Analysis of the main labor market indicators by gender in Cúcuta in the period 2010-2017

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Abstract

The purpose of the research was the analysis through the main labor market indicators by gender in Colombia and in the city of Cúcuta in the 2010-2017 period, through a descriptive and documentary methodology, with which the different indexes were analyzed and described. in order to be able to establish criteria of how the differences are by gender and among others as a global participation rate that expresses the pressure of the population in the labor market. This research concludes that the female population is higher than the male population in the entire period studied and their participation in the labor market is lower, in addition, the unemployment rate is higher in this period and the rate of employed persons is lower.

Keywords: Indicators, labor market, gender

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Introduction

In recent decades, Colombia has experienced profound demographic, cultural, institutional and economic transformations. The labor dynamics include, among other things, the sustained increase in female labor participation in the face of the relative stagnation of male participation, the incursion of women in all sectors and occupations of the economy and the higher education of women, which has surpassed that of men.

In view of this (Arango & Lora, 2016), she points out that "women present disadvantageous work results in many aspects compared to men. In effect, they register lower employment, lower participation, lower wages, and higher unemployment rates "(page 9). The latter has been, on average, six percentage points higher than the male since 2010, which is significant in this scenario.

According to (Arango & Ríos, 2015), committed women (married or in a free union) have longer periods of unemployment than men in the same condition, this through the obligations and responsibilities that generate this state of the gender. Likewise, (Tenjo, Misas, Contreras, & Gaviria, 2012) estimated the durability of unemployment and the possibility of being unemployed in Colombia in order to specify the means of search and the causes of unemployment, and with this to be able to establish relations of the different existing variables. For (Charry, 2003) the labor participation of women has increased in the last decades, not only in Colombia but also in developed countries. He explains that the labor supply of women who are not heads of household is mainly linked to the decision to participate in the labor market, and with this in the search for spaces where women are predominant, and their activity and performance is enhanced in the different jobs. In this way, (Meyer, 1990) measures the effects of unemployment insurance on the level and duration of unemployment, finding that with greater benefits in unemployment insurance, the greater the negative effect on the probability of leaving unemployment. Thus, using data from the National Household Survey of 1988, 1992, and 1996, (Nuñez & Bernal, 1997) evaluated the duration of unemployment in Colombia and disaggregated its rate to determine the frictional, structural and cyclical components. The participation of the adult population that participates in the labor force, whether working or looking for work, determines the size of the workforce which in turn is fundamental to construct a measure

of potential GDP and to make projections of future GDP growth (Juhn & Potter, 2006, p.1).With this, when examining the causes of unemployment, (Henao & Rojas, 1999) they affirm that this not only shows the performance of macroeconomic policies but that it is also the manifestation of the nonsense of educational programs in terms of coverage, quality, and relevance. From the microeconomic point of view, unemployment is caused by failures in the information available to the labor market bidders and demanders.

For (Viáfara & Uribe, 2009) search paths determine the duration of unemployment, confirming the existence of frictions in the labor market, this due to the large amount of demand that may exist and the low labor supply that exists, increasing the unemployment rates. Given this, (Quiñones, 2010) made non-parametric estimates Kaplan-Meier type, and parametric with the Weibull function to estimate the duration of unemployment in Colombia and indicate their relationship with the search channels, finding that despite the formality this is not the more used, but it is the most effective in terms of the duration of unemployment. This is compared with (Freije, 2002), where labor informality is related to inequality and poverty. The improvement of basic education, training plans, and thr expansion of access to credit systems, would contribute to the reduction of this scourge.

For (Yépez & Zambrano, 2010) when examining the labor supply of a country, participation in the labor market becomes a fundamental indicator that must be considered in any study of these indicators. Likewise, (Roldán & Ospino, 2009) reflect that some indicators such as age, education, marital status, and household heads play a fundamental role in explaining the improbability of informal jobs, while the time of Job search increases the likelihood of belonging to the informal sector.

