.021	0.384	0.424	-0.040	0.514	0.523	-0.009			
Women and men have the same capacity to perform a paid occupation... but women face the obstacle of time shortage (1 = agree, 0 = disagree)	0.815	0.757	0.058	0.753	0.733	0.020	0.872	0.765	0.107**			
but women encounter difficulties due to lack of training (1 = agree, 0 = disagree)	0.713	0.740	-0.027	0.689	0.757	-0.068	0.737	0.722	0.015			
but women face the obstacle of having to convince their husband or partner to allow them to work (1 = agree, 0 = disagree)	0.741	0.790	-0.049	0.754	0.846	-0.092	0.728	0.754	-0.026			

Note: Sample 1: Women in Civil Society Organizations with capacity building activities only; Sample 2: Women in Civil Society Organizations with capacity-building and productive activities; The effects estimate was obtained through weighted kernel matching.

\**p* significant at 10%. \*\**p* significant at 5%.

## **Decision-Making Autonomy in Matters of the Couple Relationship**

As with the variables related to women's perceptions of their role in the household and gender equity, there are other outcomes of interest that are closely related to the general objectives of Project OM. Specifically, the question addressed whether women exercise autonomy in decision making. Different studies (Anker, Buvinic, and Youssef 1982; Meitei 2001; Dixon-Mueller 1998; Safilios-Rotschild 1982; Nussbaum and Sen 1993) have pointed out that female autonomy for decision making and freedom of movement are important factors that have a bearing on the lives of women and the people around them.

To know about the autonomy in decision making, women were asked whether they needed permission to use their money, work, visit family or friends, go to the doctor, save money, enter a drawing, participate in an association, decide which party to vote for, or spend money. The concept of autonomy helps to explore women's participation in decisions that do not immediately take on an established empowerment model as would be desirable. Autonomy implies freedom but is not necessarily a measure of power. Men and women may have considerable autonomy in certain spheres of their lives and little in others.

The impact analysis focused on the decisions taken in the sphere of the couple relationship. Therefore, only women married or in a live-in relationship were included. The ATT analysis shows that Project OM had a positive impact by reducing to 13.7 pp the proportion of women who reported that they always or almost always ask their partner for permission (see Table 6). A greater impact was observed among women who participated in projects with exclusive capacity-building activities (18 pp). Out of those women, an impact of a 12.5 pp reduction was found among women who always or almost always ask their partner permission to save money.

Although no significant impacts of the project were found on the proportion of women with more autonomy in the decision of spending money or in the decision to visit friends or family, the results suggest that the project tends toward the desired direction. Despite the modest effects, 40% to 50% of women still depend on their husband's or partner's permission to carry out certain activities or take certain actions.

The complementary analyses performed in the subsamples of young women and women with high education level revealed that both groups of women showed a better situation than women of the whole sample regarding their role within the household, autonomy in decision making, administrative-technical abilities, and work activity. In all cases, as expected, women



**Table 6**  
**Matching Estimators for Average Treatment Effect on the Treated:**  
**Outcomes Related to Decision Making in the Household**

Variable	All samples				Sample 1		Sample 2		
	Treated	Nontreated	Difference	Treated	Nontreated	Difference	Treated	Nontreated	Difference
How frequently the woman asks for permission from her husband or partner to work (1 = <i>always</i> or <i>almost always</i> , 0 = <i>never</i> or <i>seldom</i> )	0.467	0.604	-0.137**	0.405	0.457	-0.052	0.511	0.69	-0.179**
How frequently the woman asks for permission from her husband or partner to visit friends or relatives (1 = <i>always</i> or <i>almost always</i> , 0 = <i>never</i> or <i>seldom</i> )	0.427	0.484	-0.057	0.38	0.435	-0.055	0.453	0.501	-0.048
How frequently the woman asks for permission from her husband or partner to save money (1 = <i>always</i> or <i>almost always</i> , 0 = <i>never</i> or <i>seldom</i> )	0.402	0.495	-0.093	0.331	0.359	-0.028	0.442	0.567	-0.125**
How frequently the woman asks for permission from her husband or partner to spend money (1 = <i>always</i> or <i>almost always</i> , 0 = <i>never</i> or <i>seldom</i> )	0.394	0.456	-0.062	0.324	0.311	0.013	0.442	0.544	-0.102

Note: Sample 1: Women in Civil Society Organizations with capacity building activities only; Sample 2: Women in Civil Society Organizations with capacity-building and productive activities; The effects estimate was obtained through weighted kernel matching; Only women who were married or in a live-in relationship were considered.

