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The role of Women in Ecuadorian rural development: Women's contribution to household income in rural areas

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ABSTRACT

The following paper consists of two sections: The first one is a socio- demographic variables description whose purpose is to know women's and man's participation in labor market in rural and urban areas in Ecuador, and to show gender inequality in labor and household incomes. This statistics will determine a profile for rural women and will be used to elaborate equal gender opportunity programs. The second one has cross section models that estimate the determinant factors of labor and household incomes and their individual contribution. The whole study found that gender is a determinate variable when it comes to income and people's contribution to it.

The main source of information is Employment, and Unemployment survey, (Encuesta de Empleo, Desempleo y Subempleo -ENEMDU), from Instituto Nacional de Estadística y Censos (INEC).

Key words: gender, rural area, income.

Introduction

Through history, women have been enrolling in labor market, but there is still a gap between participation in comparison to men. In Ecuador, women receive a lower income than men¹ which is evidenced in a lower income contribution to their household². In 2010, women of urban areas provided 12.9% less than men, and in rural areas, 13.9% less. The decrease of this gap is one of the greatest challenges that this government included in the Plan for Development of Good Living (Plan de Desarrollo del Buen Vivir) (Secretaria Nacional de Planificación y Desarrollo (SENPLADES), 2009-2013) which will be carried out by means of a commitment to giving special attention to the social groups in need, with emphasis in gender equality and family care.

This investigation is supported by literature about different social and economic aspects and will be used in order to build indicators that will allow gender statistics visualization that will show women profile in rural and urban areas and the gaps in employment access, income, and others variables. Within the studies made in Ecuador, one stands out, developed by the Food and Agriculture Organization ((FAO), 2007) which provides a socio –demographic variables analysis that brings out the Ecuadorian women’s role in agriculture, environment, and rural production. An accurate profile of rural women was developed by the Food and Agriculture Organization (FAO), 2008) which analyzes the social and economic context of rural areas, and its demographic, migratory, labor, ethnic and educational structure. A recent study performed by Ballara M, Damianovic N (Damianovic, Parada S, 2010) for Latin America shows that the working women involvement in rural areas maintains the gender inequality and discrimination patterns which is evidenced on the salary differences that exist.

The first part of this study shows a descriptive analysis socio-demographic variable like employment and income. The main results show that women participation in Economically Active Population (EAP) in rural areas is lower than that from men. This difference is explained by the fact that for every 100 women that should be in the EAP there are only 56, and the rest spend their time doing unpaid domestic activities. It was also found that the most common activities for women in rural area are: unpaid domestic work and self-employment both of which are mostly in the field of agriculture, farming, fishing, and forestry. Women have an involvement of 64.5% of the total women population; meanwhile, men have an involvement of 71.3% of the total men population. In rural areas, 28% of the population that receives labor income is women, while the other 72% are men. The average percentage of recipients of non labor income³ is 75.8% for women and 24.2% for men.

¹ Conclusion obtains from employment and unemployment statistics (ENEMDU) and from results of cross section model. Check Section 1.1, 1.2 and 2 of this research.

² Idem

³ Non labor income variable is the sum of the following questions of ENEMDU: Question 71. - Investment income, Questions: 72b, 73b, 74b, retirement, orphan hood, widowhood, disease, donations income, Questions 75b, 76b .- Bonus for human development. And we don’t use the questions 77b and 78b. Disability bonus, because there isn’t complete data (December 2007, 2008, 2009, 2010)

The second part consists of cross sections model for each of the four years⁴ that have been analyzed. For the analysis, national level as well as urban and rural areas have been considered. These models show the determinant factors of amount of contribution of members household in the income household, but first we presents the determinant factors of labor income and household income.

The results indicates that the factors that determine the income are similar both in urban and rural areas; nonetheless, people's contribution in both areas is different. In relation to wage⁵ contribution of each member of household to household income, the results show that women in rural areas contribute less than men with 26.7%, 25.6%, 25.7% and 21.04% in the years 2007, 2008, 2009 and 2010. This gap is more evident in the amount on total contribution (labor income and non labor income) of each member of household to household income, due to the fact that women contribute less than men with 17.0%, 15.8%, 13.6% and 13.9% in the years 2007, 2008, 2009, and 2010. The decrease on both trends can be explained by the fact that the feminine proportion that is part of the Working-Age Population (which is not the same as the Economically Active Population) is superior to the masculine one.

SECTION I: EMPLOYMENT AND INCOME OF ECUADORIAN WOMEN IN RURAL AREAS

1.1. - Employment

In Ecuador, the average growth rate of Working-Age Population⁶ (WAP) from 2007 to 2010 was 2.9%. In the same period, the average contribution⁷ of rural population to the WAP is 32.9%. In this area, women represent an average of 49.3% in WAP.

In rural areas, women represent 36% of Economically Active Population (EAP)⁸, and men, 64%. These proportions are explained by the fact that for each 100 women that should be in the EAP there are only 56; the 44 women left perform an important role in society which is oriented to unpaid domestic activities. Due to the time women dedicate to perform these tasks, their incorporation to the PEA is slower and constitutes only a minority.

⁴ Methodological features of ENEMDU allow taking data of rural area only from the end of each year (2007-2010).

⁵ Labor income

⁶ According to the methodology of the ENEMDU (2010), population in this group is 10 years or more.

⁷ In research when mentioned " participation, average proportion or average grow rate" we refers to average participation, proportion or average grown rate of data December 2007, 2008,2009,2010.

⁸ People 10 years or more that worked at least an hour in the reference week, or although didn't have labor, was doing something (occupied), or people that don't have labor but were available to work (unoccupied).

On average, the labor force participation rate⁹ is around 57.8%. Women have an estimated rate of 45.5%, and men, of 70.6%. This gap is deeper in rural areas since women's rate comes to 43.4% and men's, to 74.4%.

The occupied labor force rate¹⁰ on December 2007 was 95.0%, and on December 2010 was 95.01%. In urban areas for female population the average rate is 92.6%, while for male, it is 95.6%. In rural areas, women's rate is around 95.2%, while men's is 97.8%.

The full¹¹ occupied labor force rate¹² on December 2007 was 34.2%, while on December 2010 was 37.3%. For female population the average rate is 28.2%, while for men is 39%. When the rate is analyzed by area and sex, the difference between men and women can be clearly observed since, on average, rural women have a full occupied labor force rate of 10%¹³, while rural men have a rate of 24.2%. In urban areas, women have an average rate of 36% compared to men's rate of 47.4%.

The full occupied labor force rate of the female part of the Economically Active Population dedicated to agriculture is less compared to the male part, since for every 100 women approximately 2 are employed, while for every 100 men, 12 are employed. It is important to mention that in rural areas, the underemployment rates for men and women are higher.

When analyzing the proportion of EAP in groups of age, area, and gender, in rural areas with people from 10 to 15 years and from 16 to 25 years, there is a higher percentage of male in the Economically Active Population in relation to urban areas. This indicates that a high portion of male population in rural areas does not have access to formal education, and, therefore, joins the labor market. A contrast with people from 26 to 65 years is marked by these facts since in urban areas there is a higher male participation in the Economically Active Population in comparison to rural areas. The population of above 66 years old in rural areas participates more in the Economically Active Population than in urban areas due to the fact that in urban areas there is a higher level of retirement (31% retired) than in rural areas (6.6% retired) (see Table 1).

⁹ According to the methodology of the ENEMDU (2010), the labor force participation rate is equal to divide EAP/WAP.

¹⁰ According to the methodology of the ENEMDU (2010), the occupied labor force rate is equal to divide occupied people/PEA.

¹¹ According to the methodology of the ENEMDU (2010), the full occupied force rate is equal to divide full occupied people to the EAP.

¹² According to the methodology of the ENEMDU (2010) the fully occupied people is the group of people 10 years or more that work at least the working day and earns higher incomes than minimum wage and doesn't want work more hours, or works less than 40 hours and their incomes are higher than minimum wage and don't want work more hours.

¹³ The wage of women is lower than minimum wage.

Table 1: Economically Active Population by age group and gender

| AGE | GENDER | dec07 | | dec08 | | dec09 | | dec10 | |
|---------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural |
| 10 - 15 years | Man | 1,33% | 5,32% | 1,24% | 4,05% | 0,86% | 3,91% | 0,66% | 3,23% |
| | Woman | 0,84% | 3,36% | 0,78% | 2,35% | 0,43% | 2,49% | 0,31% | 1,98% |
| 16 - 25 years | Man | 12,38% | 14,88% | 12,23% | 15,10% | 12,60% | 15,29% | 11,56% | 15,19% |
| | Woman | 8,62% | 7,76% | 8,82% | 8,16% | 8,82% | 7,77% | 7,49% | 7,28% |
| 26 - 35 years | Man | 13,42% | 11,10% | 12,89% | 11,23% | 12,73% | 9,73% | 13,14% | 10,24% |
| | Woman | 10,64% | 7,19% | 10,23% | 6,87% | 9,65% | 6,33% | 9,93% | 6,08% |
| 36 - 45 years | Man | 12,54% | 10,82% | 12,12% | 11,20% | 11,76% | 10,99% | 12,07% | 11,30% |
| | Woman | 9,81% | 6,97% | 10,21% | 6,94% | 10,08% | 7,00% | 10,18% | 6,64% |
| 46 - 55 years | Man | 9,71% | 8,64% | 10,08% | 9,23% | 10,12% | 9,53% | 10,76% | 10,11% |
| | Woman | 7,48% | 5,50% | 7,56% | 5,26% | 7,73% | 5,59% | 7,80% | 5,78% |
| 56 - 65 years | Man | 5,91% | 6,46% | 6,05% | 7,14% | 6,40% | 7,78% | 6,75% | 8,44% |
| | Woman | 3,42% | 3,62% | 3,52% | 3,72% | 4,30% | 4,18% | 4,48% | 4,25% |
| 66 or more | Man | 2,68% | 5,62% | 2,83% | 5,93% | 3,12% | 6,31% | 3,38% | 6,57% |
| | Woman | 1,22% | 2,78% | 1,44% | 2,82% | 1,41% | 3,10% | 1,51% | 2,91% |
| Total persons | | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% |

Source: INEC

Regarding to the occupation category, women in rural areas have a higher involvement in the following two categories: unremunerated domestic activities (average 12.9%) and self-employment (average 11.4%). In these areas, 90% is employed in the field of agriculture, livestock, hunting, and forestry. Regarding men in these areas, they have an 8.16% participation in the category of unremunerated domestic activities with a difference of 4.7% compared to women. The gap deepens even more when it comes to the contributing income of women to their homes (see Table 2).