In this way, the unemployment of other members of the household, age and educational attainment remains the main indicators of a positive effect on the participation rate, while the main determinant of the negative effect continues to be household wealth. According to the model, the participation rate decreases with decreases in the unemployment rate (Arango, Posada, & Charry, 2003). For (Mincer, 1962) there is an inverse relationship between the income of husbands and the participation of women in the labor force since this income on their part can determine the participation of women in the labor field. For (Killingsworth & Heckman, 1986),

the behavior of the supply of female labor has important implications for many other phenomena, such as marriage, fertility, divorce, as well as the distribution of family income having wage differences among them.

In this sense, (Castro, García, & Badillo, 2011) they reflect that in the labor participation of women who are in a state of marriage is lower than those of their counterparts who are in a free union, and this difference is decreasing to as the educational level generates higher income. However, (Lundberg, 1985) presents a new approach to the effect of the aggregate worker, emphasizing the role of employment uncertainty and credit constraints in the generation of short-term employment and employment patterns.

Colombia has a population of 47,867,821 million inhabitants for 2017 (an approximate increase of 1.1% of the population since 2010), of which 51% correspond to men and the rest of the population (23,617,467) to women. With a representation of 80% of Working Age Population (WAP) (38,294,257) and 24,696,587 million inhabitants in the Economically Active Population (EAP). While 64% of this generates pressures on the labor market. Expressed through the Global Participation Rate (GPR), which in relative terms, according to (Arango & Posada, 2003), expresses:

...the number of people of working age who are willing to participate in the labor market through the search or exercise of a paid occupation, as well as the willingness to work more or fewer hours by those who belong or could belong to the working population. (p.1)

n this way, the figures of the National Administrative Department of Statistics of Colombia (DANE), reveal that the male population is the one that generates the greatest pressure on the labor market since it presents a GPR of 74.8% in 2017, 20.3 percentage points (pp) above the feminine.

Given this, we proceed to the analysis of the different indicators of the labor market through a documentary methodology of information search in the different agencies that handle it, and this is indicated by Hernández (2016), where documentary research is the step of research that

consists of detecting, consulting and obtaining the bibliography and other useful materials for the purposes of the study, from which is extracted and collects relevant and necessary information for the research problem. Similarly, it is descriptive in that the different labor market indices are described and analyzed, and Tamayo (2006) points out this, proposing the type of descriptive research where the characteristics of a unit of analysis of interest for the population are systematically described. investigator.
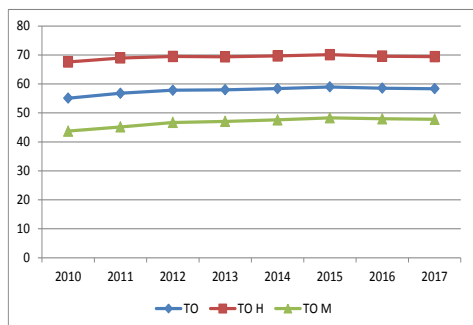
Analysis of Units

Table 1. Number of Employed and Unemployed in Colombia versus Men and Women Employed and Unemployed in the period 2010-2017.

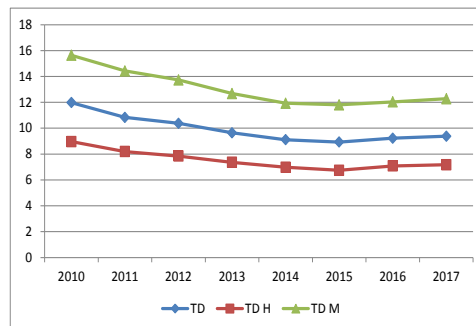| Concept	2010	2011	2012	2013	2014	2015	2016	2017
Total E	19099066	20019511	20696417	21048193	21503323	22017192	22156141	22382580
Men E	11453248	11875494	12149208	12305893	12541379	12797654	12872915	13017451
Women E	7760075	8144017	8547210	8742300	8961944	9219538	9283226	9365130
Total U	2598138	2426095	2394227	2243363	2151159	2156144	2248801	2314007
Men U	1126732	1057557	1034097	976618	939924	923989	980971	1005374
Women U	1437253	1368539	1360130	1266746	1211235	1232155	1267830	1308633

Source: DANE- Large Integrated Household Survey (LIHS). Elaboration by the authors.

