↑ Henry Merchán, 44, works days and nights making charcoal next to the railway, in Cerrito (Valle del Cauca)

↑ John Jaiber Núñez works as a welder in Armenia (Quindío).

Chapter 5
Labor Markets in Colombia

Liliana Olarte
Ximena Peña

5.1. Introduction

→ A high percentage of a household's income is generated through their involvement in labor markets. Thus, studying labor market dynamics is crucial for understanding household welfare, particularly in a developing country such as Colombia. Traditionally, labor markets in Colombia have been studied based on the information collected systematically by the Household Survey applied during the last three decades by the National Administrative Statistics Department (DANE for its acronym in Spanish). This survey serves as the source for official labor market statistics, such as employment, unemployment and informality rates, among others.

The Colombian Longitudinal Survey by Universidad de los Andes (ELCA, acronym for its name in Spanish) is a complementary source to the Household Survey. ELCA's labor market module contains two interesting innovations. First, although ELCA's urban sample covers only part of the information contained in the Household Survey, it includes a series of new questions that had never been applied in Colombia; they will

↑ Jose Fernando Mejía Mejía works as plant operator at Fabricato in Medellín (Antioquia).

help us to understand other aspects that, until now, had remained unexplored in the Colombian labor market. Some of these new questions are: reservation wages, an approach to actual work experience and several questions on the first job, including wage and employment type. Even with the baseline data, before having repeated observations of the same individual over time, these questions improve our understanding of a person's employment history from the beginning, allowing us to track transitions and individual decisions.

Second, ELCA's new approach to the rural labor markets is probably the most important innovation in terms of labor markets. Given that rural markets behave in a very different way than urban ones, a module on the use of time of the adults in the household was included. This helps to understand that a great part of labor in rural areas is related to on-farm work as well as self-consumption activities, which are impossible to measure using the standard questions on labor markets applied by traditional surveys. Questions regarding the process of job search and off-farm jobs are also included which, together with the information regarding the use of time, will help us better understand how the labor market works as well as the situation of workers in rural areas. This information supplements the more traditional analyses on rural

labor markets and offers a wider perspective on these types of markets.

This chapter offers an initial overview of urban and rural labor markets based on ELCA's baseline results. According to the type of indicator, the analysis will be carried out separately by gender, level of education, wealth quintile, and, in urban areas, by socioeconomic level. Two characteristics of ELCA's sample design affect the interpretation of results. First, the labor market module is only applied to the heads of the households and their spouses, both in urban and rural areas, and therefore results refer only to this population. Second, the survey is only applied to the population belonging to socioeconomic levels 1 through 4, and excludes the population belonging to socioeconomic levels 5 and 6.

5.2. Urban Labor Market

ELCA's urban module holds information on 27,758 people who belong to 5,448 urban households. We have a full set of information on the variables of interest for the heads of the households and their spouses for 8,575 people. Of this sample, 27% of the population belongs to socioeconomic level 1, 41% to socioeconomic level 2, 27% to socioeconomic level 3, and 5% to socioeconomic level 4. In terms of the education

level, 23% reports having no education or just a few years of primary school, 20% having finished primary school, 21% having finished high school, 19% holds a technical degree, and 17% has a college degree. Finally, 56% of the heads of the households and their spouses are women.

Urban labor indicators detailed below indicate that there is an important gap in the labor status between men and women, between people with high and low education levels, and individuals who belong to the highest and the lowest income quintiles.

5.2.1. Basic Labor Market Indicators: Participation Rate, Unemployment, Average Wage and Employment Type

Although it is perceived that there are equal labor opportunities for men and women in Colombia, there are still substantial differences regarding labor indicators by gender. ELCA's baseline results indicate that, although female participation has increased in the last few decades, men still have a significantly higher participation rate than women, (see Graph 5.1) and face an unemployment rate that is 6 percentage points lower than that of women (see Graph 5.2).

Graph 5.1.
Participation Rate by Gender (%)
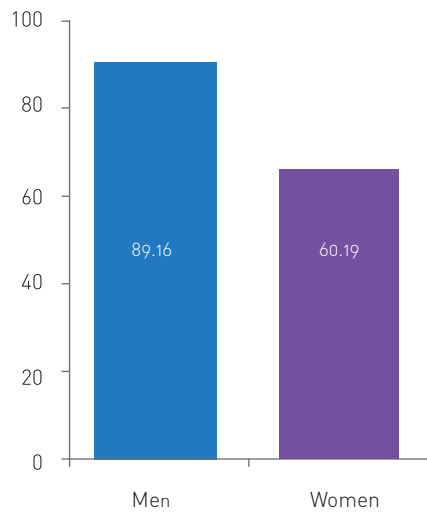
Differences are significant to 99%

