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**Mexican Women and Food in Rural and Urban Contexts**

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**Abstract**

Activities involved in the preparation of food are particularly important for women since they absorb much of the time they spend in domestic work. Gender norms establish the activities performed by men and women and more so in rural societies. Using data from the Mexican National Survey on the Use of Time carried out in 2002, I seek to find the determinants of the time rural and urban women spend in activities related to food preparation. I estimate a model where the type of assets available in the household, household structure and women's characteristics are included in order to explain the time spent in food preparation. I intend to demonstrate that cultural norms prevalent in rural households and the lack of household appliances impose a huge burden on rural Mexican women. Preliminary results suggest rural women in Mexico spend large amounts of time in food preparation.

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## Background

Cooking and other food preparation activities, including eating, constitute part of the family rituals and an essential element in family life and the formation of habits. Because, among others, cooking and food preparation impact important aspects of child development, such as child nutrition, they have a special role in determining family member's wellbeing

Because eating is an essential act for human survival, the relevance of studies about food is undisputable. Studies about food have shed light on broader social processes among which are the social construction of memory, the political-economic value creation and the creation of symbolic values (Mintz and Du Bois, 2002).

Food touches everything and is the basis of the economy in any country. Eating is a continuously transformed representation of gender relations in the family and the community. It is a medium through which gender relations are defined and is also linked to social hierarchies and power relations (Counihan and Van Esterik, 1999). In most cultures food differentiates sexes but at the same time it establishes a connection between them (Counihan, 1999).

In history, women have had a special relationship with food. This relationship can be examined from different points of view including women's body image, female identity as a source of food for the family, the ability of women to decide on household activities, women's aspirations, etc. In this work the main focus of analysis is the woman as feeder, which on the one hand is related to the theories that explain where the vision of women as a source of food comes from and

also with the theories that concentrate on the determinants of labor division within the household and why domestic activities, particularly those related to food, are mainly performed by women.

Activities related to food preparation are particularly important for women because they absorb much of their household work time. Plan each day's menu, buy all the necessary ingredients for food preparation, wash dishes and clean the kitchen are all activities which add up to food preparation itself and are also generally linked to women.

Why are women usually responsible for feeding their families?

The difference between men and women in the allocation of time to the household activities can be explained from at least two theoretical perspectives. One is related to economics and the other one derives from a gender approach. According to the first, it is more efficient that one of the members of the household engages in domestic work while the other one is dedicated to work outside the home. Each of the members will be more productive if they are dedicated to just one type of work. Household income maximization is achieved because the household member dedicated to work outside the home may have a higher income while the one specialized in domestic work becomes more efficient and can therefore produce more household goods. Food is one of these goods. It is best that women are engaged in domestic work since they have a comparative advantage in this kind of work. In addition, Becker (1991) suggests that men participate less than women in food preparation, since men have a higher salary and work longer hours; therefore, it is the female in the household who has to perform all the food related activities.

This perspective on household work division presents some caveats. One of them is that it may be less advantageous for women, so it may not be maximizing the utility of all household members. Another disadvantage for women is they may become economically dependent and, therefore, their negotiation power within the household is reduced.

From the gender perspective, women's specialization in household work is the result of unequal power relations among the sexes. Female association with feeding activities is part of a gender role as care giver and a way of providing affection and nutrition to the family. Mother's role as a source of food has a biological foundation. It is the mother who provides nutrients to the fetus developing in her body. Breastfeeding maintains the mother closely connected to her feeder role. After weaning, the role of mothers in children's feeding continues as a natural extension, reinforced by the caregiver role socially assigned to women.

One of the elements reinforcing mother's role in children's feeding is the recognition that children access to adequate nutrition affects not only their ability to perform daily activities, but that is one of the most important factors to achieve their future potential. What a child loses in terms of development by the lack of basic nutrients is not recoverable in the future (Mead, 1999).

On many occasions sense of female identity is based on women's ability to feed her family. Food gives women a sense of identity and power. From food women may become vulnerable or powerful (Van Esterik 1996).

Another view within the same gender perspective holds that women accept domestic chores such as cooking, not as a choice or a vocation emerging from her role as family feeder, but rather due to her inability to negotiate another labor division (Sayer 2006). The docility and adaptation to the wishes of others is a feature of women's gender role.