For the (DANE, 2010) the term employed refers to people of working age who in the reference period were in any of these situations: that they had worked at least one hour paid in money or in kind in the reference week, those they did not work the reference week, but they had a job and unpaid family workers who worked in the reference week for at least 1 hour. In this sense, it is observed (Table 1) that the number of employed persons in Colombia shows an increasing trend during the 2010-2017 period, corresponding to 22,382.580 million inhabitants in 2017, with an occupancy rate of 58%. As well as the number of men employed (13,017,451) and the rate of employed men (69), it is higher than that of women 9,365,130, (ER 48%) during this time, presenting a difference of 3,652,321 million of inhabitants and 22 pp rate for 2017. Being 2011, the year with the largest difference (3,731,477) of the period.

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Graph 1. Rate of Employed Persons in Colombia versus Rate of Employed Men and Women in the 2010-2017 Period. Graph 1. Rate of Employed Persons in Colombia versus Rate of Employed Men and Women in the 2010-2017 Period.

Graph 2. Rate of Unemployed in Colombia versus Unemployed Rate of Men and Women for the period 2010-2017.
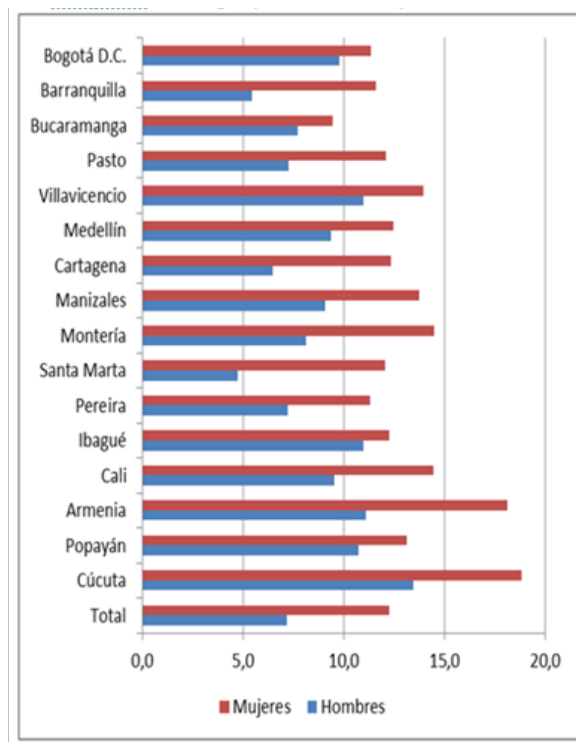

gaps by gender, Cúcuta and Armenia occupy the highest unemployment rates in the country, 16%, and 14.3%, respectively.

Regarding the number of unemployed, the (DANE, 2010) classifies them in two categories laid-off and applicant. Laid off worker is the person who, having worked before for at least two consecutive weeks, is unemployed looking for a job, and the applicant is the person who is looking for work for the first time. The figures indicate that the number of unemployed people stood at 2,314,007 in 2017, exhibiting a downward trend from 2010 to 2015, and taking a growth path from the latter (Table 1). While the rate of unemployed reached a single digit, going from 12% in 2010 to 9% in 2014, remaining constant until 2017.

On the other hand, graph 2 shows that the unemployment rate of women is on average 6 percentage points higher than that of men, and the National in all the time period, reaching a gap of seven percentage points in 2010, and on average. According to (Lora, 2016), "apart from the fact that female unemployment in Colombia is high, it is substantially higher than male unemployment" p.2. When making comparisons with other Latin American countries, the gender gap presents 4.8 percentage points in 2012, the highest in the region, and approximately double that of the group of countries.

However, the gaps are widened by considering the regional differences of the Country. As can be seen in Graph 3, Armenia has the largest gap in the unemployment rate (7) by gender in the main cities, followed by Cúcuta with 5.4 percentage points of difference. It should be noted that in addition to presenting the largest unemployment

Graph 3. Unemployment rates by Cities 2017

Source: DANE. Elaboration by the authors.