\**p* significant at 10%. \*\**p* significant at 5%.

with higher education level showed a relatively less disadvantaged situation. Taking these results with reservations, as statistical efficiency was affected by sample size, the impact analysis suggests that Project OM seems to have greater impacts among younger women and those with higher education.

## Discussion and Conclusion

The objective of this article was to present the results obtained from the impact evaluation of the pilot study of Project OM, which had the purpose of trying different intervention strategies based on capacity building and promotion of productive activity to contribute to the improvement of poverty conditions, economic activity, and gender conditions of rural and indigenous women of Mexico. The time of exposure to the benefits of the interventions is still too short to expect mid-term and long-term impacts that could drastically modify women's living conditions. Yet it is possible to inquire whether the project as a whole is having an impact on intermediate results that are directly linked to longer term results. Through non-experimental methods such as PSM, this study has evaluated outcomes that are related to women's participation in productive activities; in the acquisition of technical, administrative, and organizational skills; in women's perception of their gender role in the household; and the autonomy attained in making certain decisions in the couple relationship.

Basic exploration of the data indicates that the groups of women who had been considered treated and nontreated did not fulfill the comparability criteria in many of the variables related to the woman and her family, which, presumably is largely explained by the level of women's social participation and by the load of domestic work. Thus, the use of the matching technique was called for to maximize the comparability between the groups and in this way simulate the presence of a comparison group to use in the impact estimation. The results of the participation model showed that it was possible to estimate a comparison group because a common support region in the estimated likelihood of participation was available. The sample balancing test revealed that after matching, the samples were balanced in most of the important variables, thus eliminating pre-existing differences among the groups.

The results of the analysis showed a significant impact of Project OM in agricultural productive activities among participant women—a greater effect being observed among women who participated in projects that promoted the performance of productive activities in addition to capacity building. This is consistent with the fact that most of the initiatives implemented by the CSO were oriented toward promoting backyard agricultural activities or livestock raising.

The analysis has also shown that Project OM did not have a significant impact on monetary contribution by women to the household or greater consumption expenditure in these women's households. The finding reiterates one of the great obstacles for generating productive activities in an impoverished population. The poverty is of such magnitude that families cover part of their nutrition with the produce from their backyards. As some authors have mentioned (Zapata, Alberti, and Mercado 1995; Zapata 2003), the difficulty of the impoverished population to face the unexpected and to cover basic necessities calls for joining production initiatives together with sustainable financing. The extreme poverty condition combined with the profile of the interventions explains why many income-generating projects turn into immediate welfare actions.

The null impact of the project on the reduced number of hours dedicated daily to domestic chores opposes the fact that interventions have striven to include a gender perspective that contemplates time distribution for the women. Interventions, however, have not favored changes in the distribution of household chores, resulting in a work overload for women who participated in the project. This result is consistent with other findings (Instituto Nacional de las Mujeres 2005).

Transforming gender aspects takes time. However, any program that seeks to improve women's situation in the field of productive opportunities must first consider the unequal distribution of domestic and nondomestic work. This inequality constitutes one of the axes that sustains the current sexual division of work and that has been one of the aspects that generally resists change.

In spite of a considerable proportion of women affirmed to have prior experience in productive activities, null impact was observed on the acquisition of technical, administrative, and organizational skills. The high proportion of women who were illiterate, without or little schooling drastically reduces the possibility that those women who undergo capacity building actually gain capacities. The results of the complementary analysis among women with the highest education level confirm that this factor is a key element limiting the potential impact of the project. Unfortunately, the efforts of training for productive activities cannot correct the major education lag of these women.

An interesting finding has been the positive impact of interventions on the variables related to women's autonomy and perception of gender role. Although most of the variables analyzed did not show a statistically significant effect, impacts point in the desired direction. However, these results are possible, given the short participation period in the project, and acknowledging that attitude and behavioral changes require prolonged intervention periods. To the extent that woman's participation in productive, income-earning activities is consolidated, it is expected that greater respect from her family

and greater freedom in decision making will be generated (Sebstad and Gregory 1996; Cheston and Kuhn 2002; Adato, de la Brière, Mindek, and Quisumbing 2000).