Women's comparative advantage in domestic work tends to reduce as women's education and wage levels increase. The decline in the marriage rate, rising age at first marriage and fertility reduction, among other factors, promote a greater allocation of female time to the labor market. Increased education levels also increase women's bargaining power within the household and allow them to achieve better arrangements in the distribution of domestic work. However, there are factors that prevent major change in the division of labor between men and women. Some feminist theorists argue that domestic work is an integral part of an unequal system of power relations

between men and women. Men avoid certain domestic tasks as a reaffirmation of their masculinity and a way of strengthening their structural and cultural power. It is more appropriate for women to perform certain masculine tasks than for men to perform tasks typically seen as "feminine". The review of the literature on the trends in the division of labor between men and women points to a decline in the gap between men and women regarding the number of hours devoted to domestic work. The propensity of women to perform domestic labor has been reduced (Sayer 2005)

Although labor division between the sexes and the assignment of women to household chores is a behavior highly diffused in the contemporary world, it has not been observed in all societies or at all historical times. The first human societies not always gave a clear division of labor by sex. Frader (2004) believes that the division of labor by sex is not a product of "human nature", but that develops in parallel to private ownership, social stratification, etc.

For the Mexican case, De Barbieri (1984) found that in Mexico City in different social sectors is almost always the wife responsible for implementation or monitoring domestic activities. Male involvement in household work is limited and non-systematic and happens mostly when women are involved in the labor market. Even in this case, it assumes the form of a "help" and not a real co-responsibility in domestic work.

In the past few decades Mexican female labor participation has increased substantially. Between 1970 and 2000 the pace of integration into the labor market of married women with children accelerated. In spite of this, women still devote many hours to domestic work (Pedrero 2006).

## Objective

This paper seeks to investigate how much time women spend in food-related activities and what are the main differences between urban and rural women in the amount of time and activities involved in food preparation. I also seek to analyze variations in time spent cooking and in other food related

activities between women with different characteristics such as labor force participation, educational levels, etc. Finally I estimate a model which seeks to find out what are the main determinants of the number of hours rural and urban women spend cooking and doing other activities related to food.

Methodology:

Data Source:

I use the National Survey of Time Use (ENUT 2002) as the main data source for this paper. This survey provides statistics on the number of hours members of a household (12 and older) spend in different daily activities. ENUT 2002 was carried out as a module of the National Survey of Household Income and Expenditure (ENIGH 2002). For this reason its sampling frame is also probabilistic, of a multistage, stratified and designed by conglomerates, where the selection unit is the private dwelling. The ENUT sample is representative at the national level and of all rural localities (below 2,500 inhabitants) and urban communities (2,500 inhabitants and over). The sample size determined with 90% confidence level was 5,445 housing units. From that total 4,782 households were interviewed.

In order to analyze the time spent in activities related to cooking and food preparation, I created two main cooking categories: The first one includes all the activities in which food transformation is involved. It includes cooking itself, starting the fire, all activities related to tortilla elaboration (corn grinding, dough preparation and kneading and baking tortillas), making conserves and other food complements. The second category includes other activities related to food but not cooking. It includes 9 different activities: serving food, taking food to a relative, wash dishes, clean kitchen, food shopping, breed farm animals, collect fruits, hunting and fishing, take food to a sick person and take food to a child.

## Data Analysis

The analysis of the data provided by the Time Use Survey provides evidence that in Mexico the kitchen, at least at the level of the household, is a predominantly female space. Mexican women over 14 spent on average 10.2 hours per week in food preparation activities and 13.8 to other food related activities. These averages are substantially higher in comparison with the ones observed for the males. The male population in Mexico devoted in 2002 on average a little less than an hour a week to prepare food and 2.9 hours to related activities.

### Insert table 1

It is interesting to see that in rural areas the average number of hours spent by women on activities related to food preparation doubles what we see in the urban sector (16.3 vs. 8.4). Differences occur in all activities included under the food preparation heading: food preparation itself, preserves preparation, starting the fire, all activities related to tortilla making and the preparation of supplements. Making tortillas includes grinding corn, dough (nixtamal) preparation and kneading and baking tortillas. On average rural women dedicate almost 4 hours a week to these activities. However, in the urban sector, on average the elaboration of tortillas involves only twenty minutes a week of women's time (see table 1). Basically this difference arises from the fact that in rural areas the whole tortilla making process is homemade, while in urban areas tortillas are purchased directly to tortilla factories (tortillerías). In fact, according to our data, 70% of rural households and 11% of urban households report hours in the tortilla making process. The whole process of growing corn and making tortillas has a special meaning for most indigenous cultures in Mexico.