Graph 5.2.
Unemployment Rate by Gender (%)
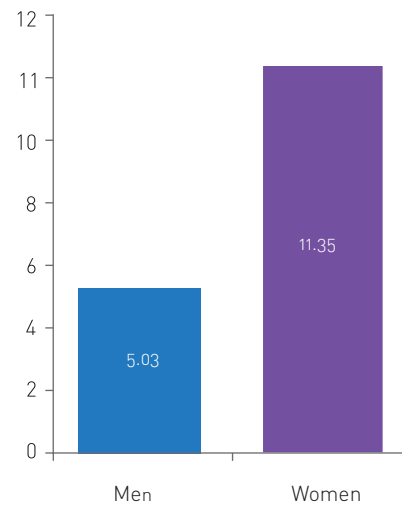
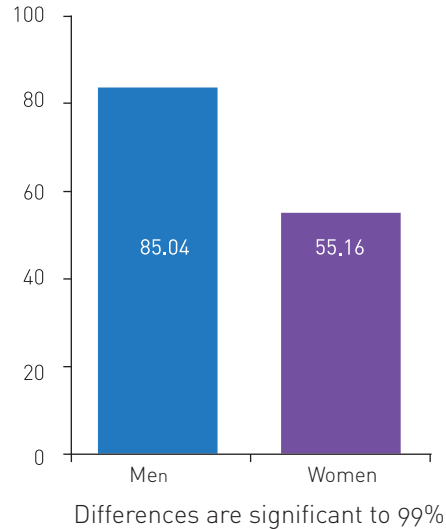

Differences are significant to 99%

Source: Own calculations based on ELCA.

5.2.2. Comparison between the DANE's Household Survey and the ELCA

As in the case of the DANE's Household Survey (GEIH for its acronym in Spanish), the information contained in ELCA allows us to portray the country's labor situation; ELCA includes information on people's employment: whether they are employed, what they do, how much they earn, whether they are covered by Social Security and whether they are looking for a job, among other issues. One of the differences between the Household Survey and ELCA is that some of the identification questions posed to the employed population are not exactly alike: the GEIH requires three or four questions in order to identify the employed population, while ELCA compiles this information into one single question. In addition, ELCA's labor module is only applied to the heads of the households and their spouses, while the GEIH labor modules are applied to all household members over the age of 12 in urban areas. Therefore, ELCA results are not directly and completely comparable to the labor market statistics published by the DANE. However, they are comparable when the Household Survey's universe is reduced to the heads of households and their spouses.

Graphs 5.3 and 5.4 depict labor participation and unemployment by gender based on the information obtained from the second quarter of the 2008 Household Survey, for a sample containing the heads of the households and their spouses, who belong to socioeconomic levels 1 through 4, in Colombia's 10 main cities.
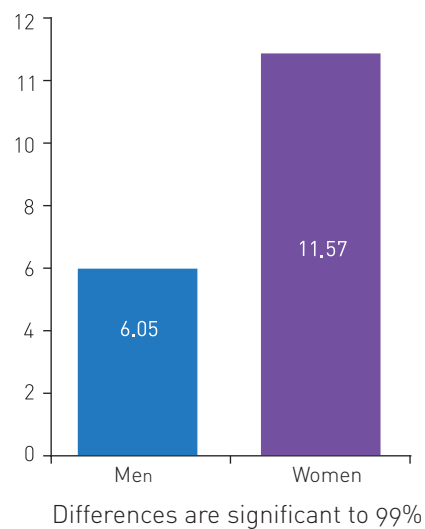
GRAPH 5.3.
PARTICIPATION RATE BY GENDER (%)

85.04 55.16

Men Women

Differences are significant to 99%

GRAPH 5.4.
UNEMPLOYMENT RATE BY GENDER (%)

6.05 11.57

Men Women

Differences are significant to 99%

Source: DANE..

Qualitatively, the results obtained from both surveys are similar. Even though the participation rate calculated based on the information from ELCA is around five percentage points higher, the 30 percentage point difference between men and women remains. The unemployment rate of men reported by GEIH is one percentage point higher, while that of women is very similar.

In terms of job characteristics, men receive a considerably higher wage; while the monthly average income for males is COP$828,207 (around US$460), the average income for females is COP$575,383 (around US$320); that is, a (raw) wage gap of almost 44%. The calculated wage gap does not take into account that men and women could have different labor market characteristics that determine salary, for example, education and experience. In the sample, women are as educated as men (there are no statistically significant differences regarding men and women's education), making this high wage gap by gender a surprising issue. Other studies have indicated that, after including all the characteristics that may impact an individual's salary and correcting the selection bias (generated because the group of working women is systematically different from the group of all women), the wage gap by gender remains high and is statistically significant (see for example Badel and Peña, 2010).

The gender gaps in terms of participation and unemployment rates, as well as income, are substantial. However, the situation is even more dramatic when analyzed by education level. Both the participation rate and income levels increase with education, and there are big differences in these variables between educational groups. For example, people with an education level of less than primary, participate approximately 30 percentage points less than people who have a college degree (see Graph 5.5).