Table 2: Economically Active Population by category of occupation for area and gender

| Occupation Category | Gender | dec07 | | dec08 | | dec09 | | dec10 | |
|-----------------------|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural |
| Government employee | Man | 5,69% | 1,54% | 5,85% | 1,84% | 5,64% | 2,04% | 6,26% | 2,25% |
| | Woman | 4,17% | 1,07% | 4,50% | 1,12% | 4,74% | 1,30% | 5,71% | 1,72% |
| Private employee | Man | 24,19% | 9,87% | 24,44% | 9,36% | 24,97% | 8,82% | 24,60% | 9,10% |
| | Woman | 14,01% | 4,40% | 14,67% | 4,43% | 14,82% | 4,10% | 14,55% | 4,47% |
| Outsourced employee | Man | 1,09% | 0,43% | 0,21% | 0,17% | 0,11% | 0,09% | 0,14% | 0,17% |
| | Woman | 0,35% | 0,04% | 0,10% | 0,05% | 0,06% | 0,04% | 0,07% | 0,07% |
| Journeyman or laborer | Man | 5,86% | 20,65% | 6,55% | 23,33% | 6,58% | 20,17% | 6,71% | 21,55% |
| | Woman | 0,39% | 2,92% | 0,41% | 3,54% | 0,41% | 2,80% | 0,38% | 2,27% |
| Patron | Man | 4,19% | 2,98% | 4,27% | 3,11% | 3,28% | 2,75% | 3,13% | 1,59% |
| | Woman | 1,42% | 0,70% | 1,39% | 0,67% | 1,08% | 0,44% | 0,92% | 0,35% |
| Self Employed | Man | 14,93% | 18,37% | 14,35% | 18,85% | 15,22% | 20,99% | 16,13% | 22,69% |
| | Woman | 12,39% | 12,03% | 12,47% | 11,03% | 12,63% | 11,32% | 12,69% | 11,26% |
| Unpaid household | Man | 2,11% | 8,85% | 2,05% | 7,33% | 1,80% | 8,71% | 1,52% | 7,75% |
| | Woman | 4,39% | 13,54% | 4,16% | 12,35% | 4,08% | 13,67% | 3,43% | 12,25% |
| Worker's unpaid | Man | 0,07% | 0,14% | 0,05% | 0,09% | 0,05% | 0,18% | 0,01% | 0,05% |
| | Woman | 0,21% | 0,18% | 0,07% | 0,12% | 0,11% | 0,14% | 0,05% | 0,08% |
| Assistant unpaid | Man | 0,11% | 0,31% | 0,07% | 0,24% | 0,02% | 0,20% | 0,01% | 0,17% |
| | Woman | 0,07% | 0,30% | 0,08% | 0,30% | 0,08% | 0,25% | 0,06% | 0,25% |
| Domestic worker | Man | 0,19% | 0,18% | 0,18% | 0,08% | 0,28% | 0,14% | 0,10% | 0,14% |
| | Woman | 4,16% | 1,50% | 4,12% | 1,99% | 4,03% | 1,86% | 3,53% | 1,81% |
| Total persons | | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% |

Source: INEC

According to the data of the Housing and Population Census of 2010, the higher percentage of people that belong to the Economically Active Population is concentrated by 51% in three activities (22% in agriculture, hunting and forestry; 18,5% in wholesale and retail trade, repair of motor vehicles, motorcycles; and 10.2% in personal and household goods manufacturing activities) out of the 17 included in the Standard Industrial Classification (SIC) Rev.3.

Between 2007 and 2010, 68.9% of the Economically Active Population in rural areas was employed in agriculture, hunting, and forestry, with an important women involvement (64.5%) compared to men (71.3%). Regarding commerce and manufacturing industries, their involvement is of 10.2% and 7.4% accordingly.

The majority of women in urban areas are dedicated to activities in wholesale and retail trade, motor vehicles, motorcycles repair, and personal and household goods activities (31.8%), manufacturing (11.9%), education (9.5%), and hotels and restaurants (9.7%); on the other hand, men are involved in wholesale and retail trade, motor vehicles, motorcycles repair, and personal and household goods activities (25%), manufacturing (14.1%), construction (12.3%) and transport, storage and communications (10.6%). It shows that women in rural areas are involved in activities that do not require major technical knowledge or high education levels.

Table3: Economically Active Population by economic activity for area and gender

| Economic Activities Rev.3,1 | Gender | dic07 | | dic08 | | dic09 | | dic10 | |
|--|--------|---------|---------|---------|---------|---------|---------|---------|---------|
| | | Urban | Rural | Urban | Rural | Urban | Rural | Urban | Rural |
| Agriculture, hunting, and forestry | Man | 5,10% | 45,44% | 5,34% | 46,00% | 4,99% | 45,89% | 4,59% | 46,51% |
| | Woman | 1,40% | 24,30% | 1,39% | 22,76% | 1,50% | 23,30% | 1,29% | 21,26% |
| Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods | Man | 15,28% | 2,88% | 14,23% | 2,97% | 13,97% | 3,15% | 14,03% | 2,93% |
| | Woman | 13,71% | 3,51% | 12,75% | 3,17% | 12,72% | 3,97% | 12,99% | 3,87% |
| Manufacturing | Man | 8,60% | 3,83% | 8,76% | 3,97% | 8,60% | 3,90% | 9,02% | 3,93% |
| | Woman | 5,15% | 2,72% | 4,93% | 2,74% | 4,46% | 2,44% | 4,58% | 2,63% |
| Construction | Man | 7,54% | 4,65% | 7,00% | 5,14% | 7,62% | 4,41% | 6,92% | 4,70% |
| | Woman | 0,24% | 0,08% | 0,27% | 0,10% | 0,33% | 0,11% | 0,34% | 0,06% |
| Transport, storage and communications | Man | 6,47% | 2,02% | 6,11% | 1,92% | 6,44% | 1,82% | 6,70% | 2,33% |
| | Woman | 1,32% | 0,21% | 1,03% | 0,24% | 1,29% | 0,16% | 0,95% | 0,17% |
| Hotels and restaurants | Man | 2,53% | 0,44% | 2,27% | 0,37% | 2,07% | 0,35% | 1,97% | 0,33% |
| | Woman | 4,13% | 1,25% | 4,00% | 1,36% | 3,98% | 1,27% | 3,78% | 1,38% |
| Education | Man | 2,74% | 0,75% | 2,48% | 0,98% | 2,43% | 0,90% | 2,82% | 0,98% |
| | Woman | 4,08% | 0,94% | 4,13% | 0,94% | 4,28% | 1,15% | 4,75% | 1,17% |
| Real estate, renting and business activities | Man | 3,88% | 0,53% | 3,77% | 0,66% | 3,98% | 0,50% | 4,24% | 0,49% |
| | Woman | 1,74% | 0,23% | 1,84% | 0,23% | 2,02% | 0,15% | 2,02% | 0,18% |
| The others | Man | 8,97% | 2,95% | 8,52% | 2,64% | 8,34% | 3,14% | 8,50% | 3,49% |
| | Woman | 7,11% | 3,24% | 11,18% | 3,80% | 10,98% | 3,39% | 10,50% | 3,60% |
| Total | | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% | 100,00% |

Source: INEC

1.2. - Rural Women's contribution in the amount of wage and household income.

From the total amount of people that receive labor income, on average, 36.1% are women against 63.9% of men. When analyzing by areas and gender, a 28% of rural

women have a labor income, against 72% of men; meanwhile, urban women reach a 39.5% participation against 60.5% or urban men.

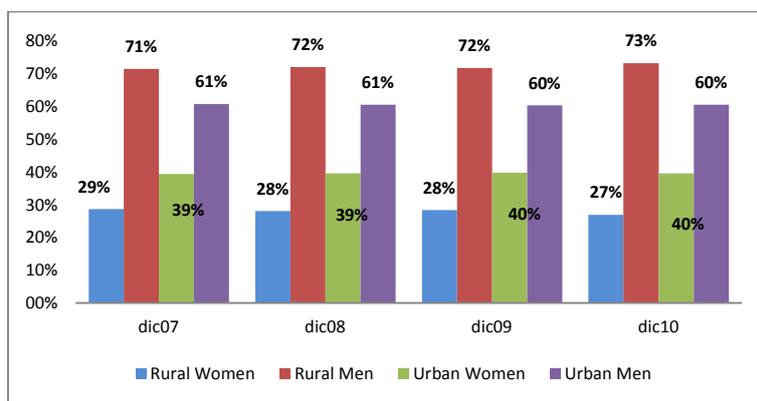


Figure1: *Percentage of labor income recipients by area and gender*

The urban head of household on average has a labor income of USD 474.30, and the rural head of household, USD 228.50. On the other hand, rural women that are head of household, on average, received a labor income of USD 150.6, while rural men that are head of household on average received USD 240.90 (see Graph 2).