Another activity which is mainly performed in rural areas is starting the fire. This activity is not important for urban women but takes about an hour a week of rural women's time. According to

our data source 60% of rural households use firewood as their cooking fuel, while in the urban areas only 6% of households fall in this category.

According to ENUT, the 31.1% of rural households consume part of what they produce. This means more work in the household in order to have the produce ready for consumption. Only 22.9% of rural households have water tunneled inside of the home and in addition, 9% has no electricity.

Other differences in hours spent in food preparation activities between rural and urban women can be explained by the type of appliances used in the cooking process. Only 33.3% of rural households own a blender (compared to 90% urban households) and 53% own a refrigerator (compared to 83.4% urban households).

Differences between rural and urban women in hours dedicated to other food related activities are less significant. Time spent washing dishes and cleaning up the kitchen is not very different in rural and urban areas. The use of appliances reduces only marginally time spent in these activities. Urban women spend more time shopping (table 1), which is also related to the fact that they buy more elaborated cooking inputs. Rural women spend more time breeding farm animals and collecting fruits, hunting and fishing. It is precisely in this last activity where rural men show the greatest time participation in food related activities and is also the only food related activity where men seem to participate in a greater manner than women.

Not only do men spend less time in food related activities, in general their participation in housework activities is very low, significantly lower than women's participation (49.1 vs 11.9). Pedrero (2006) points out that "the number of hours spent in domestic chores mirrors the greatest gender inequalities since most housework activities devolve upon women, necessarily reducing the time they spend in other activities". This is more clearly appreciated among adults, a life stage where women spend 39% more hours than men in domestic activities (see table ).



We may also tell that food preparation takes a lower proportion of housework time in the case of men (7% for men and 20% for women). Mexican men participate much less than women in housework chores and their participation in food related activities is even lower.

Food related activities also take a larger proportion of the hours dedicated to housework in the rural areas. This is probably due to lower productivity in rural areas caused by the lack of appliances, the type of cooking fuel used and the cultural importance of preparing homemade tortillas, which we already mentioned.

The number of hours engaged in the most representative food related activity, eating, is very similar in rural and urban areas. We had hoped that the less busy pace of life in rural areas, would allow families to spend more time having their meals. However, the data from the survey does not reflect this fact.

Young women are the ones spending fewer hours in food related activities. The group with highest number of hours in these type of activities is the 60-64 in the urban areas and the group 40 to 44 in the rural areas. This is the group where the number of hours cooking and in food related activities reaches its highest level (see table 2).

**Insert table 2**

The difference in the age group with the maximum number of hours between urban and rural areas may be related to an earlier change in behavior towards food related activities in urban women, while rural women are still following old patterns in terms of labor participation and the division of labor.

From table 2 we can see that activities related to food preparation absorb a great number of hours for rural women since young age, 17.8 hours on average for women 15-19 and 30 hours for women 20 to 24. Rural women not only spend a lot more hours in these activities, they start doing

so from an early age. This behavior is related to early school abandonment in rural areas. Even when women remain in the parental household they become responsible of many household chores from an early age.

### Insert Graph 1

Education seems to be inversely related to housework in general and with cooking and food related activities in particular. Women with primary school are an exception to this rule since they spend on average more hours doing housework and food related activities than women without schooling. Information received in school may give more value to a clean house. Cooking and food preparation seem to be always inversely related to education. In the case of rural women the differences in hours dedicated to cooking as educational level increases are more noticeable. In fact, women with high school level education in rural areas almost spend as many hours in cooking as women with the same level of education in urban areas. However, in the urban areas women who get education at the university level continue reducing hours.

### Insert table 3

Spouses are the women who spend more hours doing housework (table 3). In the rural areas they spend 75 hours a week on average in this type of chores, almost double number of hours of a regular work journey. In the urban areas the amount of hours is 65. Food preparation and cooking represents a higher proportion of the number of hours in housework in rural areas. In the rural sector, cooking takes about 38% of spouses hours in housework. Even female household heads, who are likely to participate in the labor force, spend 8.9 hours in the urban sector and 14.7 in the rural.

In men's case, kinship to household head does not make a difference in the number of hours cooking.