Even with the good performance of the estimation strategy, among the main limitations of the study was the absence of a list of women who did not participate. Their participation would have allowed identification of the comparison group with greater precision and thus avoid the need to construct the control group in the same localities as the treated women. This limitation casts doubt on whether the Stable Unit Treatment Value Assumption is met. In an environment where families strengthen and use social networks to face poverty (Adato 2000; González de la Rocha 1994, 2000), it is expected that women in the treatment group socialize, to an extent, benefits provided by Project OM within the women of the community. If externality exists, however, we believe that it is positive and that the real impact is being underestimated.

Another important limitation was the lack of preintervention information for both groups. If such information were provided, pre-existing differences among groups could be controlled for, and there would be no dependency on retrospective information. It is possible that some characteristics, such as education level, marital status, and so forth, could change as a result of participating in the project. The limited sample size obtained for each CSO did not allow for evaluation of individual impacts per organization.

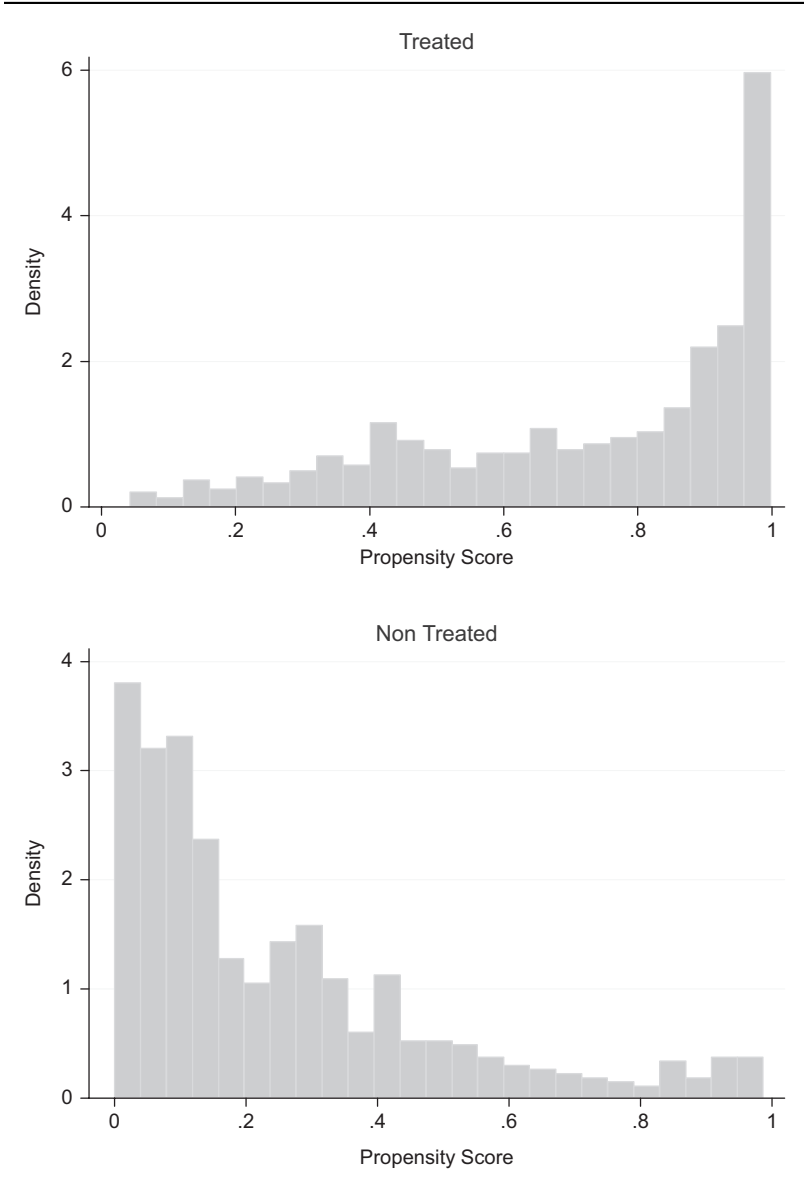
The findings of this study reinforce the necessity of advancement in the design of income-generating initiatives that integrate two dimensions addressing gender inequality (Fraser 2002): first, the inequality in the division of work; and second, the acknowledgement of the patriarchal patterns that enforce such inequalities. In this sense, any intervention that aspires to have an impact on gender inequalities should combine distribution and acknowledgement actions. There is no gender neutrality in productive projects design. It has not been easy to avoid designing projects with a male perspective. Productive projects have frequently been characterized with failure to acknowledge women's stereotyped and restrictive self-perception of their gender role. The projects have also failed to take into account the task distribution assigned to women and the little autonomy they have in decision making and freedom of movement.