GRAPH 5.5.
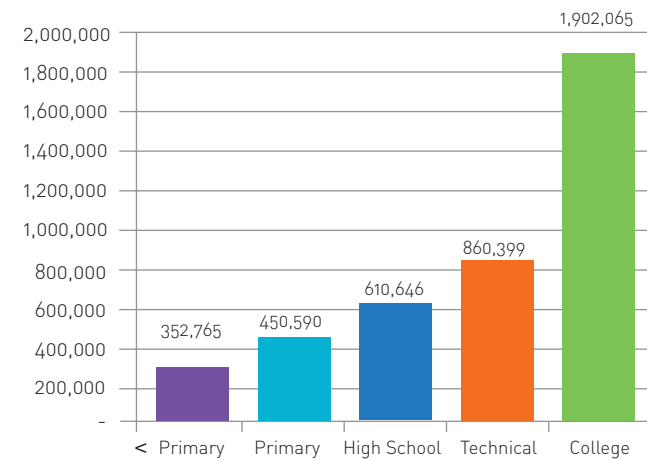### PARTICIPATION RATE BY LEVEL OF EDUCATION (%)
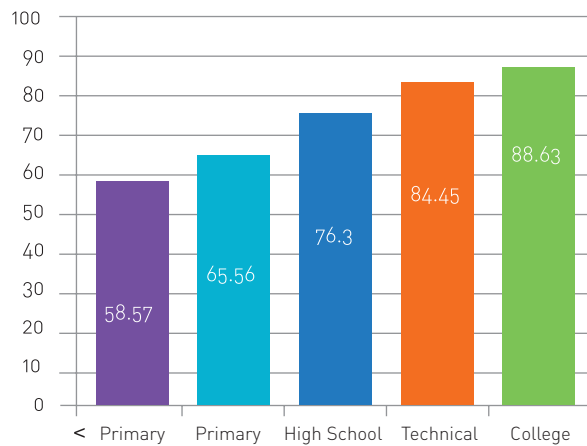
Differences are significant to 95% at least

GRAPH 5.6.
INCOME BY LEVEL OF EDUCATION (COP $)

Differences are significant to 95% at least

Source: Own calculations based on ELCA

Graph 5.6 depicts the average income by education level. For comparison purposes, the minimum wage in Colombia for 2010 was COP$515,000 (roughly US$286) per month. The average wage of a person who had not finished primary was approximately COP$352,000 (US$196); this is nearly 68% of the minimum wage. Agents with primary education earned COP$450,000 (US$250), which is 87% of the minimum wage. Only those people with high school education or above earned more than the minimum wage. On the other hand, a college degree has extremely high returns. People with a college degree earn twice the income of those who have a technical or technological degree, and five times the income of those with less than primary education.

Despite the differences by education level, the gender gaps in the participation rates between the higher and lower income quintiles, and the higher and lower socioeconomic status level are smaller: the maximum difference is only 4 percentage points. However, the wage gap is significant between wealth quintiles. We observe a similar issue when analyzing differences across socioeconomic levels. Even though the Survey only includes observations from socioeconomic levels 1 through 4, there is a considerable income gap: the average wage for socioeconomic level 4 is four times that of socioeconomic level 1 (see Graphs 5.7 and 5.8).

Graph 5.7.
Average Salary by Welath Quintile (COP $)

Differences are significant to 95% at lest

Graph 5.8.
Average Salary by Socioeconomic Status Level (COP $)
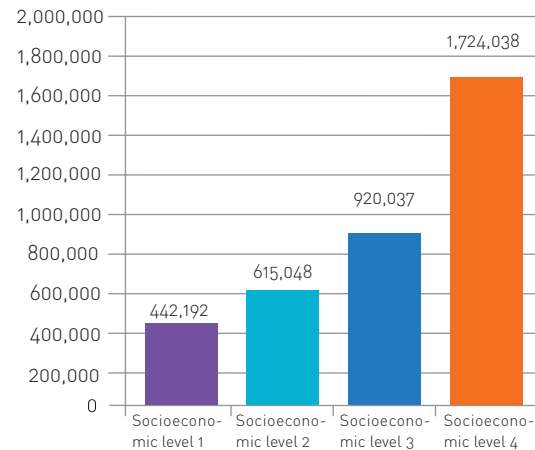
Differences are significant to 95% at lest

Source: Own calculations based on ELCA.

Table 5.1 depicts the workforce composition by gender and type of employment. The great majority of workers are either self-employed or private sector employees: two out of every five workers are self-employed and another two are private sector wage earners. Both men and women work in similar proportions for the public sector or in self employment. However, a higher proportion of men work in the private sector as compared to women; these men work either as business-owners/employers in their own business, day laborers or in their farms. On the other hand, there is a higher proportion of women working as domestic workers or as unpaid workers in the family business.

TABLE 5.1.
TYPE OF EMPLOYMENT BY GENDER

Type of Employment	Total	Men	Women	Significance
Domestic worker	3.40%	0.12%	7.96%	***
Self-employed	40.98%	41.15%	40.73%	
Goverment employee	4.83%	4.91%	4.71%	
Private sector employee	40.95%	43.09%	37.97%	***
Business owner	2.91%	3.56%	2.00%	***
Farm worker	0.43%	0.67%	0.11%	***
Day laborer	2.41%	3.64%	0.70%	***
Unpaid worker in the family business	1.67%	0.66%	3.08%	***
Other	2.43%	2.20%	2.74%	

Significant to 99% (***), significant to 95% (**), significant to 90% (*)

Source: Own calculations based on ELCA.