Daughters' number of hours in cooking activities is substantially (55%) lower. It is clear that daughters dedicate less hours to the activities directly related to food preparation. Daughters seem to be less involved in all activities related to tortilla elaboration. Younger generations may be less identified with such traditional activities, which play an important role in rural communities.

Household head mothers' spend fewer hours than spouses in housework, which may be related to their age and physical limitations. In some communities older women have a higher hierarchy which allows them more leisure time.

Labor force participation seems to be a major deterrent of cooking time. Women who receive a wage spend 20% less time cooking. Regarding other activities related to food, the reduction is even higher: 33% in the urban areas and 38% in the rural areas. Salaried women practically abandon some of the most time consuming activities for other women: all tortilla elaboration activities, starting the fire and preparing preserves. The time reduction in other food related activities is less important.

### Insert Graph 2

It is interesting to see that women who do not receive a salary but perform a remunerated activity spend more time in housework, food related activities and cooking than even women who do not have an activity outside the home. This may be due to the fact that their remunerated activity may be related to cooking or some other housework.

### Multivariate Model

In order to measure the influence of the main determinants of the time women spend cooking I estimate a model where the dependent variable is the number of hours the spouse of the

household head spends in cooking activities. Only spouses were included because the descriptive analysis showed they concentrate most cooking time.

The model includes three types of independent variables. The first type are the individual level variables (X), the second type are variable at the household level (Y) and finally I include one variable which is measured at the locality level (Z).

$$CookingTime_i = \alpha_0 + \beta_1 X + \beta_2 Y + \beta_3 Z + u_i$$

However, one of the household variables included in the analysis is a dummy variable (D) which is equal to one when the household makes its own tortillas, a strongly established tradition in the rural areas. The problem is that the dummy variable D is endogenous, i.e. there is a relation between D and  $u$ , e.g. because both are related to the same unobserved variable. It is possible that cultural factors may be affecting both: the decision to elaborate tortillas in the household and also the number of hours household spouses spend in cooking activities. Because there are no available measurements for cultural factors, I estimated a two stage least squares model to instrument the mentioned dummy variable. To calculate the standard errors I use Bootstrap methods. The complete list of variables included in the model are listed in Appendix 1.

The results of the model estimation are presented on table 4.

**Insert table 4**

The results of the model show that educational level of spouses is not important in determining the number of hours they spend cooking. However, holding a formal or salaried job is the most important individual variable. It reduces the number of hours spent in cooking in 2.9.

In terms of the household, the model confirmed that consuming homemade tortillas increases significantly the number of hours spouses dedicate to cooking. Since tortillas have a significant meaning in Mexican culture, this type of decision may be influenced by the availability of tortilla factories in the community but it is probably mainly determined by cultural tradition and the predominant significance of corn in indigenous cultures of Mexico.

The case of firewood use as fuel for cooking is different because it is mainly determined by household resources and access to other type of household appliances. The use of this type of fuel again increases significantly the time in cooking activities by spouses. It is a way in which the lack of resources in the household negatively impacts the use of time of spouses. Another appliance which seems important for time spent in cooking activities is a refrigerator. The fact that the house has a refrigerator reduces in almost 45 minutes.

Household composition is also important in determining spouses time cooking. As expected household size shows a positive impact on time spent cooking. Each additional member of the household increases time cooking in half an hour. However, if there are other adult women in the household, spouse's time cooking will be reduced in 45 minutes. A disabled person in the household is also a significant household characteristic in reducing spouses' time. In this case the result is probably due to the fact that the mother has to spend more time in activities related to the disabled person.

The model shows income by itself is not important. However, being able to pay someone who can help with cooking activities reduces time spent in cooking in 4 hours.

## Discussion

The analysis provided by this paper allows us to confirm the fundamental female role in providing food for all household members. In the rural areas women's participation in cooking

activities is even more intense. There are several characteristics of rural households which increase the cooking burden of rural women. One of them is the cooking tortillas at home. Even though this is a traditional practice in Mexican rural communities which few families would be willing to give up, most of the weight of the additional work load caused by the activities related to it is supported by women, especially spouses. Another feature prevalent in rural household is the lack of a modern fuel which would increase the productivity in the cooking activities. Time spent in starting the fire takes a significant amount of female hours of rural areas. Finally the lack of modern appliances is also a factor in determining time spent in cooking activities.