The International Conference of Labor Statisticians, held by the International Labor Organization (ILO, 2003), considers employees informally that "their employment relationship, of right or de facto, is not subject to national labor legislation, to the tax on income, social protection or certain benefits related to employment "(p.3). Graph 3 presents the behavior of the informal population in the 13 Main Cities of Colombia and its Metropolitan Area, showing that, for the period, half of the population (51%) was in informal conditions, presenting an increase of 297,042 inhabitants, going from 4,768,662 in 2010 to 5,065,704 in 2017. Added to this, the proportion of informal women (48.9 pp) with respect to men (51.1 pp) is lower by 2.3 points percentage over the entire period.

Graph 3. Total of Informal versus Informal Men and Women in the 13 Main Cities and Metropolitan Area in the period 2011-2017

Source: DANE. Elaboration by the authors.

Colombia has 32 Departments, of which Norte de Santander is part, it is in the Andean Region, in the northeast of the country, in the border area with Venezuela. This department is composed of 40 Municipalities. Its border location has been a determinant of its socioeconomic dynamics, reflected in the figures for unemployment and informality, in addition to the phenomenon of contraband.

According to DANE projections, in 2017 the total population (TP) of the department of Norte de Santander was 1,379,530 inhabitants, of which 1,090,420 (79%) were of working age (WAP). Of these, 646,572 are part of what is known as the Economically Active Population (EAP),

while the remaining 443,848 make up the Economically Inactive Population (EIP). Likewise, of the total of the EAP, 80,069 inhabitants were unemployed (U), so the unemployment rate (UR) of the department in 2017 was 12.4%. On the other hand, the total number of employed persons (E) was 566,503, placing the occupation rate (ER) at 52%. Of this total number of employed (E), 140,843 were underemployed (UE), consequently, the underemployment rate was 21.8%.
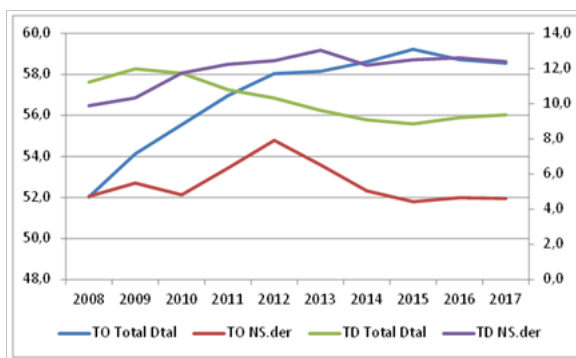
Table 2. Number of Employed and Unemployed at Departmental level in Colombia versus Number of Employed and Unemployed in Norte de Santander in the period 2008-2017.

Concept	2010	2011	2012	2013	2014	2015	2016	2017
E Dept.	17478161	18485919	19279490	20077175	20766251	21111752	21584420	22113587
E NS.der	503242	517128	519020	539622	560958	556263	550209	551611
U Dept.	2209194	2515848	2561713	2429262	2389583	2245729	2154082	2147845
U NS.der	55217	59551	69040	75255	79719	83346	76366	78772

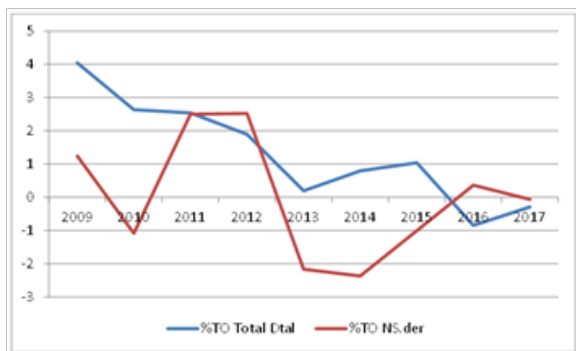**Source:** DANE. Elaboration by the authors.