GRAPH 5.9.
NUMBER OF CO-WORKERS

- Alone — 44%
- 2-5 — 24%
- 6-10 — 7%
- 11-19 — 4%
- 20-49 — 5%
- 50+ — 26%
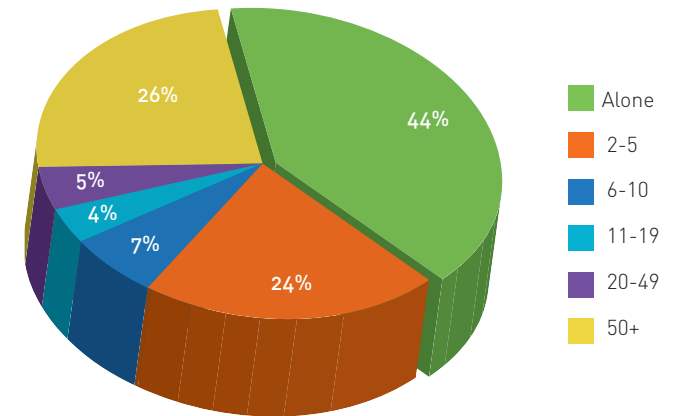
Source: Own calculations based on ELCA.

When studying the occupational distribution by quintiles (not reported), there is a higher proportion of people who belong to the lowest quintiles working as domestic workers, day laborers, farm workers or are self employed. On the contrary, there is a higher proportion of people who belong to the highest quintiles working as public servants or business owners or employers.

Regarding business size, 44% of the people interviewed reported working alone, 31% reported working in businesses that employ between two and ten people, while the remainder work in businesses that employ more than 20 people (Graph 5.9). By analyzing this data by gender, we find that a higher proportion of women are self-employed.

5.2.3. First job

The data reported and analyzed up until now has also been gathered in the traditional labor market surveys. The following section will focus on the new questions included in ELCA.

ELCA gathers information on a person's first job: salary, type of employment, average working hours, and length of time in the position. Clearly these results are heterogeneous: people with different ages and backgrounds get their first jobs at different times. However, we analyze the averages looking forward to describe the broader trends. The average wage earned by workers in their first job was COP$177,225 (US$98)[1]. The wage in the first job affects future earnings since it provides a starting point from which the wage will increase; it could be hard for a worker who is already in a specific income trend to deviate from it.

Whether the gender wage gap initiates at the beginning of a person's working life or is the result of work decisions and women's fertility throughout their life is an empirical question. Wage information on the first job helps us answer this question for Colombia: there is a large gap in average earnings between men and women's first jobs. Men report having earned COP$202,291 (US$112) in their first job, while women report earning COP$162,057 (US$90), which corresponds to a 25% wage gap. The wage gap estimated with current salaries is around 44% which means that more than half of the gap is generated at the beginning of working life, and it later deepens until it reaches a point where it is almost double its initial value.

The information on the first job also helps us understand if that initial job determines the type of employment a person will have in the future. This is studied through occupational transitions by comparing the current job with the first one. While 32% of men remain in the same type of employment they had at the beginning of their working life, 28% of women remain in the same occupation type (Graph 5.10). Men, more than women, tend to remain in similar jobs to those in which they started.


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1. Only 500 people of the total sample report their first salary. Therefore, this statistic is less robust than other results presented. Of these 500 observations, only 476 were used for calculation purposes, given that they offered complete information on the variables used for the analysis in this chapter.
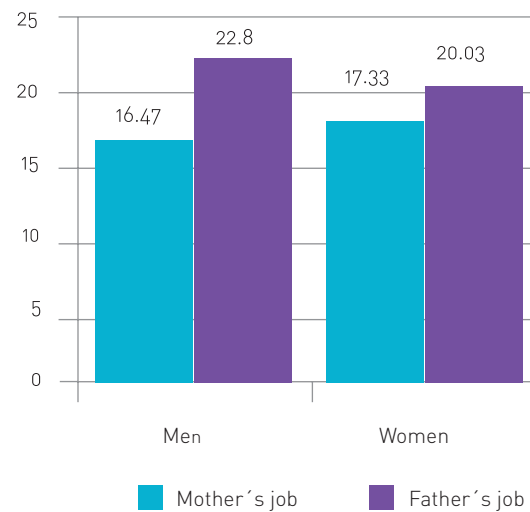
Graph 5.10.

Percentage of people who remain in the same occupation they had in their first job
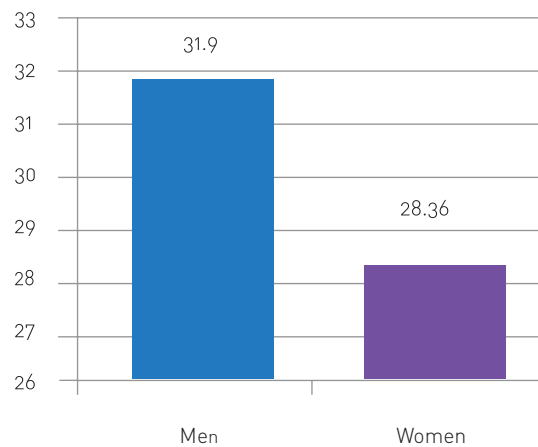
Differences are significant to 99%

Graph 5.11.