Women who have a formal job significantly reduce their time in cooking activities. This may be caused by an income effect which allows them to hire someone to help in cooking activities or to substitute some food for less labor intensive inputs or even meals outside. However, it may also be possible that women with a job hold a better negotiating position within the household and are more able to negotiate other members' participation in household work. Further research which takes in account time use of all household member will allow us to shed light on this topic.

Cooking is a special kind of housework. It is an activity where culture and tradition are involved. It may also be a source of power for women. It could be the type of housework women are less willing to give up and this feature may be in part responsible for the non significance of income level on spouses' cooking time.

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**Table 1**  
**Average Hours in Household Work and Food Preparation**

	Men			Women		
	Urban	Rural	Total	Urban	Rural	Total
<b>All Household Work</b>	<b>11.2</b>	<b>12.9</b>	<b>11.6</b>	<b>46.4</b>	<b>58.4</b>	<b>49.1</b>
<b>Food Preparation</b>	<b>0.8</b>	<b>1.2</b>	<b>0.9</b>	<b>8.4</b>	<b>16.3</b>	<b>10.2</b>
Cooking	0.7	0.3	0.6	7.8	9.9	8.3
Conserves	0.0	0.0	0.0	0.1	0.2	0.1
All activities included in tortilla making	0.0	0.1	0.0	0.3	3.9	1.1
Starting the fire	0.0	0.1	0.1	0.1	1.0	0.3
Preparing food complements	0.0	0.6	0.2	0.1	1.2	0.3
<b>Other food activities</b>	<b>2.4</b>	<b>4.5</b>	<b>2.9</b>	<b>13.2</b>	<b>16.0</b>	<b>13.8</b>
Food serving	0.3	0.1	0.3	2.4	2.9	2.5
Taking food to others	0.0	0.0	0.0	0.1	0.4	0.2
Dishwashing	0.3	0.1	0.3	3.5	3.9	3.6
Kitchen cleanup	0.2	0.1	0.2	2.7	2.7	2.7
Food shopping	1.0	1.1	1.0	2.5	2.2	2.4
Farm animal breeding	0.2	0.8	0.3	0.2	1.4	0.5
Fruit collection, fishing, hunting	0.1	2.2	0.6	0.0	0.8	0.2
Help someone eat	0.0	0.0	0.0	0.1	0.0	1.0
Help children eat	0.2	0.1	0.2	1.6	1.7	1.6
<b>Food Preparation and related activities</b>	<b>3.2</b>	<b>5.7</b>	<b>3.1</b>	<b>21.6</b>	<b>32.3</b>	<b>24.0</b>
<b>Time eating</b>	<b>7.4</b>	<b>7.0</b>	<b>7.3</b>	<b>7.5</b>	<b>7.3</b>	<b>7.5</b>
<b>All food related activities</b>	<b>10.6</b>	<b>12.7</b>	<b>11.1</b>	<b>29.1</b>	<b>39.6</b>	<b>31.5</b>

Source: Own elaboration based on the National Time Use Survey, 2002



**Table 2**

**Average number of female hours spent in food related activities and housework by age group and Urban/rural residence**

<b>Urban Women</b>						
<b>Age group</b>	<b>Total domestic housework</b>	<b>Cooking and Food preparation</b>	<b>Other food related activities</b>	<b>Cooking, food preparation and other related activities</b>	<b>Having meals</b>	<b>All food related activities (non food related housework not included)</b>
15 to 19	24.9	3.1	6.8	10.0	7.7	17.6
20 to 24	45.5	6.0	11.6	17.7	7.0	24.6
25 to 29	52.1	7.8	12.1	19.9	7.2	27.1
30 to 34	61.9	8.8	16.4	25.1	7.0	32.1
35 to 39	62.8	11.0	15.9	26.9	7.9	34.8
40 to 44	55.3	10.5	15.6	26.1	7.4	33.5
45 to 49	51.4	11.3	15.0	26.3	6.9	33.2
50 to 54	50.5	9.6	14.0	23.6	8.4	32.0
55 to 59	47.1	10.0	14.0	24.0	7.7	31.7
60 to 64	54.5	12.9	15.2	28.0	7.7	35.7
65 to 69	47.2	10.3	14.5	24.7	8.3	33.1
70 to 74	49.5	10.3	17.1	27.4	9.5	36.9
75 and more	23.1	5.3	7.3	12.6	8.1	20.7
<b>Rural Women</b>						
15 to 19	38.3	8.1	9.7	17.8	7.0	24.8
20 to 24	64.7	14.0	16.1	30.2	7.4	37.6
25 to 29	72.7	17.3	17.7	35.0	6.8	41.8
30 to 34	79.9	18.3	20.1	38.4	7.0	45.3
35 to 39	72.5	18.9	19.2	38.2	7.7	45.9
40 to 44	75.6	23.0	18.0	41.0	7.5	48.5
45 to 49	69.3	21.3	17.1	38.4	7.4	45.8
50 to 54	55.9	17.4	17.4	34.8	6.5	41.3
55 to 59	63.3	21.5	17.3	38.8	8.5	47.3
60 to 64	54.3	17.3	17.1	34.4	7.0	41.4
65 to 69	54.8	16.7	14.7	31.4	7.4	38.8
70 to 74	46.2	13.9	14.0	27.8	8.3	36.1
75 and more	36.0	11.8	10.8	22.7	7.2	29.8