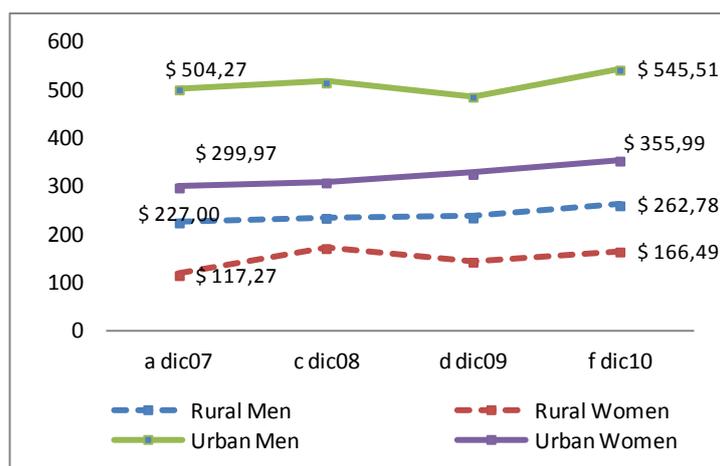


Figure2: *Average of the head of household income by area and gender*

The labor income that the members of a family receive (whether they are head of the household or not) is, on average, USD 335.40 (USD 392.60 in urban areas and USD 203.60 in rural areas; USD 282.20 for women and USD 365.60 for men). In rural areas, the average labor income for male recipients is USD 222.50, and for female recipients, USD 154.60 both of which are less than the urban and national averages.

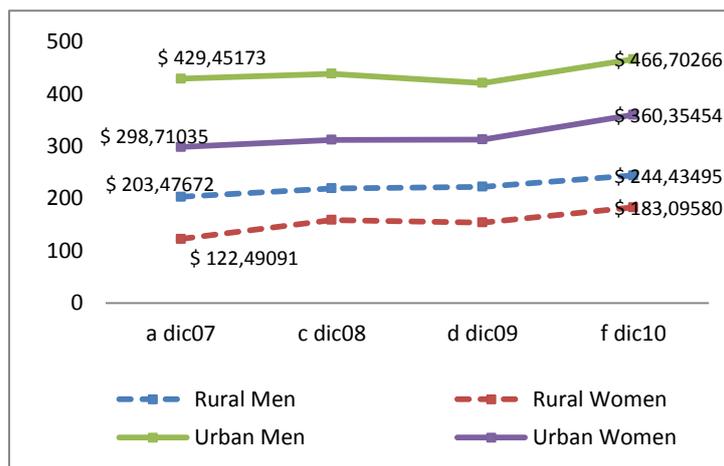


Figure3: Average labor income of recipient households

Graph 4 shows the average of labor income recipients among the total members of a household, by gender and area. In 2010, the involvement of women in rural area is 18% and 48% for males. Approximately the 36% has no income.

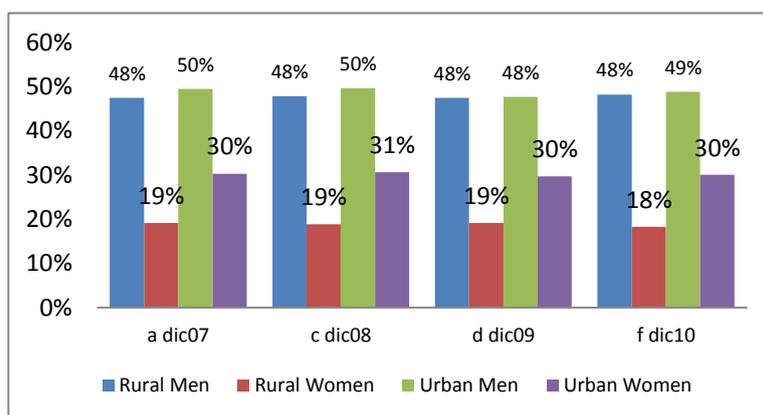


Figure4: Proportion of labor recipient in the household

Nationally, the labor income on average is 85.6% of the household income. The proportion of women is 77.2% and 89.9% for men. There is a difference in rural areas where the labor income for women is 67.8% of the household income and 92.8% for men.

As it is commonly known, the main activity in rural areas is agriculture. The average of labor income for women is USD 108.20 while the average of income in other activities is USD 196.30. Men obtain an income of USD 188.80 for agricultural activities and, USD 292.10 for other activities.

For women in rural areas, the economic activity that provides a higher income is the public administration and defense compulsory social security, with an average income of USD 469, but the occupied women participation is low (0.7%). Education follows with an average of USD 363.53, and 3% worker. Men received higher income, on

average, in mining and quarrying with USD 403.39, and 0.9% occupied; other activity by which men obtain a relatively high wage is the financial intermediation with an average of USD 362.70 and a representation of only 0.1%.

This analysis shows that the most common activity in rural areas is agriculture. In this economic activity, male labor force represents 71.3% with an average income of USD188.80; while female labor force represents 64.5% with an average income of the USD 108.20.

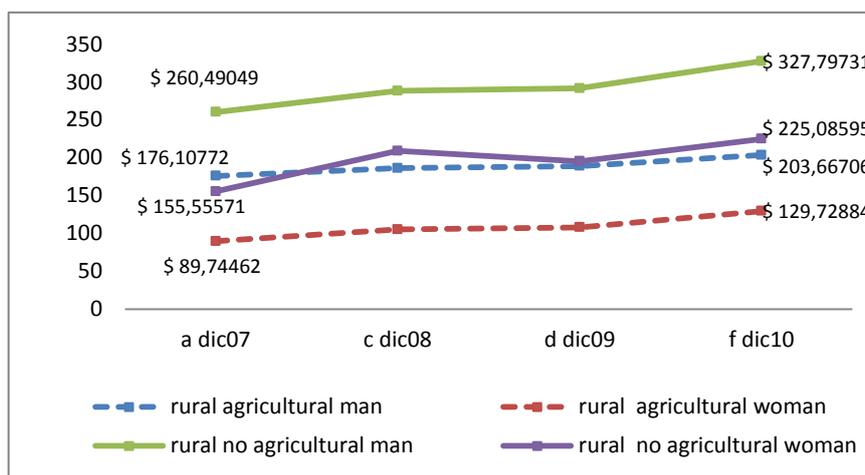


Figure5: Average of labor income of the recipient in rural area by gender and agricultural and non agricultural activity

The total average income of the household¹⁴ on December 2007 was USD 687.60, and on December 2010 this value reached USD 757. For rural areas, this value aimed USD 300.90 on December 2007 and, USD 373.50 on December 2010. In rural areas the total average income where the household head is a woman is USD 266, less than the average value in the case when the household head is a man, which is USD 352. In both cases, the value is lower than in urban areas¹⁵.

¹⁴ The total income is the sum of labor income and non labor income. The labor income of the main and secondary occupation is the sum income of employer, self employed, employees, domestic workers. Non labor income is the sum of investment income, retirement, disease, donation income and also bonus for human development.

¹⁵ Wage differences in the urban and rural areas aren't by work hours. In the urban area, women works 68 hours (working day and housework), against men that works 48 hours; in rural areas women works 68,3 and men work 46,4 hours.

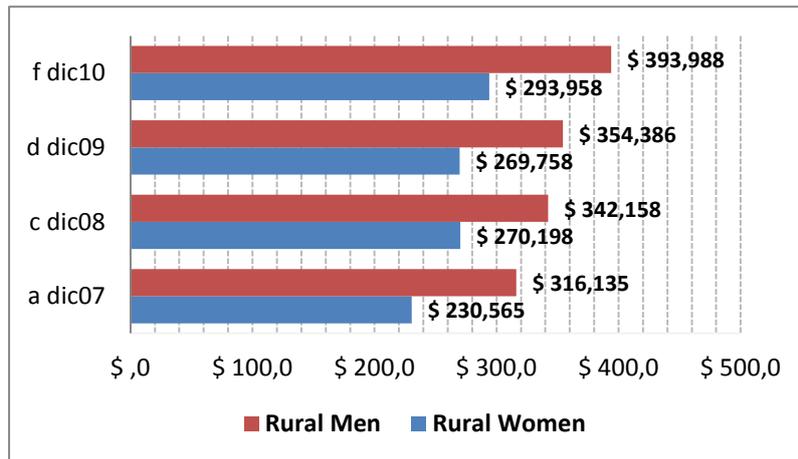


Figure6: Average household income according to the gender of the household head

Figure7 shows that the percentage of women that receive non labor income is remarkably superior than that of men, both in urban and rural areas. One example of this kind of income is the Human development bonus (Bono de Desarrollo Humano) which is widely known to have only women as receptors.

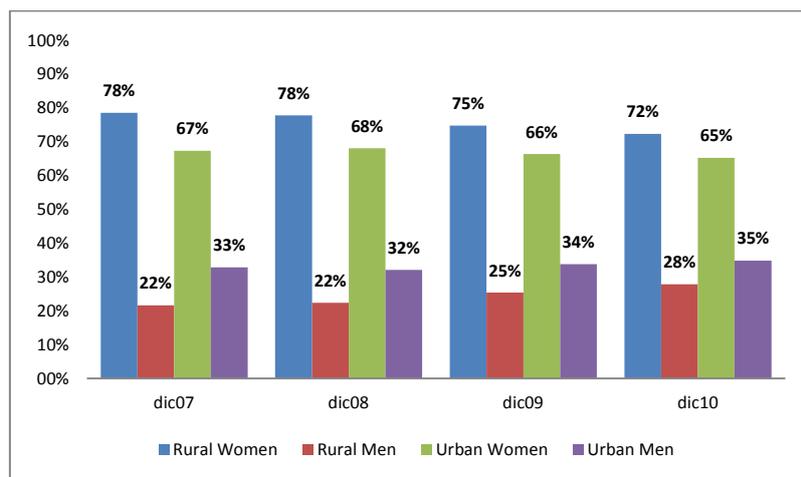


Figure7: Percentage of non labor recipients by area and gender

Regarding the total income, it shows that, on average, the household recipients get USD 307.86, an amount that is less than the average of those who are labor income recipients¹⁶. In urban areas, the same average is placed in USD 374.10, while in rural areas, in USD171.63 (the latter value is 54% less than former). If the total income is analyzed by gender, it shows that in rural areas, female recipients have an average monthly income of USD 116.34, and men, of USD 239.89, both in 2010 (See Figure8).

¹⁶ People earn total household income higher than labor income, in the average, there are person that earn non labor incomes that are lower, for example a person that receive only bonus for human development.