Percentage of people whose job is the same as their parents'

■ Mother´s job   ■ Father´s job

Differences are significant to 99%

Source: Own calculations based on ELCA.

The literature has identified the type of job held by the parents as a strong predictor of the type of employment chosen by an individual. Given that this information is also collected in ELCA, it is possible to determine how parent's occupations affect an individual's current choice of employment. The results shown in Graph 5.11 suggest that the father's job is a better predictor of current employment than the mother's job (for both men and women). Finally, when the results shown in Graphs 5.10 and 5.11 are compared, we see that although both the first job and the parents' occupation affect the type of job currently held by an individual, the former has a higher impact than the latter.

Women report working 2.26 hours per week more than men in their firs job.

↑The Mateus Simijaca family consists of eleven people living in the same house in the Brasil neighborhood in Bosa (Bogotá). In the photo, Ingrid Lorena Mateus, the youngest daughter.

ELCA also gathers some additional information about the first job. For example, a first job for people in our survey lasts five years on average. Graph 5.12 shows that there are substantial diffe-rences between men and women. Men accumu-late on average two more years of experience in their first job than women; the average length for men is 5.8 years, while for women it is 3.9 years. This gender gap is reversed when we study the hours worked. Workers report working an average of 50.26 hours per week in their first job. Howe-ver, women report working 2.26 hours per week more than men (see Graph 5.13). This is surpri-sing given that women report working an average of 8.14 hours less than men in their current job; on average, men work 53.89 hours per week while women work 45.75 hours per week.

GRAPH 5.12.
AVERAGE YEARS OF EXPERIENCE IN THE FIRST JOB

Men: 5.80
Women: 3.85
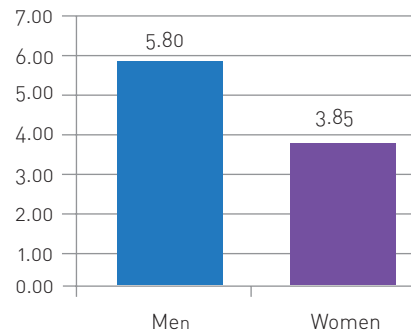
Differences are significant to 99%

GRAPH 5.13.
### AVERAGE HOURS WORKED IN THE FIRST JOB

Men: 49.18
Women: 51.44
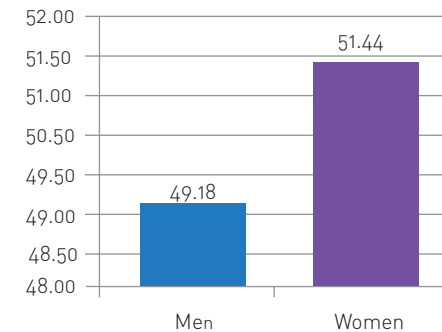
Differences are significant to 99%

Source: Own calculations based on ELCA.

5.2.4. Effective/real work experience

Work experience is also identified in the literature as one of the reasons behind the existence of a gender wage gap. The Household Survey is a cross sectional survey, and therefore it gathers information on the population at one point in time and does not allow us to obtain information on the accumulated work experience of each individual. In order to calculate an individual's real work experience one must try to build an approximation such as "potential experience". ELCA presents a new approach on this subject, and due to its longitudinal nature, when the follow-up surveys are conducted each individual's real work experience will be recorded. However, in the baseline, each interviewee was asked about their accumulated work experience. Results suggest that there are substantial differences in the accumulated work experience of men and women. Graph 5.14 shows that, on average, men 50 years and older report having worked 13.3 years more than women of the same age. Men also start working two years before women (see Graph 5.15). This difference can in part be attributed to the role played by women in child rearing. This preliminary result suggests that there are substantial differences in the accumulated work experience between men and women, providing a potential candidate to partially explain the gender wage gap that still exists in Colombia.

Graph 5.14.
Accumulated experience for people older than 49 (years)
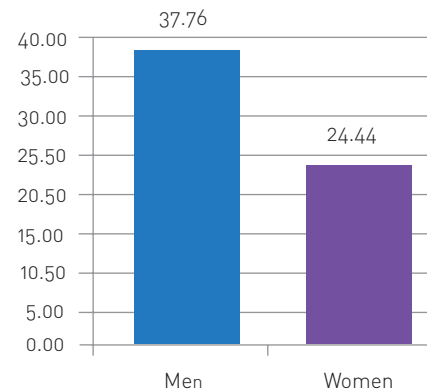
Differences are significant to 99%

Graph 5.15.
Average age at time of first job (years)
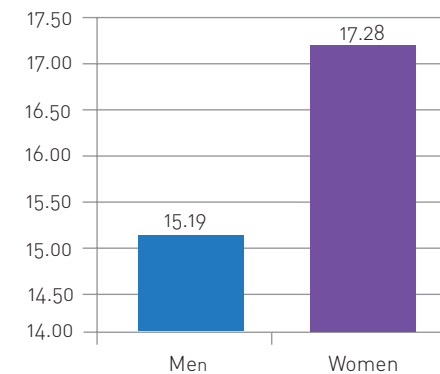
Differences are significant to 99%

Source: Own calculations based on ELCA.