Source: Own elaboration based on ENUT, 2002

**Table 3**

**Average number of female hours in housework and food related activities according to kinship and Urban/rural residence**

Women 15 and older	Household Head		Spouse		Daughter		Mother of household head	
	Urban	Rural	Urban	Rural	Urban	Rural	Urban	Rural
<b>All domestic Housework</b>	<b>48.2</b>	<b>49.1</b>	<b>63.2</b>	<b>75.1</b>	<b>28.3</b>	<b>34.4</b>	<b>39.9</b>	<b>33.6</b>
<b>Cooking and food preparation</b>	<b>8.9</b>	<b>14.7</b>	<b>11.6</b>	<b>20.7</b>	<b>3.5</b>	<b>7.0</b>	<b>7.1</b>	<b>8.2</b>
Cooking	8.3	8.9	10.8	12.5	3.1	4.2	6.3	5.4
Making conserves	0.1	0.2	0.1	0.3	0.0	0.1	0.1	0.1
Activities included in tortilla making	0.3	3.8	0.4	5.1	0.2	1.6	0.3	1.8
Starting the fire	0.1	0.9	0.2	1.4	0.1	0.4	0.2	0.7
Prepararing food complements	0.0	0.8	0.1	1.5	0.0	0.7	0.2	0.2
<b>Other related activities</b>	<b>12.9</b>	<b>13.3</b>	<b>17.3</b>	<b>19.6</b>	<b>7.3</b>	<b>8.7</b>	<b>12.0</b>	<b>9.7</b>
Food serving	2.3	2.1	3.3	3.7	1.2	1.3	1.7	1.9
Taking food to others	0.0	0.0	0.2	0.5	0.0	0.3	0.2	0.0
Dishwashing	3.5	3.3	4.5	4.7	2.0	2.3	3.2	2.5
Kitchen cleanup	3.0	2.3	3.5	3.3	1.3	1.6	2.9	1.5
Food shopping	2.5	2.3	3.3	2.8	1.3	1.2	2.5	0.6
Farm animals breeding	0.3	1.6	0.2	1.7	0.1	0.7	0.3	1.8
Fruit collection, fishing, hunting	0.1	1.1	0.0	0.9	0.0	0.4	0.1	1.3
Help someone eat	0.2	0.0	0.1	0.1	0.0	0.0	0.0	0.0
Helpchildren eat	0.9	0.7	2.1	2.1	1.2	0.8	1.1	0.1
<b>Food preparation and related activities</b>	<b>21.8</b>	<b>28.0</b>	<b>28.9</b>	<b>40.4</b>	<b>10.7</b>	<b>15.8</b>	<b>19.1</b>	<b>18.0</b>
<b>Eating</b>	<b>7.2</b>	<b>7.7</b>	<b>7.8</b>	<b>7.2</b>	<b>7.5</b>	<b>7.2</b>	<b>6.9</b>	<b>8.3</b>
<b>All food related activities</b>	<b>29.0</b>	<b>35.7</b>	<b>36.7</b>	<b>47.6</b>	<b>18.2</b>	<b>23.0</b>	<b>26.0</b>	<b>26.3</b>

Source: Own elaboration based on ENUT 2002.