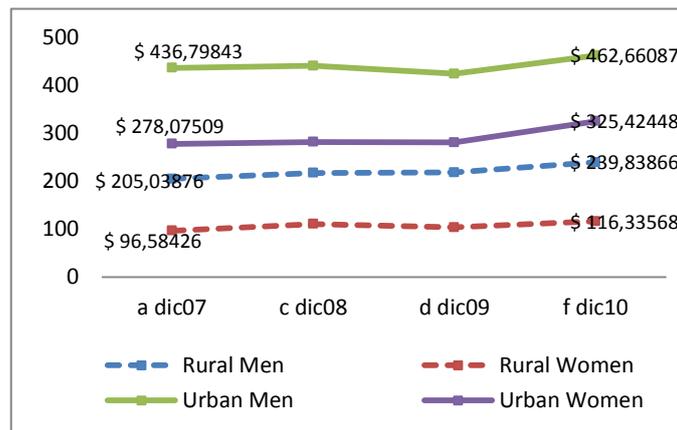


Figure8: Labor and non labor Income average of recipients in urban and rural areas by gender

SECTION II: DETERMINAT FACTORS FOR THE INCOME CONTRIBUTION

2.1. - Contribution to the labor income.

To determine whether the gender is a determinant factor in the contribution to labor income in the household, an econometric model of the *cross section* (Greene Williamn, 2002) will be estimated for each one of the four years of analysis. The data used is Economically Active Population from ENEMDU.

The exogenous variables are: gender, age, educational level, economic activity, and establishment size, affiliation to social security, employment stability, ethnic group, workers provided by contract firms, occupational group, marital status, and extra language spoken. These variables are recommended by specialized bibliography about income. The independent variables in the model do not have multi-co-linearity; however the co-linearity test was performed. It is worth to indicate that no series of time¹⁷ are used, so it is not necessarily to make the previous unitary roots test to identify that the variables used are not stationary.

2.1.1 Determinant factors of labor income

Before identifying the factors that affect the contribution of incomes in Ecuadorian households, especially in rural areas, it is necessary to understand how the exogenous variables affect the labor income.

¹⁷ We present a model for each year of analysis.

Annex A2 shows the results of the determinant factors of labor income and the dependent variable is the natural logarithm of the labor income ($\ln(y_{ijt})$)

The representation of the model will be as follows: $\ln(y_{ijt}) = \alpha + \sum_{i=1}^p \beta_i X_{ijt} + \beta_{p+1}(\text{edad}_{ijt})^2 + \varepsilon_{ijt}$

$$\ln(y_{ijt}) = \alpha + \sum_{i=1}^p \beta_i X_{ijt} + \beta_{p+1}(\text{age}_{ijt})^2 + \varepsilon_{ijt}$$

The categorical variables were transformed in dummies variables that take the values 0 or 1 in order to indicate the absence or presence of some categorical effect that may be expected to change the outcome. In *cross section model*, it is not considered as an attribute¹⁸ of each categorical variable (see details in Annex A1).

The results show (see Annex A2)¹⁹ that both in urban and rural areas, people's income increases²⁰ according to age, and then it starts to decrease. The establishment size is also a determinant factor in the level of income (more size, higher income), and it is more important in rural areas. In urban areas, people who are affiliated to Institute of Social Security of the Armed Forces (ISSFA) and who are also affiliated to a private social security have a higher income than people who are affiliated to the Institute of Social Security (IESS). However, on urban areas people who are affiliated to other health insurance or who are not affiliated to any of them, have a lower income than those who are affiliated to IESS.

People increase their labor income when they have a higher educational level, especially in urban areas. The labor income of people who are occupied in agriculture activities is lower than that of people who are occupied in commerce activities. This gap increased in the last years in the rural sector. In urban areas, the income of people dedicated to other community, social and personal service activities is considerably less than that of people dedicated to commerce wholesale, and retail trade; repair of motor vehicles, motorcycles; and personal and household goods activities. Similar results are obtained when people work in activities such as: education, electricity & energy, water, and sanitation²¹, etc. The income of people occupied in other activities²² is relatively equal to that of those in commerce, wholesale, and retail trade; repair of motor vehicles, motorcycles; and personal and household goods activities; it depends on the year of the analysis. The ethnic group variable is not an important determinant factor in labor income of Ecuadorians; nevertheless, in the rural sector people that belong to

¹⁸ The dummies variables were transformed in function of the needs of the analysis.

¹⁹ We taste the results for autocorrelation (Durbin Watson) and the heteroskedasticity (Breusch-Pagan/Cook-Weisberg) was corrected, this test was tasted also in the following models.

²⁰ Approximately until 47 years old

²¹ In the model this activities are called basic services Annex 2.

²² The variable called Other activities includes: Fishing, mining and quarrying, construction, hotels and restaurants, transport, storage and communications, financial intermediation, real state, renting and business activities, education, health and social work, activities of private households as employers and undifferentiated production activities of private households and extraterritorial organizations and bodies.

indigenous ethnic groups receive a lower income than people that belong to the mestizo ethnic group. Self-employed earn a lower income than workers provided by contract firms. People who spend more time in domestic activities earn a lower income. Marital status is also a determinant variable in the income of people. Single people have a lower income than the married, separated, or unmarried partners. People who speak another language in urban areas have a higher income than people who only speak Spanish. This fact was similar to rural areas.

2.1.2 Determinant factors of labor income contribution to the household income

The determinant factors for the salary shown in the Annex A2 are not necessarily the same as those that contribute in labor income of household, as shown in Table 4.

The endogenous variable is P_{ijt} is the proportion that each agent contributes to the total amount of labor household income, which is estimated by the following formula:

$$P_{ijt} = \frac{y_{ijt}}{\sum_{j=1}^{n_{it}} y_{ijt}} \quad (1)$$

Where

y_{ijt} Is the labor income of the member j of household i in the year t

$\sum_{j=1}^{n_{it}} y_{ijt}$ Is the total amount of labor income of the household i in the year t

n_{it} is the number of members with labor income of the household j in the year t

The representation of the model will be as follows: $P_{ijt} = \alpha + \sum_{i=1}^p \beta_i X_{ijt} + \beta_{p+1}(\text{edad}_{ijt})^2 + \varepsilon_{ijt}$

$$P_{ijt} = \alpha + \sum_{i=1}^p \beta_i X_{ijt} + \beta_{p+1}(\text{age}_{ijt})^2 + \varepsilon_{ijt}.$$

From 2007 to 2010 the same exogenous variables are considered. They are adjusted to the same sample frame, methodology of a data collection, and size of sample. Besides, a special interest relies on the knowledge of the evolution of determinant factors of labor income.