5.3. Rural Labor Markets

Rural labor markets have a different logic and behave differently as compared to urban labor markets. ELCA includes, in addition to questions on job search and wage-earning jobs, a module on the use of time by household adults to adequately measure the labor market decisions within a household. The results show that gender differences in the use of time and in the labor market attachment are even more pronounced in rural than in urban markets.

ELCA has information on 4,720 rural households that correspond to a total of 21,507 people. The sample was reduced to 7,909 adults, the heads of the households and their spouses, for whom there was complete information on the variables of interest. Women constitute 51% of the sample, 14% have no primary education, 64% have completed primary, and 22% have completed high school or more[2].

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2. In the rural sample only 1% of individuals report having technical or technological education and 1% have a college degree. Therefore, we collapsed those two educational categories: individuals with a high school education or more.

5.3.1. Day Labor, Wage Earning Job and Job Search

Participation in rural labor markets is predominantly male. Women work in labor markets significantly less than men, both as day laborers and wage earners (See Graph 5.16). While a third of men work in wage-earning jobs, only 11% of women occupy these types of jobs. The situation is even more unbalanced in the case of day laborers: more than half of men work as day laborers, while only 7% of women do. The same pattern is apparent when analyzing the percentage of people looking for jobs during the last 12 months: 24% of men report having looked for a job, while only 6% of women report having done so (Graph 5.17).

This lower labor market attachment of rural women may be due to the fact that gender roles are more deeply rooted in rural areas. While men are the primary bread winners and frequently work outside home, the responsibilities of women focus on housework and child rearing.

The percentage of individuals working in wage-earning jobs increases with the level of education, while the percentage of individuals working as day laborers decreases with the education level. This may reflect the fact that wage-earning jobs require a higher qualification level than day labor jobs. Graph 5.18 depicts how the more educated indi-

Graph 5.16.
Percentage of Individuals Working as Day Laborers or Wage Earners

Wage earners

Differences are significant to 99%

Day Laborers

Differences are significant to 99%
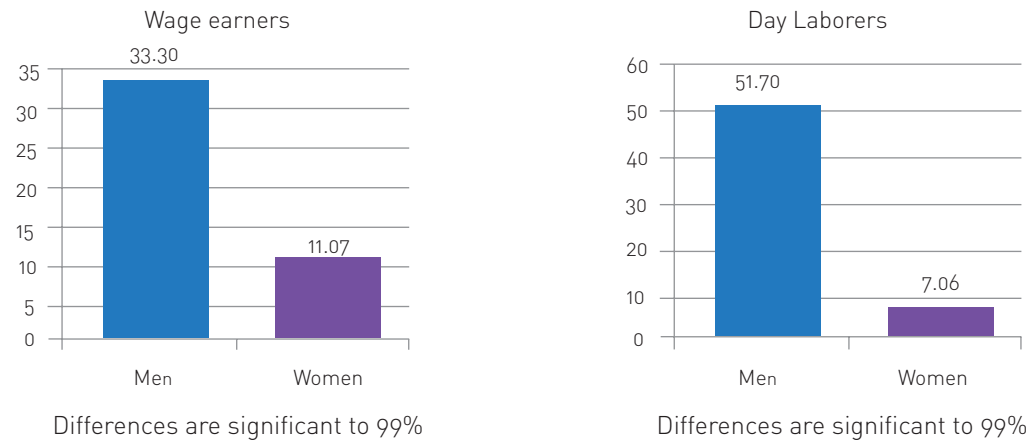
Source: Own calculations based on ELCA.

Graph 5.17.
Percentage of Individuals Who Looked for a Job

Differences are significant to 99%

Source: Own calculations based on ELCA.

GRAPH 5.18.