Table 4  
Two Stage Least Square Model

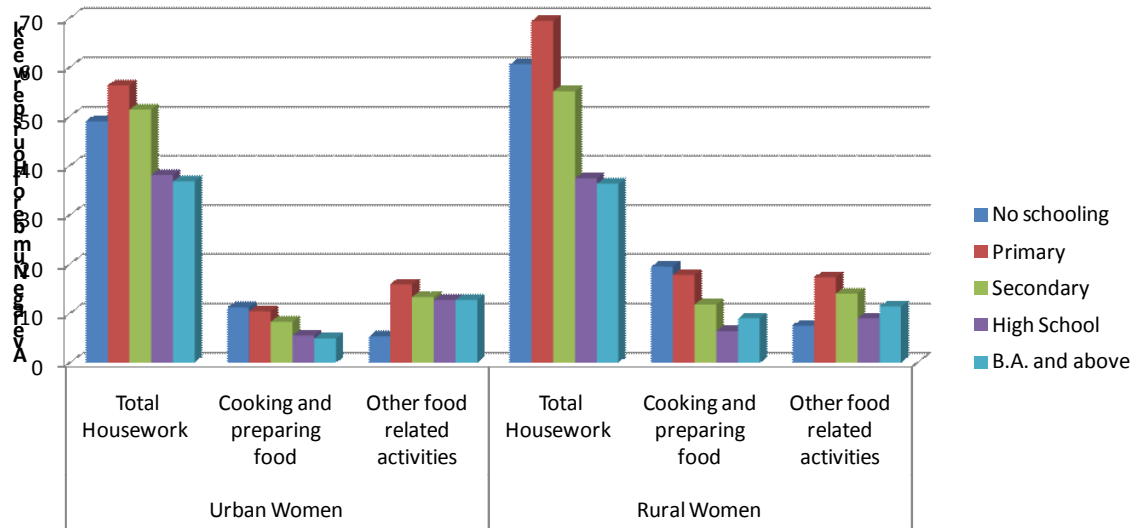
Dependent Variable: Number of Hours Cooking of Household Head's Spouses

<u>Variable</u>	<u>Coefficient</u>	<u>t<sub>1</sub></u>	
Age	0.3835	(5.51)	***
Squared Age	-0.0042	(-5.61)	***
Middle School	0.2089	(-0.56)	
High School	0.018	(0.03)	
Bachelor and More	-0.5715	(-0.95)	
Formal job (Wage)	-2.8878	(-7.91)	***
Non formal job	0.0615	(0.13)	
Non remunerated job	-0.8744	(-1.23)	
School attendance	-0.5417	(-0.75)	
Homemade tortillas <b>2</b>	6.5168	(8.73)	***
Nuclear Household	0.7255	(1.32)	
Household Size	0.5503	(4.49)	***
Children (< 5) in HH	-0.1248	(-0.48)	
Other Adult Women in HH	-0.7608	(-2.17)	**
Disabled person in HH	-1.4853	(-1.66)	*
Total Income	0	(-1.32)	
Squared Total Income	0	(0.08)	
% Food expend. Outside	-2.1785	(-2.64)	***
Number of Rooms	0.1712	(1.37)	
Refrigerator	-0.7285	(-1.59)	
Blender	0.6033	(1.084)	
Firewood	6.5657	(10.35)	***
Electricity	-0.0326	(0.04)	
Water inside	-0.3785	(-1.09)	
Paid Help	-4.1727	(-2.84)	***
Constant	1.5307	(2.11)	*
Number of Observations		3537	
R-squared		0.2423	