The initiatives that made up the pilot test of Project OM were designed with express content that allows impact in both the dimensions described above. These initiatives were implemented to further income-earning activities that increase women's opportunities to acquire resources and knowledge. As can be observed in the results of the present study, the road is not a smooth one. The results obtained do not show a significant change in either the women's generation of income or the dynamics of the gender relations. However, the results do point toward a positive impact of the project.

**Appendix A**  
**Table A1**  
**Description of Civil Service Organization (CSO)**

CSO	Objective
CSO 1	To consolidate the network of indigenous agricultural promoter women trained in topics of organization and technical aspects related to agricultural and livestock-raising activities
CSO 2	Training and capacity building for women to promote the culture of saving money, health care, environmental care, and economic opportunities
CSO 3	Strengthening promoter and leader women's capacity to deal with decision making, saving money, and opening markets
CSO 4	To strengthen, from a gender perspective, the social and economic positioning of indigenous women from the south of Veracruz state, participating in land use projects through a process of training, capacity building, encouragement to save money, commercialization, and productive organization
CSO 5	To foster integral use of ecologic fruit orchards by strengthening administrative, management, planning capacities, and evaluating women's activities
CSO 6	Capacity building and training on human, social, productive, technical, nutrition, and agricultural and livestock-raising aspects for the design and development of family farms and orchard fields
CSO 7	To establish self-development activities (i.e., savings institutions of women by means of executing productive projects in integral backyard farms)
CSO 8	Community self-diagnosis, identification and selection of investment ideas, local sustainable development
CSO 9	To strengthen the productive abilities of women in the production of roof tiles and concrete blocks, and to benefit other women through money saving and distribution with materials at a low cost
CSO 10	To guide and inform women on reflection methods, learning, rights, productive experiences, etc.
CSO 11	Collective knowledge building in productive projects and successful organization processes
CSO 12	Training women as promoters to analyze and reflect on their necessities as women, so as to design economic and social alternatives
CSO 13	To design, validate and transfer capacity-building methodologies to integrally incorporate gender perspective into rural enterprises

**Figure A1**  
**Propensity Score Histograms**



**Table A2**  
**Logit Estimate of the Propensity Score**

Dependent Variable (1 = participates in the project, 0 = does not participate)	Robust z Statistics	
CSO 6	0.37	0.84
CSO 5	-3.946	7.53***
CSO 8	13.831	44.47***
CSO 1	-19.631	32.27***
CSO 4	-0.863	2.20**
CSO 2	-3.459	5.97***
CSO 7	-0.389	0.81
Age (1 = 30 to 40 years, 0 = 18 to 30 years)	0.212	0.69
Age (1 = 40 to 50 years)	-0.377	0.90
Age (1 = 50 or more years)	0.335	0.68
Relationship (1 = head of household, 0 = wife of household head)	-0.688	2.56**
Relationship (1 = other)	0.453	0.94
Age of household head (1 = 30 to 40 years, 0 = less than 30 years)	-0.016	0.06
Age of household head (1 = 40 to 50 years)	0.263	0.71
Age of household head (1 = 50 years or older)	-0.033	0.08
Speaks an indigenous dialect (1 = yes, 0 = no)	-0.3	1.11
Schooling (1 = elementary, 0 = no schooling)	-0.128	0.51
Schooling (1 = middle school or higher)	0.13	0.38
Was pregnant in 2004 (1 = yes, 0 = no)	0.529	1.53
Affiliation in a religious group <sup>a</sup>	0.422	1.73*
Affiliation in a productive organization <sup>a</sup>	4.122	9.92***
Affiliation in a social or community organization <sup>a</sup>	0.175	0.84
Is an <i>Oportunidades</i> beneficiary	2.194	5.07***
Years of residence in the locality	0.006	0.98
Voted at the last presidential election (1 = yes, 0 = no)	0.383	2.74***
Has children (1 = yes, 0 = no)	-0.789	2.11**
Presence of children age less than 5 years of age in household (1 = yes, 0 = no)	-0.242	1.08
Presence of children age 5 to 17 years (1 = yes, 0 = no)	0.222	1.00
Presence of persons age more than 60 years (1 = yes, 0 = no)	0.076	0.34
Data missing in person more than 60 years of age	-0.212	0.29
Number of persons in household	-0.124	2.05**
Persons with paid occupation in household (1 = one, 0 = none)	-0.174	0.45
Persons with paid occupation in household (1 = two or more)	-0.059	0.13
Presence of disabled persons in the household (1 = yes, 0 = no)	0.288	0.68
Household benefits from PROCAMPO since 2004 (1 = yes, 0 = no)	0.474	1.63
Socioeconomic Status (simple index based on questionnaire)	0.153	0.95
Observed	1278	
Pseudo R <sup>2</sup>	.4139	