PERCENTAGE OF WAGE EARNERS AND DAY LABORERS BY LEVEL OF EDUCATION

Wage earners

20.13	19.96	27.31	46.65	61.52
< Primary	Primary	High School	Technical	College

Differences are significant to 95% at least

Day Laborers

31.84	30.96	22.87	7.47	0
< Primary	Primary	High School	Technical	College

Differences are significant to 95% at least
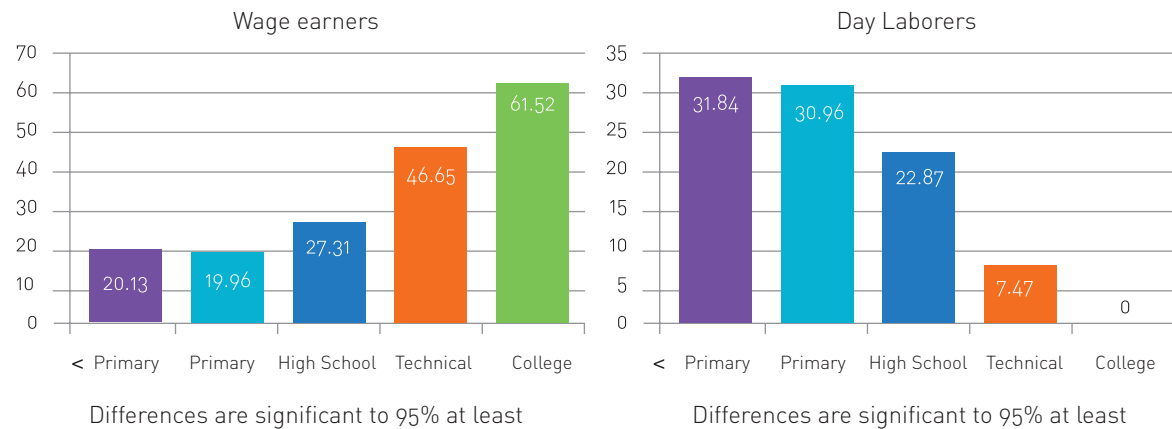
Source Owncalculations based on ELCA.

↑ Anuar Joaquín Varilla is the head of the Varilla Pinto family consisting of six people. They earn their living from agriculture, in Ciénaga de Oro (Córdoba).

viduals work in wage-earning jobs, while the less educated individuals mainly work as day laborers. In addition, the percentage of individuals with a college degree working in wage-earning jobs is three times higher than the percentage of wage earners with a primary education. However, there are no significant differences between educational groups in terms of job search. This may be explained because rural areas do not offer a wide variety or better quality of jobs for the more educated population.

Graph 5.19 shows that individuals in the higher wealth quintiles tend to work more frequently as wage earners and less frequently as day laborers

than individuals in lower income quintiles. However, individuals in higher wealth quintiles work in similar proportions as wage earners and as day laborers, which suggests that the opportunities offered by both types of jobs are similar. On the other hand, individuals in lower quintiles tend to work more frequently as day laborers than as wage earners.
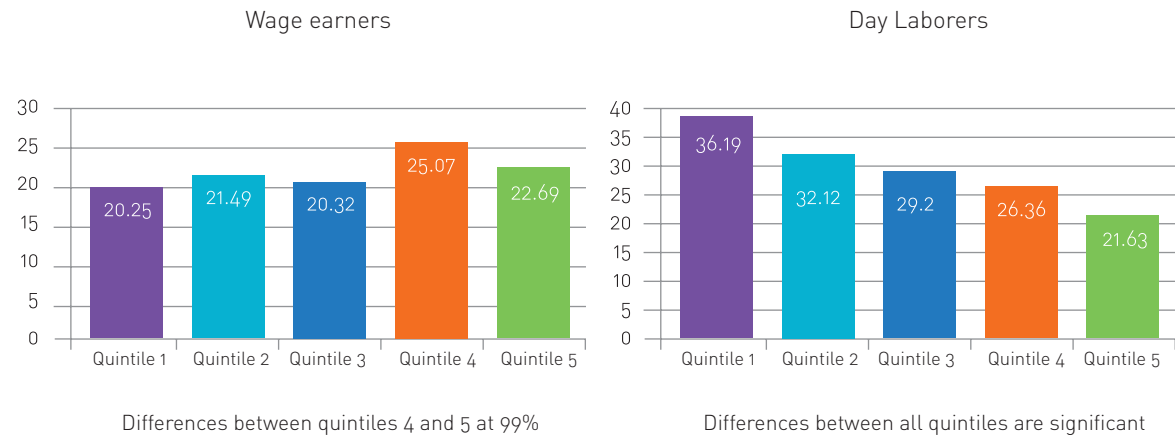
Although there are no statistically significant differences by education level in terms of job search, individuals in the lower quintiles proportionally searched more than individuals in higher quintiles (Graph 5.20). Twice as many people in quintile 1 reported having searched for a job in

the last 12 months than individuals in the highest wealth quintile; 20.5% of individuals in quintile 1 reported having searched for a job in the last 12 months, in comparison to 10.2% of individuals in quintile 5.

Graph 5.21 shows the seasonality patterns for job search in rural areas. It displays the month in which individuals searched for jobs. There is a seasonal variation that could be related to the agricultural production cycle. There is a higher proportion of individuals searching for jobs during the months of January, February and March than at any other time of the year.
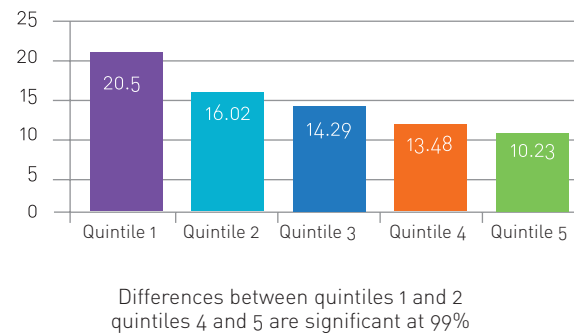
GRAPH 5.19.