1) Standard Errors were calculated with Bootstrap

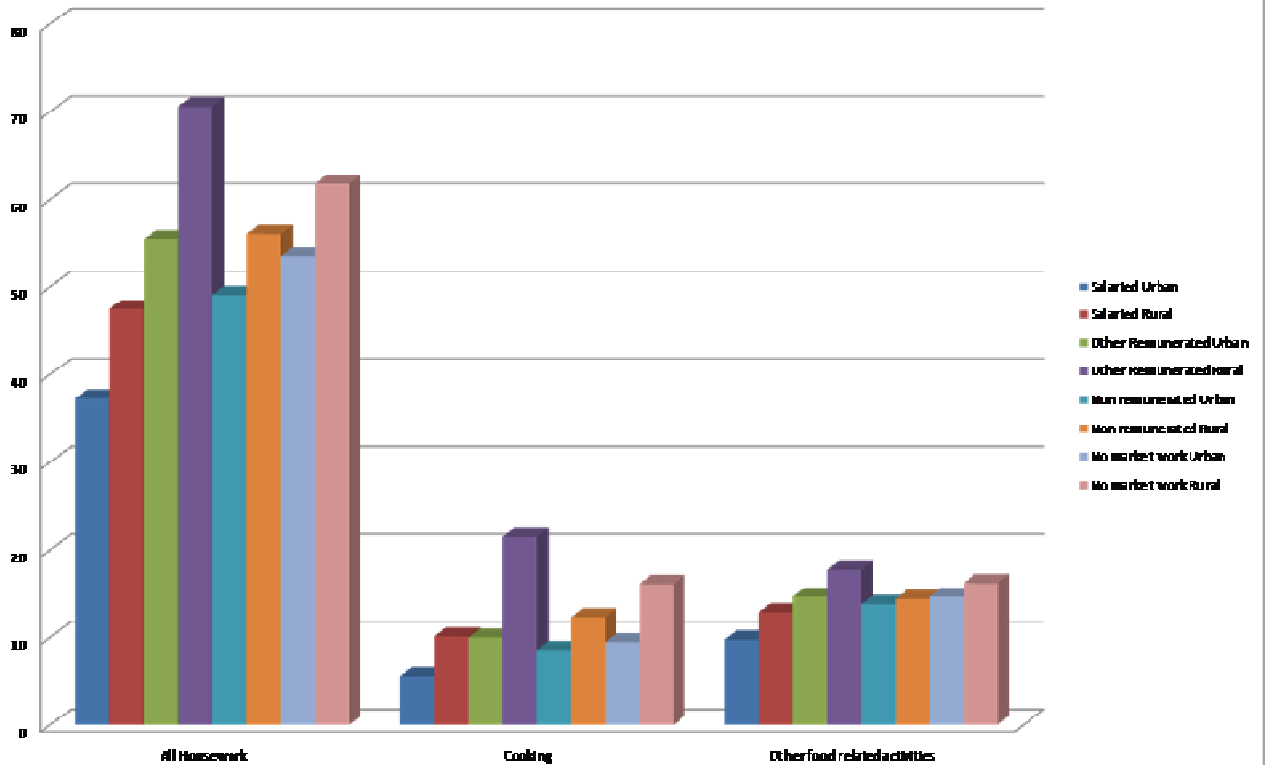
2) Instrumented variable

**Graph 1**  
**Average number of hours in Housework and other food related activities**



Source: National Survey of Time Use, Mexico, 2002

**Graph 2**  
**Total Hours in Housework and Cooking activities by Working Status**



## Appendix 1

Variables included in the model

### **Dependent Variable: Number of hours spent by household head spouse in cooking activities**

#### Independent Variables

##### Individual Level

Age

Squared Age

Educational Variables: Three dummies variables equal to 1 if the spouses educational level is in the level : Omitted variable: Primary school or less.

Middle school (Secunadria)

High Schol (Preparatoria)

Bachelor and more ( Superior)

Job Variables: dummies variables equal to 1 if the spousesjob fitted the category : Omitted variable: Doe not work

Formal job (with salary)

Non formal job (Other remunerated)

Non remunerated job

School attendance: Dummy variable equal to 1 if spouse attends school

##### Household Variables

Nuclear: Dummy variable equal to 1 if household is nuclear

Household size: Number of household members

Number of Rooms: Number of rooms in dwelling

Children less than five in household: Children below five in household

Other adult women in household: Number of women above 17 in household

Homemade tortillas: Dummy variable equal to 1 if at least one member of the household spend time in any of the activities involved in the elaboration of tortillas

Disabled person in household: Dummy variable equal to 1 if at least one member of the household is disabled.

Income: Total household income in pesos

% Food Expenditure: Percentage food expenditure outside in total food expenditure

Refrigerator: Dummy variable equal to 1 if the household has at least one refrigerator

Blender: Dummy variable equal to 1 if the household has at least one blender

Firewood: Dummy variable equal to 1 if the household uses firewood as fuel

Electricity: Dummy variable equal to 1 if the household has electicity

Water inside: Dummy variable equal to 1 if water availability inside the house or apartment

Paid help: Dummy variable equal to 1 if the household pays someone to help in the kitchen

Auto: Dummy variable equal to 1 if the household consumption of self production is greater than 0.

Community variables:

Rural: Dummy variable equal to 1 if the locality has less than 2,500 inhabitants