Table 4: Contribution in the labor of household income

| Year | Global | | | | Urban | | | | Rural | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 |
| gender | -0.2183*** | -0.2076*** | -0.204*** | -0.1907*** | -0.2018*** | -0.1914*** | -0.1841*** | -0.1848*** | -0.2673*** | -0.2556*** | -0.2571*** | -0.2104*** |
| age | 0.0166*** | 0.0147*** | 0.0131*** | 0.0123*** | 0.0192*** | 0.0177*** | 0.0152*** | 0.0149*** | 0.0147*** | 0.0125*** | 0.0127*** | 0.0112*** |
| age^2 | -0.0001*** | -0.0001*** | -0.0001*** | 0*** | -0.0001*** | -0.0001*** | -0.0001*** | -0.0001*** | -0.0001*** | 0*** | 0*** | 0*** |
| establishment size (big) | 0.0412*** | 0.0291*** | 0.043*** | 0.0601*** | 0.0446*** | 0.0242*** | 0.0431*** | 0.0617*** | 0,018 | 0.0476*** | 0,0121 | 0.0318*** |
| social security (army) ISSFA | -0,0267 | -0,022 | 0,0052 | 0,1006*** | -0,017 | -0,0217 | 0,0148 | 0,119*** | -0,1053 | 0,0837 | -0,0297 | 0,0144 |
| health insurance | -0.0633*** | -0.0501*** | -0.043** | 0,0062 | -0.073*** | -0.0425** | -0.0447* | 0,0184 | 0.1412** | -0.0953 | 0,1084 | 0,0003 |
| other health insurance | -0.0394* | -0.1035*** | -0.057*** | -0,001 | -0,0342 | -0.1015*** | -0.0493** | 0,0215 | -0.1942*** | -0.1097* | -0,037 | -0.0452*** |
| employment stability | 0.0281*** | 0.0438*** | 0.0432*** | 0.0398*** | 0.0276*** | 0.0472*** | 0.0462*** | 0.0477*** | 0.0273*** | 0.0275*** | 0.0399*** | 0.0172*** |
| primary education | 0,0052 | -0,0101 | 0,0069 | 0,0101 | 0,0103 | -0,0064 | 0,0342* | 0,004 | 0,0208* | 0,0043 | 0,0111 | 0.0333*** |
| secondary education | 0.0254** | -0.0095 | 0,0132 | 0,0029 | 0,0276 | -0,0074 | 0.0412** | -0,0096 | 0.0432*** | 0,0108 | 0,012 | 0.0434*** |
| tertiary education | 0,0087 | -0.0264** | 0,0009 | -0,0119 | 0,0111 | -0,0255 | 0,023 | -0,0257 | 0,0228 | 0,0008 | 0.0438* | 0.0419* |
| master | -0,0018 | -0,0084 | 0.071*** | 0,0332 | 0,0078 | 0,0019 | 0.1069*** | 0,0295 | 0,1387 | -0,0286 | 0,1898 | 0.0357 |
| Other activities | 0,0104 | 0,0053 | 0,0004 | -0,0025 | 0,0056 | -0,0053 | -0,0047 | -0,0072 | 0,0142 | 0.0448** | -0,004 | -0,0027 |
| Public Administration and defense; compulsory social security | 0.0593*** | 0.0897*** | 0.0639*** | 0.0424*** | 0.0478*** | 0.0825*** | 0.0498*** | 0,0259 | 0.1022*** | 0,056 | 0.1003*** | 0.0913*** |
| electricity, gas and water supply | 0,0095 | -0,0106 | 0,0026 | -0.0258*** | -0,0076 | -0.0311*** | -0,0165 | -0.0439*** | 0.093*** | 0.0686*** | 0.0761*** | 0.0471* |
| Manufacturing | 0.0234*** | 0,0096 | 0,006 | -0,0005 | 0.0175* | -0,0024 | -0,0081 | -0,0149 | 0,0226 | 0,0211 | 0.0345* | 0,0259 |
| Other community, social and personal service activities. | 0.0216** | -0,0027 | 0,0016 | -0.0249*** | 0,0105 | -0.0195* | -0.019* | -0.0343*** | 0,0352 | 0,0287 | 0.0664*** | -0,028 |
| Agriculture, hunting and forestry | 0.0659*** | 0.0721*** | 0.0663*** | 0.0404*** | 0.0292** | 0.0262* | 0.0318** | -0,0074 | 0.05*** | 0.0515*** | 0.0425** | 0,0134 |
| Other occupational groups | -0,0054 | 0,0099 | 0.0392*** | 0,013 | -0,0201 | -0,0054 | 0,0205 | -0,0012 | -0,0092 | 0,0173 | 0.0794*** | 0.0439* |
| Service workers and shop and Installation, Maintenance and Repair Craft Workers | -0,0042 | 0,0084 | 0.0496*** | 0,0108 | -0,0165 | -0,0035 | 0.0379*** | 0,0039 | 0,0138 | 0,0275 | 0.0632*** | 0,0139 |
| workers | -0.0432*** | -0.0637*** | 0,0115 | -0.0349*** | -0.05*** | -0.079*** | 0,0124 | -0.0337*** | -0,0307 | 0,0013 | -0,0035 | -0.0441** |
| indigenous people | -0.0408*** | -0.0467*** | 0,011 | -0.0215** | -0.0541*** | -0.0653*** | -0,0006 | -0.0373*** | -0,0251 | 0,0146 | 0,0224 | 0,0184 |
| other ethnic group | 0.0301*** | 0,0169 | 0,0175 | 0.0322** | 0,0261 | 0,0116 | 0,0202 | 0,0128 | 0.025* | 0,0121 | 0,0119 | 0.0433*** |
| afro-ethnic | 0.0267*** | 0.0173** | 0,0103 | 0.0315*** | 0.0375*** | 0,0153 | 0,0105 | 0.036*** | 0,0009 | 0,0186 | 0,0203 | 0.0257*** |
| self employed | 0.0372*** | 0,0084 | 0.0252** | 0,0021 | 0.0389*** | 0,0163 | 0.0228* | -0,0091 | 0.0324* | -0,0059 | 0,0171 | 0,0303 |
| Domestic hours | -0,0082 | -0.0258*** | -0,0013 | -0,0077 | -0.0304*** | -0.0573*** | -0.0335*** | -0.0366*** | 0.0316*** | 0.0435*** | 0.0623*** | 0.0441*** |
| Married | 0 | 0,0003 | 0 | 0 | -0.0034** | 0,0003 | 0 | 0 | 0 | -0,0001 | 0 | 0,0003 |
| separated/divorced | -0.0137** | -0.0161** | -0.0246*** | -0.0281*** | -0.0253*** | -0.0184** | -0.0291*** | -0.0439*** | 0,0068 | -0.0183* | -0.0236** | -0,0029 |
| unmarried partners | 0.149*** | 0.1711*** | 0.1668*** | 0.1678*** | 0.1397*** | 0.1692*** | 0.1644*** | 0.1632*** | 0.17*** | 0.1729*** | 0.1699*** | 0.1673*** |
| also indigenous language | 0.0228*** | 0.0292*** | 0.0127* | 0.028*** | 0,0071 | 0.0268*** | -0,002 | 0,0066 | 0.0523*** | 0.0328*** | 0.0426*** | 0.0727*** |
| speak a foreign language | 0.0378*** | 0.0277** | 0.0271* | 0.0256* | 0,0174 | 0,034 | 0,011 | 0.0449* | 0.0378** | 0,0139 | 0,0214 | -0,0062 |
| care animal | 0,017 | -0,0191 | 0,0159 | 0,0079 | 0,0124 | -0,0216 | 0,0176 | 0,0109 | 0,0584 | 0,0617 | -0,0311 | 0,0018 |
| Const | -0.1258*** | -0.1573*** | -0.0846*** | -0,0198 | -0,1272 | -0,0339 | -0.141* | -0,0896 | -0.1231*** | -0.187*** | -0.0888*** | -0,0197 |
| Number of obs | 21875 | 20171 | 20786 | 22551 | 13029 | 12598 | 12356 | 13311 | 8846 | 7573 | 8430 | 9240 |
| F(32,21414) | 152 | 153,6 | 127,06 | 138,82 | 80,36 | 89,05 | 63,99 | 74,95 | 84,26 | 75,06 | 75,14 | 74,47 |
| Prob >F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj R-squared | 0.5703 | 0.6138 | 0.513 | 0.516 | 0.5148 | 0.576 | 0.4431 | 0.4767 | 0.7275 | 0.7485 | 0.6906 | 0.6384 |
| Root MSE | 0.30559 | 0.30078 | 0.3081 | 0.30444 | 0.3022 | 0.29681 | 0.30507 | 0.30128 | 0.30942 | 0.30644 | 0.30879 | 0.30643 |

Source: Authors' calculations based on data from ENEMDU.

*** significant at level 1% level ** significant at the 5% level, * significant at the 10% level

Table 4 shows that gender is the most important determinant factor of contribution of the household labor income (absolute values). Urban women, on December 2010, contributed with 18.5% less than men. The low contribution of women to labor income is more considerable in rural areas. In 2007, women in these areas contributed less than 26.7% in relation to men 25.6%, 25.7% and 21.04% for 2008, 2009 and 2010 respectively.

Other variables such as education level and ethnic group are not determinant factors for the income contribution. In the first case, because inside the household there is a homologation of education level between its members that belong to the Economically Active Population, so the educational level average gap index is 16% for both urban and

rural areas; and in the second case, because, on average, a household has members of the same ethnic group.

People who work in public sector have a greater contribution than people who work in Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods. In the other economic activities there is not a clear difference with people who are dedicated to commerce; this fact can be explained because the same members of the household can enter different economic fields.

People of rural areas that contribute less to the total household income are the ones that help in agricultural activities or take care of animals. These people contributed less 12.3% in 2007, 18.7% in 2009 and 8.9 in 2010. If some categories of the marital status were decisive for income, these would have opposite directions in the contribution to the total household income. Most single people are unique contributors of the household, and, therefore, their contribution equals 100%.

2.2. - Contribution of total income²³

As a complement, it is important to study the total income of the Ecuadorian household. There are 1.4 million people that receive income of any kind (labor or non-labor); that is, 6% more than the proportion that receives only labor income.

The cross section models attempt to measure women contribution to total household income. For each year, the estimation considers the Working Age Population (WAP). The exogenous variables considered for the models are the same as the formers, except for economic activity since 32%²⁴ of the WAP does not adjust to this classification.

2.2.1 Determinant factors for total household income (labor and non-labor)

Before analyzing the factors that affect the total income of the Ecuadorian household, it is important to consider the determinant factors for the income of people on the WAP. The model is:

$$\ln(Z_{ijt}) = \alpha + \sum_{i=1}^{p-3} \beta_i X_{ijt} + \beta_{p-2}(\text{age}_{ijt})^2 + \varepsilon_{ijt} ,$$

This takes the total income as the natural logarithm, and the nominal variables as dummies.

It can be observed (Annex A3) that both in urban and rural areas, the income of people increased during the years²⁵. The size of the establishment is also a determinant factor for the household income, especially in rural areas. People that are affiliated to ISSFA, or to a private health insurance, have a higher income compared to those who are affiliated to IESS. In urban areas, people that have a private health insurance or have no

²³ Labor and non labor.

²⁴ WAP isn't EAP.

²⁵ Approximately until 64 years old

affiliation earn less than those that are affiliated to IESS; meanwhile, in the rural sector the income of these two groups is similar.

People who have a higher level of education receive a better income. This fact is more notorious in urban areas, in comparison to rural areas. The results also show that in urban areas, people with stability in their jobs have a higher income than those who do not have it.

In the analysis by ethnic group, in rural areas, Indigenous and afro-american people have lower incomes; while in urban areas, only the afro-americans accomplish this feature. On the other hand, self-employed people earn less than workers provided by contract firms, both in urban and rural areas. Besides, in urban areas people dedicated to domestic activities receive a lower income compared to those in rural areas.

Marital status is also a variable that determines income. Single and unmarried partners have similar incomes, and, on average, a lower income than the married and separated ones. According to language as determinant factor, people who speak a foreign language receive a higher income than those who only speak Spanish. In rural areas, the condition of speaking an indigenous language is a determinant to keep a low income. Finally, regarding the occupational group, people who spend their time in agricultural and fishing activities receive a lower income than those who work as plant and machine operators and assemblers.

2.2.2 Analysis of the contribution of the familiar income

Like in the last case, income factors are determined and not important but were decisive of the total income of household. The main reason is that income is individually estimated for each worker. The contribution depends on cultural factors, education level, and the organizational set up; furthermore, government policies are aimed to support people with lower incomes.

The endogenous variable PT_{ijt} used with percentage estimation of a person accumulated of house hold total income, it is estimated as:

$$PT_{ijt} = \frac{Z_{ijt}}{\sum_{j=1}^{n_{it}} Z_{ijt}} \quad (2)$$

Where

Z_{ijt} Is the total income (labor and non-labor) of member j of the house hold i in the year t

$\sum_{j=1}^{n_{it}} Z_{ijt}$ Is the gathered of id the accumulated of household total income i in the year t

n_{it} This is the number of members with total income house hold in the year t

Referring to the equation (2) the models adjusting would it be: $PT_{ijt} = \alpha + \sum_{i=1}^{p-3} \beta_i X_{ijt} + \beta_{p-2}(age_{ijt})^2 + \varepsilon_{ijt}$, which results that shows in this Table

In the same case of the earning wages, we use the same variable in the four years of the analysis.