### PERCENTAGE OF INDIVIDUALS WORKING AS WAGE EARNERS AND DAY LABORERS BY INCOME QUINTILE

Wage earners

30		
25		
20	20.25	21.49	20.32	25.07	22.69
15		
10		
5		
0	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5

Differences between quintiles 4 and 5 at 99%

Day Laborers

40		
35	36.19		
30		32.12	29.2	
25				26.36	
20					21.63
15		
10		
5		
0	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5

Differences between all quintiles are significant

Source: Own calculations based on ELCA.

GRAPH 5.20.

PERCENTAGE OF INDIVIDUALS SEARCHING FOR JOBS BY INCOME QUINTILE

25		
20	20.5		
15		16.02	14.29	
10				13.48	10.23
5		
0	Quintile 1	Quintile 2	Quintile 3	Quintile 4	Quintile 5

Differences between quintiles 1 and 2
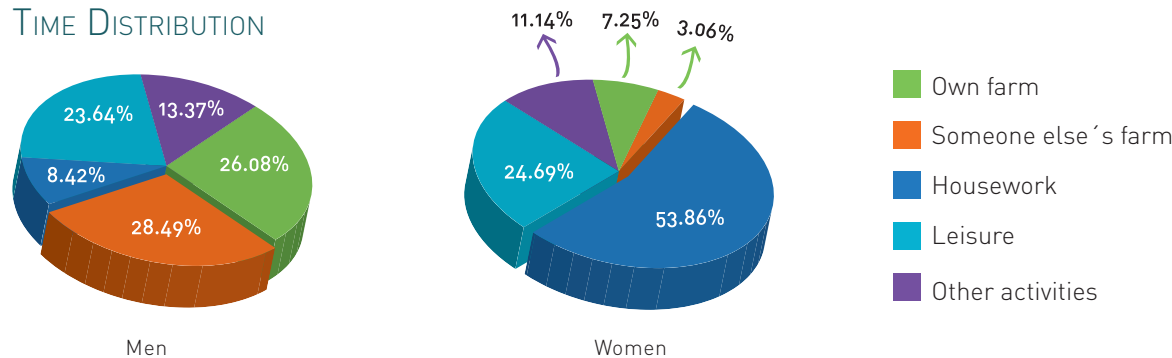quintiles 4 and 5 are significant at 99%

Source: Own calculations based on ELCA.

Graph 5.21.
Percentage of individuals searching for jobs by month
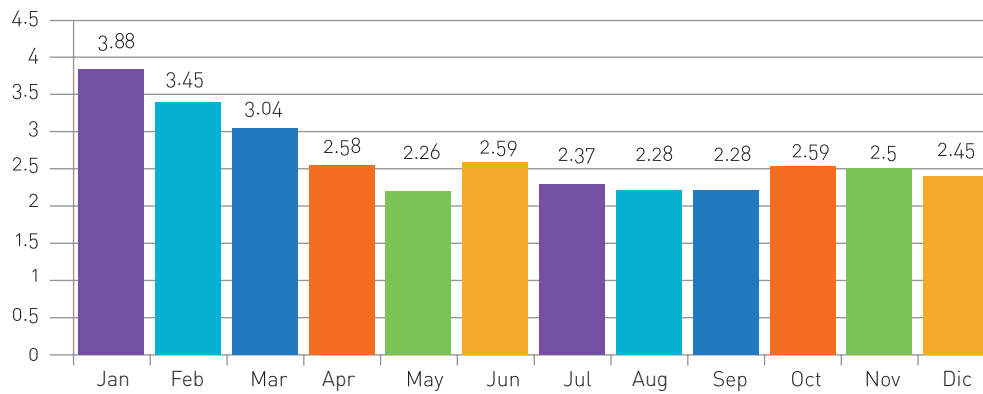
Source: Own calculations based on ELCA.

Graph 5.21.
Time Distribution

Men

Women

- Own farm
- Someone else´s farm
- Housework
- Leisure
- Other activities

Source: Own calculations based on ELCA.

5.3.2. Time Use

In order to describe the time use of adults in rural areas, individuals were presented with several alternatives, that we later classified into four groups of activities: 1) work inside their own farm: agricultural or otherwise; 2) work in other farms: agricultural or otherwise, 3) housework, child or elderly care; and 4) leisure and recreation[3].

Results by gender are depicted in Graph 5.22. In rural areas, women have a predominantly domestic role, which is reflected on the fact that 54% of their time is spent doing housework or caring for the children and the elderly. On the other hand, men spend the same 54% working on farms: 26% working on their own and 28% working on someone else's farm. Men devote more time to leisure and recreation activities than women do; although the difference is not large (it is equivalent to one percentage point), it is statistically significant.

References

Badel, A. and Peña, X. (2010). "Decomposing the Gender Wage Gap with Sample Selection Adjustment: Evidence from Colombia", **Revista de Análisis Económico**, Vol. 25 No. 2: 169-191, December.

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3. Watching television exclusively, listening to the radio, exercising, spending time with family and friends, attending cultural events, praying, meditating, participating in religious ceremonies, surfing the internet, playing an instrument, reading, or doing nothing.