The rate of employed persons at the departmental level in Colombia (Graph 6) is higher than that of Norte de Santander in most of the period (differences of up to 7.4 pp), except in 2008, the year in which these rates were equal (52 %). At the departmental level, the ER in Colombia grows throughout the period except for the years 2016-2017, which is reduced by 2 percentage points with respect to the previous year, while the values in growth rate show a downward trend for the most part (Graph 7). On the other hand, the rate of employed persons in Norte de Santander presents its highest increase (1.3%) in the years 2010-2011, going from 53.4 to 52.1 p.p., respectively, and starting to decrease from these years.

Graph 6. Rate of Employed and Unemployed at Departmental level in Colombia versus Rate of Employed and Unemployed in Norte de Santander in the period 2008-2017.

Source: DANE. Elaboration by the authors.

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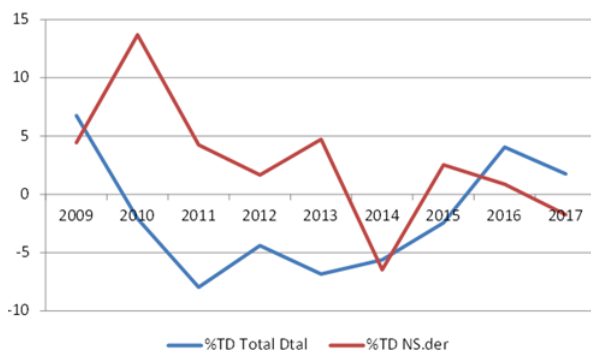
Graph 7. Population Growth Rate at Departmental level in Colombia versus Growth Rate of Employed Persons in Norte de Santander in the period 2009-2017.

Source: DANE. Elaboration by the authors.

Since 2011, the unemployment rate in Norte de Santander is above the Departmental Total in Colombia, presenting the biggest difference in 2015 (3.6p.p.). Total Departmental (UR) is reduced in most of the period, except for 2016 and 2017, years that show growth rates of 4 and 2 percentage points, respectively. Meanwhile, the unemployment rate in Norte de Santander shows a constant trend throughout the period, while its growth rate shows its highest increase (14%) in the 2009-2010 period. Contrary to the above, the largest reduction (-6 p.p.) in the unemployment rate in the Department is presented in the years 2013-2014.

Graph 8. Growth Rate of Unemployed at Departmental level in Colombia versus Rate Growth of Unemployed in Norte de Santander in the period 2009-2017.

Source: DANE. Elaboration by the authors.

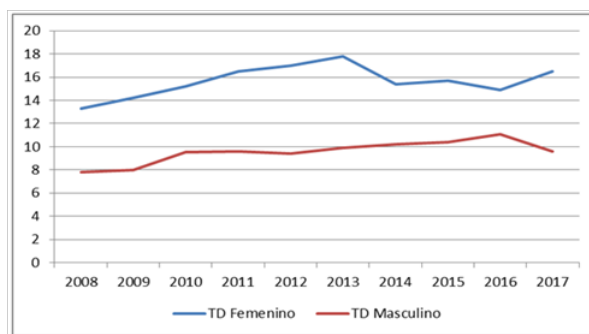**Table 3**. Description of the labor market by gender in Norte de Santander 2008-2017

	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
Female TR	13,3	14,2	15,2	16,5	17	17,8	15,4	15,7	14,9	16,5
Female ER	37,1	37	37,8	39,3	40,7	39,8	39,1	38,6	40,2	39,3
Gap in UR	5,5	6,2	5,7	6,9	7,6	7,9	5,2	5,3	3,8	6,9
Male UR	7,8	8	9,5	9,6	9,4	9,9	10,2	10,4	11,1	9,6
Female GPR	42,8	43,1	44,6	47	49,1	48,4	46,2	45,8	47,2	47,1
Gap in GPR	30,5	31,8	29,3	28,2	27,5	26,9	27,1	27,2	24,9	24,9

Source: Colombia Labor Information Source (CLIS). Elaboration by the authors.