Table 5: Total income contribution of household

| Explanatory Variables | Global | | | | Urbano | | | | Rural | | | |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 |
| gender | -0.1606*** | -0.1556*** | -0.135*** | -0.1337*** | -0.1548*** | -0.1526*** | -0.1327*** | -0.1291*** | -0.1704*** | -0.1582*** | -0.1363*** | -0.1399*** |
| age | 0.0115*** | 0.0103*** | 0.0093*** | 0.0088*** | 0.0116*** | 0.0105*** | 0.0088*** | 0.0088*** | 0.0113*** | 0.0101*** | 0.01*** | 0.0088*** |
| age^2 | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** | 0*** |
| establishment size (big) | 0.2017*** | 0.1978*** | 0.2181*** | 0.226*** | 0.1909*** | 0.1891*** | 0.2055*** | 0.2106*** | 0.2123*** | 0.1996*** | 0.2401*** | 0.2583*** |
| social security (army) ISSFA | 0.0342*** | 0.0279*** | 0.0562*** | 0.104*** | 0.0346*** | 0.026*** | 0.0628*** | 0.1089*** | 0.033 | 0.0592* | | 0.021 |
| health insurance | -0.0429*** | -0.0279*** | -0.0398*** | -0.0184* | -0.0495*** | -0.0293*** | -0.0489*** | -0.0216** | 0.017 | 0.018 | 0.0757** | 0.071 |
| other health insurance | 0.006 | -0.0198*** | | -0.012 | 0.006 | -0.0217** | | -0.011 | 0.004 | 0.0548** | | -0.015 |
| employment stability | 0.0538*** | 0.0768*** | 0.0477*** | 0.0533*** | 0.0714*** | 0.0948*** | 0.0628*** | 0.0718*** | 0.0226*** | 0.0286*** | 0.0221*** | 0.0152*** |
| primary education | 0.0182*** | 0.021*** | 0.0182*** | 0.0146*** | 0.0321*** | 0.0339*** | 0.0396*** | 0.0299*** | 0.0134** | 0.0182*** | 0.0136*** | 0.0098* |
| secondary education | 0.0424*** | 0.0412*** | 0.0349*** | 0.0319*** | 0.0589*** | 0.0616*** | 0.0632*** | 0.0515*** | 0.0263*** | 0.0221*** | 0.016** | 0.0143** |
| tertiary education | 0.095*** | 0.0986*** | 0.0821*** | 0.081*** | 0.112*** | 0.1142*** | 0.1106*** | 0.0993*** | 0.0756*** | 0.0956*** | 0.0587*** | 0.0627*** |
| master | 0.1455*** | 0.1554*** | 0.1804*** | 0.1694*** | 0.1657*** | 0.166*** | 0.2119*** | 0.1913*** | 0.073 | 0.3011** | 0.1589** | 0.1446** |
| Other occupational groups | -0.214*** | -0.2107*** | -0.2082*** | -0.2123*** | -0.2154*** | -0.2072*** | -0.2168*** | -0.2188*** | -0.2416*** | -0.2536*** | -0.211*** | -0.2236*** |
| Service workers and shop and market sales workers | -0.0807*** | -0.0517*** | -0.0605*** | -0.0464*** | -0.0772*** | -0.0477*** | -0.0634*** | -0.0474*** | -0.1011*** | -0.0768*** | -0.0513*** | -0.0485*** |
| Installation, Maintenance and Repair Craft Workers | -0.0218*** | -0.0291*** | | -0.002 | -0.0225** | -0.0372*** | | -0.0157* | -0.0361*** | -0.016 | 0.008 | 0.000 |
| Skilled agricultural and fishery workers | -0.0694*** | -0.0483*** | -0.0482*** | -0.0427*** | -0.0525*** | -0.0465*** | -0.0346*** | -0.0351*** | -0.1022*** | -0.0719*** | -0.0676*** | -0.0561*** |
| Skilled agricultural and fishery workers | | | | | | | | | | | | |
| indigenous people | 0.006 | -0.006 | | -0.001 | 0.0205* | 0.005 | 0.016 | 0.008 | 0.004 | -0.0121* | | -0.002 |
| other ethnic group | 0.0176*** | 0.0183*** | | 0.0191*** | 0.0231*** | 0.0208*** | | 0.0187*** | 0.004 | 0.009 | 0.004 | 0.0204*** |
| afro-ethnic | 0.0245*** | 0.013*** | 0.0182*** | 0.0187*** | 0.0188** | 0.0122* | 0.0178** | 0.0156** | 0.0347*** | 0.0171** | | 0.012 |
| self employed | 0.0749*** | 0.0658*** | 0.0947*** | 0.0894*** | 0.0395*** | 0.0338*** | 0.0556*** | 0.0511*** | 0.1325*** | 0.1264*** | 0.159*** | 0.1535*** |
| Domestic hours | -0.0003*** | -0.0002*** | -0.0003*** | -0.0003*** | -0.0003*** | -0.0002*** | -0.0003*** | -0.0003*** | -0.0003*** | -0.0002*** | -0.0002*** | -0.0003*** |
| Married | 0.055*** | 0.0513*** | 0.04*** | 0.0294*** | 0.045*** | 0.0456*** | 0.035*** | 0.0254*** | 0.0741*** | 0.0575*** | 0.0455*** | 0.0334*** |
| separated/divorced | 0.2106*** | 0.2225*** | 0.2095*** | 0.2062*** | 0.1996*** | 0.2184*** | 0.2011*** | 0.204*** | 0.2345*** | 0.2316*** | 0.2288*** | 0.2069*** |
| unmarried partners | 0.0895*** | 0.0847*** | 0.0773*** | 0.074*** | 0.0787*** | 0.0755*** | 0.0662*** | 0.0599*** | 0.111*** | 0.1026*** | 0.0952*** | 0.0979*** |
| also indigenous language | -0.021*** | | -0.007 | -0.0147** | | -0.007 | 0.014 | -0.002 | 0.004 | -0.0227*** | -0.0132* | -0.0146** |
| speak a foreign language | 0.0382*** | 0.0295*** | 0.0118* | 0.0319*** | 0.0354*** | 0.0264*** | 0.009 | 0.0285*** | 0.0672** | | 0.036 | 0.036 |
| care animal | -0.1269*** | -0.1627*** | -0.1443*** | -0.1049*** | -0.0954** | -0.1487*** | -0.2123*** | -0.1512*** | -0.1298*** | -0.1678*** | -0.1317*** | -0.0984*** |
| Const | 0.1534*** | 0.1559*** | 0.1611*** | 0.1704*** | 0.1431*** | 0.1383*** | 0.1597*** | 0.1651*** | 0.1834*** | 0.1963*** | 0.1511*** | 0.1804*** |
| Number of obs | 59788 | 62443 | 63393 | 67768 | 33217 | 34755 | 34392 | 36921 | 26571 | 27688 | 28461 | 30847 |
| F(32,21414) | 1678,14 | 1893,85 | 1770,25 | 2008,9 | 915,07 | 1021,34 | 912,72 | 1042,39 | 801,92 | 927,95 | 932,51 | 1047,9 |
| Prob >F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj R-squared | 0,6896 | 0,72016 | 0,68752 | 0,71104 | 0,68208 | 0,70752 | 0,66528 | 0,69168 | 0,71792 | 0,75968 | 0,75056 | 0,76512 |
| Root MSE | 0,21738 | 0,26507 | 0,26622 | 0,26428 | 0,27305 | 0,26683 | 0,27089 | 0,26842 | 0,26581 | 0,25919 | 0,25405 | 0,25532 |

Source: Authors' calculations based on data from ENEMDU.

*** significant at level 1% level ** significant at the 5% level, * significant at the 10% level

As we can see in Table 5, the variable gender contribution is no longer the most important one in household income, since WAP proportions is not the same as EAP, and it is substantially more important for women (27%) than for men (14%). The sample includes women with a higher income than men which means the gap decreases. Nevertheless, women in urban areas in the year 2010 contributed with 13% less than men. On this year this fact has shortened compared to the last years. The low contribution of women in the total income is more evident in rural areas, and, in 2007, women in these areas contributed less: 17% in relation with men, 15.8%, 13.6% and 14% for this year 2008, 2009, 2010 respectively.

Another important fact for the total income contribution of the household is size because workers in a company with more than 100 employees contribute more than (between 19% and 26%) the workers in a company with less than 100 employees.

The education level is decisive for the contribution of the total income. Inside the household, the education level is low among the members of the EAP that have an income. The average gap of level of education is up to 25% in urban areas and 28% in rural areas.

The ethnic group of afro-americans contributes with less for the total income in households, compared to the mestizo ethnic group, but this group is giving the same amount of contribution as the indigenous and others

People with employment stability have a higher contribution than those who have not, which is more remarkable in urban areas (7%) than in rural areas (2%). On the other hand, people who help in agricultural tasks and take care of animals, have a lower contribution (between 10% and 17%) that the ones who do not do these activities.

The derived variables of the civil state are also crucial for the total income since married contribute between 3% and 7%, more than the unmarried ones. The separated ones contribute approximately 20% more than the unmarried ones, and unmarried partners more than the single ones (between 6% and 11%).

SECTION III: CONCLUSIONS.

In rural areas, Ecuadorian women represent 36% of Economically Active Population (EAP), and men, 64%. These proportions are explained by the fact that for each 100 women that should be in the EAP there are only 56; the 44 women left perform an important role in society which is oriented to unpaid domestic activities. Due to the time women dedicate to perform these tasks, their incorporation to the PEA is slower and constitutes only a minority.

On average, rural women have a full occupied labor force rate of 10%, while rural men have a rate of 24.2%. In urban areas, women have an average rate of 36% compared to men's rate of 47.4%.

Women in rural areas have a higher involvement in the following two categories: unremunerated domestic activities (average 12.9%) and self-employment (average 11.4%). In these areas, 90% is employed in the field of agriculture, livestock, hunting, and forestry. Regarding men in these areas, they have an 8.16% participation in the category of unremunerated domestic activities with a difference of 4.7% compared to women. The gap deepens even more when it comes to the contributing income of women to their homes

Between 2007 and 2010, 68.9% of the Economically Active Population in rural areas was employed in agriculture, hunting, and forestry, with an important women involvement (64.5%) compared to men (71.3%). Regarding commerce and manufacturing industries, their involvement is of 10.2% and 7.4% accordingly.