Note: *SE* adjusted by clustering at locality level and includes fixed effects on a municipality level.

a. Only cases with more than 1-year affiliation were taken into account.

\**p* significant at 10%. \*\**p* significant at 5%. \*\*\**p* significant at 1%.

**Table A3**  
**Sample Balancing Results**

Variable	Before the Matching		After the Matching	
	Difference	$p >  t $	Difference	$p >  t $
Age	4.14	0.000	0.99	0.175
Relationship (1 = man is head of the household, 0 = wife is head of the household)	-0.03	0.184	0.00	0.875
Relationship (1 = other)	-0.01	0.446	0.00	0.966
Age of the head of the household	3.59	0.000	0.47	0.595
Speaks an indigenous dialect	0.01	0.794	0.04	0.175
Was pregnant in 2004	-0.05	0.011	-0.01	0.744
Schooling (1 = elementary, 0 = no schooling)	-0.02	0.477	0.04	0.139
Schooling (1 = middle school or higher)	-0.02	0.430	-0.03	0.213
Affiliated with a religious group	0.11	0.000	0.00	0.890
Affiliated with a productive organization	0.52	0.000	0.04	0.198
Affiliated with a social or community organization	0.10	0.000	-0.06	0.015
<i>Oportunidades</i> program beneficiary	0.28	0.000	0.01	0.787
Years of residence in the locality	4.21	0.000	0.20	0.819
Voted in the last federal elections (in 2000)	0.11	0.000	-0.01	0.643
Has children (1 = yes, 0 = no)	-0.01	0.615	-0.01	0.664
Presence of children less than 5 years of age in the household	-0.14	0.000	0.05	0.064
Presence of persons 5 to 17 years of age in the household	0.06	0.014	-0.02	0.359
Presence of persons more than 60 years of age in the household	0.04	0.107	0.03	0.182
Number of persons in the household	0.13	0.264	0.04	0.718
Persons who work from home (1 = one person, 0 = none)	-0.03	0.196	-0.01	0.721
Persons who work from home (1 = two or more persons)	0.03	0.152	0.06	0.006
Presence of a person with a disability in the household	0.02	0.065	0.01	0.462
Household benefits from PROCAMPO since 2004	0.10	0.000	0.01	0.679
Log socioeconomic status	0.12	0.001	0.01	0.859



## Notes

1. Civil Society Organizations were required to demonstrate experience in participative rural development with a gender focus as well as in designing capacity-building programs and technical assistance programs that they were planning to implement. Initiatives to be included in the pilot project were selected through a judging process as per the Specific Guidelines (Secretaría de Desarrollo Social 2005a) and the Operation Rules of the Social Co-investment Program (Secretaría de Desarrollo Social 2005b).

2. Mostly, productive actions ensured dietary subsistence through the use of participants' backyard or the taking up of another viable productive activity based on the resources and markets available in the community.

3. In the sense that women have not been an explicit object of attention for public policies—meaning that they are being fundamentally considered in terms of their reproductive role—Ávila (2006) gives an overview of public policy on the social aspect directed to women, pointing out its assets, obstacles, and achievements.

4. At the time the project was in progress, follow-up and surveillance activities were performed to determine how well the activities previewed in the original proposal were being followed. These data confirmed that all projects carried out capacity-building actions and that only a few promoted the production of any goods, mostly agricultural products (Martínez and Díaz 2004).

5. The *Oportunidades* is a conditioned money transfer program. It was instated in 1997 to tend to the serious lagging of the poorest areas of Mexico in building human capital.

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