As it is commonly known, the main activity in rural areas is agriculture. The average of labor income for women is USD 108.20 while the average of income in other activities is USD 196.30. Men obtain an income of USD 188.80 for agricultural activities and, USD 292.10 for other activities.

The head of household in urban areas holds an average income of USD 474.3, while in the rural sector the average household income is USD 228.5. Rural women that are head of household gain USD150.6 as average income, whereas men in the same condition gained 240.9 on average.

Cross section econometric models show that rural women wages had a lower contribution to household income compared to men. In fact, the percentage gaps have been 26, 7% in 2007, 25, 6% in 2008, 25,7% in 2009, and 21,04% in 2010. In the case of total income rural women gaps, the percentage has been 17, 0% in 2007, 15,8 % in 2008, 13,6% in 2009 and 13, 9% in 2010. The gaps might be related to the fact that the female share of the working age population (not EAP) is larger than the male's share.

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SECTION IV: ANNEXS

Annex A1.- Dummies variables

| Pivot variables | Dummies Variables |
|--|---|
| Men | gender |
| Establishment with less 100 employees | stablishment size (big) |
| People that receive social security | social security (army) ISSFA |
| | health insurance |
| | other health insurance |
| People that don't have employment stability | employment stability |
| Without any level education | primary education |
| | secondary education |
| | tertiary education |
| | master |
| Wholesale and retail trade; repair of motor vehicles, motorcycles and personal and household goods | Other activities |
| | Public Administration and defense; compulsory social security |
| | electricity, gas and water supply |
| | Manufacturing |
| | Other community, social and personal service activities. |
| | Agriculture, hunting and forestry |
| Plant and machine operators and assemblers | Other occupational groups |
| | Service workers and shop and market sales workers |
| | Installation, Maintenance and Repair Craft Workers |
| | Skilled agricultural and fishery workers |
| | Skilled agricultural and fishery workers |
| Ethnic group (mestizo) | indigenous people |
| | other ethnic group |
| | afro-ethnic |
| Employee | self employed |
| Marital Status (single) | Married |
| | separated/divorced |
| | unmarried partners |
| Speaks only spanish | also indigenous language |
| | speak a foreign language |
| Another activity to helps the maintenance | take care of animals |

Elaborated and Source: INEC

Annex A2.- Determinant factors of labor income

| Explanatory Variables | Global | | | | Urbano | | | | Rural | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 |
| gender | -0.3758*** | -0.2976*** | -0.369*** | -0.2764*** | -0.2546*** | -0.245*** | -0.3221*** | -0.2327*** | -0.499*** | -0.4282*** | -0.4716*** | -0.3661*** |
| age | 0.0521*** | 0.0515*** | 0.0472*** | 0.0391*** | 0.0558*** | 0.0574*** | 0.0541*** | 0.0402*** | 0.0446*** | 0.0407*** | 0.0343*** | 0.0365*** |
| age^2 | -0.0005*** | -0.0005*** | -0.0005*** | -0.0004*** | -0.0006*** | -0.0006*** | -0.0005*** | -0.0004*** | -0.0004*** | -0.0004*** | -0.0004*** | -0.0004*** |
| establishment size (big) | 0.3559*** | 0.2937*** | 0.3933*** | 0.2875*** | 0.3225*** | 0.2614*** | 0.368*** | 0.2597*** | 0.4487*** | 0.4364*** | 0.4618*** | 0.443*** |
| social security (army) ISSFA | 0.2383*** | 0.1143*** | 0.1708*** | 0.2395*** | 0.2178*** | 0.0941*** | 0.1657*** | 0.2132*** | 0.3549* | 0.287 | 0.1828 | 0.4903*** |
| health insurance | 0.3043*** | 0.3671*** | 0.4353*** | 0.4673*** | 0.2597*** | 0.3516*** | 0.384*** | 0.4646*** | 0.7469*** | 0.4471* | 0.5509*** | 0.42* |
| other health insurance | -0.3006*** | -0.1254*** | -0.1245** | -0.1933*** | -0.3274*** | -0.1598*** | -0.1294** | -0.2659*** | -0.0935 | 0.2301 | -0.1889 | -0.0569 |
| employment stability | 0.132*** | 0.1938*** | 0.1701*** | 0.1818*** | 0.1701*** | 0.2327*** | 0.203*** | 0.216*** | 0.0273 | 0.0617*** | 0.064*** | 0.0748*** |
| primary education | 0.2454*** | 0.2793*** | 0.1781*** | 0.2143*** | 0.3329*** | 0.2867*** | 0.1766*** | 0.2546*** | 0.142*** | 0.2145*** | 0.1112*** | 0.1515*** |
| secondary education | 0.4493*** | 0.4938*** | 0.3593*** | 0.3789*** | 0.5113*** | 0.4812*** | 0.3421*** | 0.3899*** | 0.2926*** | 0.4043*** | 0.266*** | 0.3266*** |
| tertiary education | 0.7358*** | 0.7508*** | 0.5652*** | 0.6087*** | 0.7815*** | 0.7295*** | 0.5386*** | 0.6063*** | 0.5779*** | 0.6372*** | 0.4387*** | 0.5682*** |
| master | 1.1931*** | 1.208*** | 1.0653*** | 1.0384*** | 1.247*** | 1.1746*** | 1.0218*** | 1.0319*** | 0.6633* | 1.3031*** | 1.2284*** | 0.9929*** |
| Other activities | -0.0176 | 0.0241 | -0.0194 | 0.0144 | -0.016 | 0.0246 | -0.0132 | 0.017 | 0.0683 | 0.1316*** | -0.0236 | 0.0229 |
| Public Administration and defense; compulsory social security | -0.0736** | 0.0881*** | 0.1113*** | 0.1675*** | -0.0377 | 0.1017*** | 0.1232*** | 0.1996*** | 0.0355 | 0.1465 | 0.1792* | 0.0076 |
| electricity, gas and water supply | -0.2934*** | -0.1831*** | -0.1425*** | -0.1135*** | -0.2813*** | -0.1892*** | -0.1515*** | -0.1151*** | -0.0468 | -0.0041 | -0.0401 | -0.135** |
| Manufacturing | -0.0676*** | -0.028 | -0.0663*** | -0.0594*** | -0.0374 | -0.0299 | -0.0682*** | -0.0501** | -0.0003 | 0.1562*** | 0.0537 | -0.0821* |
| Other community, social and personal service activities. | -0.1982*** | -0.1171*** | -0.1227*** | -0.1191*** | -0.1842*** | -0.1337*** | -0.1447*** | -0.1207*** | -0.2099*** | 0.0315 | -0.05 | -0.1615*** |
| Agriculture, hunting and forestry | -0.385*** | -0.2795*** | -0.2758*** | -0.2385*** | -0.2687*** | -0.1683*** | -0.1857*** | -0.1714*** | -0.165*** | -0.0488 | -0.1116** | -0.2741*** |
| Other occupational groups | 0.2003*** | 0.137*** | 0.1971*** | 0.1726*** | 0.2034*** | 0.1489*** | 0.1745*** | 0.1733*** | 0.0839 | 0.049 | 0.2237*** | 0.0626 |
| Service workers and shop and market sales workers | -0.0245 | 0.0333 | 0.0147 | 0.0072 | -0.023 | 0.0506* | -0.0063 | -0.0029 | 0 | -0.0461 | 0.0735 | -0.0094 |
| Installation, Maintenance and Repair Craft Workers | -0.2291*** | -0.2761*** | -0.1373*** | -0.1945*** | -0.2291*** | -0.2631*** | -0.137*** | -0.1887*** | -0.2039*** | -0.3618*** | -0.1824*** | -0.1928*** |
| Skilled agricultural and fishery workers | -0.2624*** | -0.2832*** | -0.2504*** | -0.2577*** | -0.2478*** | -0.2719*** | -0.2707*** | -0.2926*** | -0.2496*** | -0.3316*** | -0.2118*** | -0.1095** |
| indigenous people | -0.0649** | -0.0726** | -0.0679** | -0.039 | -0.0056 | 0.1022** | 0.0237 | 0.0193 | -0.0528 | -0.155*** | -0.0938** | -0.002 |
| other ethnic group | -0.0125 | 0.0412** | 0.0007 | 0.0332* | -0.0067 | 0.0347 | 0.0352 | 0.0219 | -0.061* | 0.0331 | -0.1658*** | 0.0211 |
| afro-ethnic | -0.0606** | -0.0575** | -0.0603** | -0.0228 | -0.0546 | -0.0724** | -0.0706** | -0.0096 | -0.1045* | -0.0467 | -0.0624 | -0.0657 |
| self employed | -0.4796*** | -0.4728*** | -0.4863*** | -0.5203*** | -0.442*** | -0.4693*** | -0.5223*** | -0.5439*** | -0.4616*** | -0.4135*** | -0.3649*** | -0.4156*** |
| Domestic hours | -0.0009*** | -0.0064*** | -0.0002*** | -0.0023*** | -0.0058*** | -0.0076*** | -0.0002*** | -0.002*** | -0.0002 | -0.0033*** | -0.0003*** | -0.004*** |
| Married | 0.1675*** | 0.2212*** | 0.1357*** | 0.1913*** | 0.2157*** | 0.2463*** | 0.139*** | 0.2117*** | 0.1629*** | 0.1543*** | 0.12*** | 0.1396*** |
| separated/divorced | 0.0941*** | 0.1169*** | 0.1378*** | 0.1122*** | 0.0859*** | 0.1095*** | 0.122*** | 0.1095*** | 0.1521*** | 0.1238*** | 0.147*** | 0.1099*** |
| unmarried partners | 0.0661*** | 0.133*** | 0.0799*** | 0.1401*** | 0.0773*** | 0.1225*** | 0.0347 | 0.111*** | 0.1084*** | 0.1366*** | 0.1593*** | 0.1979*** |
| also indigenous language | -0.0379 | -0.1557*** | -0.1596*** | -0.1215*** | 0.0236 | -0.1031* | 0.1508** | 0.0854 | -0.0592 | -0.1227*** | -0.2445*** | -0.1996*** |
| speak a foreign language | 0.407*** | 0.2727*** | 0.2534*** | 0.2419*** | 0.3854*** | 0.272*** | 0.2442*** | 0.2458*** | 0.6346*** | 0.1215 | 0.3654* | 0.0952 |
| care animal | -0.612*** | -0.5069*** | -0.3714*** | -0.4058*** | -1.1015*** | -0.8032*** | -0.7034*** | -1.0275*** | -0.5024*** | -0.4518*** | -0.3006*** | -0.2549*** |
| Const | 4.0447*** | 4.1433*** | 4.3034*** | 4.5235*** | 3.9165*** | 4.0141*** | 4.1764*** | 4.4576*** | 4.144*** | 4.3264*** | 4.5449*** | 4.6524*** |
| Number of obs | 21448 | 19789 | 20471 | 22264 | 12814 | 12386 | 12177 | 13154 | 8634 | 7403 | 8294 | 9110 |
| F(32,21414) | 524,44 | 554,05 | 488,52 | 592,41 | 296,98 | 330,21 | 281,54 | 310,38 | 113,32 | 118,46 | 144,85 | 125,15 |
| Prob >F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj R-squared | 0,4461 | 0,48 | 0,4401 | 0,4392 | 0,4326 | 0,4673 | 0,4319 | 0,437 | 0,3004 | 0,3437 | 0,3118 | 0,3102 |
| Root MSE | 0,79277 | 0,73504 | 0,74973 | 0,71868 | 0,75361 | 0,70924 | 0,72068 | 0,6862 | 0,85504 | 0,78402 | 0,79406 | 0,77602 |

Elaborated and Source: INEC

*** significant at level 1% level ** significant at the 5% level, * significant at the 10% level

Annex A3.- Determinant factors of the labor and non labor

| Explanatory Variables | Global | | | | Urbano | | | | Rural | | | |
|--|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 | 2007 | 2008 | 2009 | 2010 |
| gender | -0.5147*** | -0.5384*** | -0.492*** | -0.4294*** | -0.4333*** | -0.4662*** | -0.4083*** | -0.3139*** | -0.6192*** | -0.6147*** | -0.5793*** | -0.5829*** |
| age | 0.0333*** | 0.0254*** | 0.0266*** | 0.0226*** | 0.0337*** | 0.0274*** | 0.0304*** | 0.0251*** | 0.0302*** | 0.0224*** | 0.0207*** | 0.0183*** |
| age^2 | -0.0002*** | -0.0002*** | -0.0002*** | -0.0001*** | -0.0002*** | -0.0002*** | -0.0002*** | -0.0002*** | -0.0003*** | -0.0002*** | -0.0002*** | -0.0001*** |
| establishment size (big) | 0.5333*** | 0.5343*** | 0.6349*** | 0.5513*** | 0.438*** | 0.4437*** | 0.5352*** | 0.4409*** | 0.7461*** | 0.718*** | 0.8356*** | 0.8438*** |
| social security (army) ISSFA | 0.4717*** | 0.4222*** | 0.5897*** | 0.5345*** | 0.4229*** | 0.3609*** | 0.5138*** | 0.4655*** | 0.4673*** | 0.6894*** | 0.7553*** | 0.9629*** |
| health insurance | 0.3412*** | 0.4708*** | 0.4993*** | 0.4443*** | 0.2556*** | 0.4207*** | 0.4205*** | 0.3979*** | 0.7699*** | 0.6443*** | 0.4771*** | 0.5921*** |
| other health insurance | -0.4168*** | -0.2066*** | -0.2443*** | -0.5256*** | -0.5848*** | -0.3404*** | -0.3994*** | -0.6863*** | -0.1628* | -0.046 | -0.0699 | -0.182*** |
| employment stability | 0.1557*** | 0.234*** | 0.1999*** | 0.2092*** | 0.2291*** | 0.2986*** | 0.2546*** | 0.2654*** | 0,0237 | 0.0465*** | 0.0384** | 0,016 |
| primary education | 0.4078*** | 0.4073*** | 0.3436*** | 0.3515*** | 0.4409*** | 0.4248*** | 0.4061*** | 0.4104*** | 0.1664*** | 0.1974*** | 0.116*** | 0.1343*** |
| secondary education | 0.8283*** | 0.8452*** | 0.7774*** | 0.7484*** | 0.7918*** | 0.8021*** | 0.7723*** | 0.7174*** | 0.418*** | 0.4733*** | 0.3748*** | 0.3749*** |
| tertiary education | 1.4392*** | 1.4638*** | 1.3181*** | 1.2922*** | 1.324*** | 1.3266*** | 1.2129*** | 1.1583*** | 1.1318*** | 1.2611*** | 1.0222*** | 1.0297*** |
| master | 1.9015*** | 1.94*** | 1.8888*** | 1.7533*** | 1.7648*** | 1.7547*** | 1.7432*** | 1.5855*** | 1.3391*** | 2.082*** | 1.753*** | 1.7574*** |
| Other occupational groups | -0.4458*** | -0.489*** | -0.5126*** | -0.4336*** | -0.312*** | -0.3187*** | -0.3616*** | -0.2896*** | -0.8756*** | -1.0593*** | 0.9112*** | -0.893*** |
| Service workers and shop and market sales workers | -0.039* | 0,0347 | -0,0301 | 0,0022 | -0.0564** | 0.0483* | -0.0512** | -0,0331 | -0,0321 | -0.1292*** | -0,0167 | 0,0389 |
| Installation, Maintenance and Repair Craft Workers | -0.1925*** | -0.1852*** | -0.1328*** | -0.163*** | -0.2302*** | -0.2009*** | -0.1765*** | -0.2064*** | -0.1051** | -0.2118*** | -0.0634* | -0.0716** |
| Skilled agricultural and fishery workers | -0.3678*** | -0.3128*** | -0.3172*** | -0.2783*** | -0.2682*** | -0.2199*** | -0.2618*** | -0.2569*** | -0.3823*** | -0.4446*** | -0.338*** | -0.2692*** |
| indigenous people | -0.1554*** | -0.1272*** | -0.1492*** | -0.2384*** | -0,0132 | 0,0647 | 0,039 | -0,0345 | -0.1195*** | -0.1447*** | -0.15*** | -0.159*** |
| other ethnic group | -0,0178 | 0.1026*** | 0.071*** | -0,0188 | -0,0305 | 0.1017*** | 0.0803*** | 0,0046 | -0,0261 | 0.0846*** | -0.0822*** | 0,0028 |
| afro-ethnic | -0.1013*** | -0.0831*** | -0.0458*** | -0.0713*** | -0.107*** | -0.1142*** | -0.0474* | -0.0705*** | -0.1243*** | -0,0384 | -0.0888*** | -0.0754*** |
| self employed | -0.2205*** | -0.203*** | -0.1872*** | -0.2413*** | -0.2653*** | -0.2472*** | -0.2793*** | -0.335*** | -0.1558*** | -0.133*** | -0.0486*** | -0.081*** |
| Domestic hours | -0.0005*** | -0.0009*** | -0.0004*** | -0.0007*** | -0.0006*** | -0.0012*** | -0.0005*** | -0.0006*** | 0,000 | -0,0001 | -0,0001 | -0.0004*** |
| Married | 0.0954*** | 0.0932*** | 0.0494*** | 0.1006*** | 0.1424*** | 0.1486*** | 0.0934*** | 0.172*** | 0.0718*** | 0.038*** | 0.0193 | 0,0224 |
| separated/divorced | 0.2443*** | 0.257*** | 0.2296*** | 0.2226*** | 0.202*** | 0.2259*** | 0.1906*** | 0.1847*** | 0.2851*** | 0.2714*** | 0.2156*** | 0.2197*** |
| unmarried partners | -0.0472*** | -0.041*** | -0.0519*** | 0,0143 | -0.0346* | -0,0227 | -0.0395** | 0,0208 | 0,0344 | -0,003 | 0,0291 | 0.0805*** |
| also indigenous language | -0.1102*** | -0.2043*** | -0.14*** | -0.1526*** | 0,0268 | -0,0325 | 0,0862 | -0,0215 | -0.0987*** | -0.1662*** | -0.1315*** | -0.1305*** |
| speak a foreign language | 0.5465*** | 0.392*** | 0.4306*** | 0.4445*** | 0.4996*** | 0.3587*** | 0.3863*** | 0.4146*** | 0.9359*** | 0.7198*** | 0.6279*** | 0.302*** |
| care animal | -0.5051*** | -0.5022*** | -0.4423*** | -0.3433*** | -0.5843*** | -0.9118*** | -0.6665*** | -0.6663*** | -0.35*** | -0.3138*** | -0.3045*** | -0.2192*** |
| Const | 3.9908*** | 4.2222*** | 4.248*** | 4.4281*** | 3.9664*** | 4.1472*** | 4.1437*** | 4.3629*** | 4.3128*** | 4.6841*** | 4.6758*** | 4.8233*** |
| Number of obs | 35083 | 36235 | 37484 | 39940 | 19747 | 20468 | 20404 | 21583 | 15336 | 15767 | 17080 | 18357 |
| F(32,21414) | 583,02 | 737,62 | 696,18 | 816,29 | 295,68 | 366,27 | 320,57 | 368,76 | 307,91 | 439,11 | 515,26 | 566,81 |
| Prob >F | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 |
| Adj R-squared | 0,560184 | 0,606288 | 0,586296 | 0,617304 | 0,530264 | 0,565488 | 0,53992 | 0,577456 | 0,470152 | 0,567936 | 0,559504 | 0,603432 |
| Root MSE | 0,85443 | 0,80364 | 0,79378 | 0,77637 | 0,83417 | 0,79018 | 0,78059 | 0,75249 | 0,8176 | 0,75139 | 0,7364 | 0,772636 |

*** significant at level 1% level ** significant at the 5% level, * significant at the 10% level

Elaborated and Source: INEC