Table 3 presents the labor market indicators discriminated by gender in Norte de Santander, indicating that on average the female population that is willing to participate in the labor market, for the period in question, stands at 46.13% reaching its greater record during the year 2012 with 49.1p.p. In turn, the highest female employment rate of the period is in this year (40.7 p.p.) It should be noted that in no year of the period the GPR and the ER reach 50%.

When comparing the rate of female and male unemployment in the Department, it is observed that the Female Unemployment Rate, on average, is 6 percentage points higher than the male rate throughout the period (Figure 9), occupying the highest records in the year 2013 and 2016 with rates of 17.8% and 11.1%, respectively. The previous figures show that the group of women in Norte de Santander is more vulnerable than men to unemployment while being persistent in time.

Graph 9. Female Unemployment Rate versus Male Unemployment Rate in Norte de Santander for 2008-2017 period.

Source: CLIS. Elaboration by the authors.

During 2017 the Metropolitan Area of Cúcuta (M.A.C) had a population of 829,147 (TP) inhabitants, 65,632 more than in 2010, and with an approximate growth rate of 1.18% in this period. It is worth mentioning that the increase in the number of inhabitants of the City and its

Metropolitan Area is a product of the economic crisis in Venezuela that forced the return of the Colombians living there, in search of opportunities and solutions to health, food and work problems.
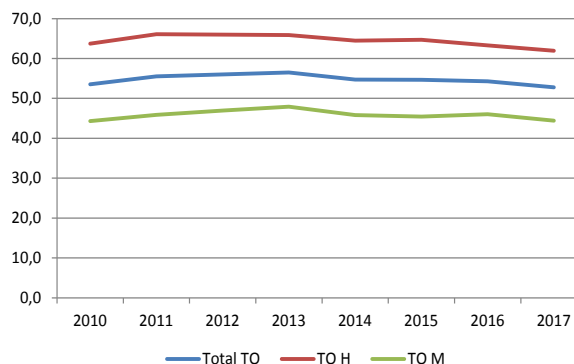
Of the total population of M.A.C., 400,663 inhabitants were men and the remaining (51.7%) female population. While 660,280 were of working age (population comprised of 12 years and older for the urban area and 10 years and older in the rural area), 62.7% were part of the Economically Active Population, and the remaining 246,012 the Economically Inactive Population. For this same year, the number of employed and unemployed persons stood at 348,396 and 65,873, respectively.

	2010	2011	2012	2013	2014	2015	2016	2017
TP	763515	772722	782010	791364	800770	810210	819696	829147
WAP	588592	599137	609643	620074	630394	640573	650568	660280
Employed	315158	332616	341421	350267	344946	350024	352970	348396
Unemployed	53105	60371	64492	64812	61057	60473	64445	65873

Source: DANE. Elaboration by the authors.

Table 4. Employed and Unemployed in Cúcuta and M.A. versus Occupied and Unemployed Men and Women during 2010-2017

Figure 9. Rate of Employed Persons in the M.A.C versus the Men's Rate and Women's Rate Occupied during 2010-2017.

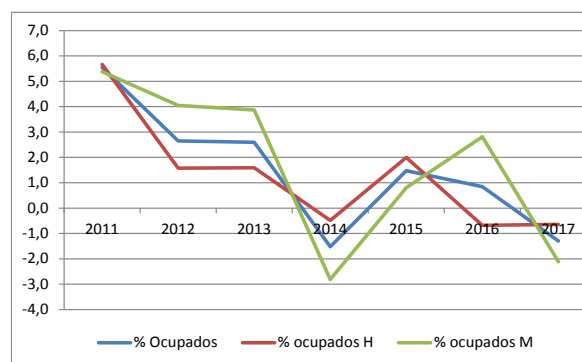**Source:** DANE. Elaboration by the authors.

When looking at graph 9, it is evident that the rate of male employees is above the female rate and that of the total population during all the time and reaching 20-point gaps between them. While OT maintains a more variable trend, the rate of employed females maintains a downward trend in the 2010-2014 period, managing to recover until 2016 and returning to a declining path at the end of the period.

Concept	2010	2011	2012	2013	2014	2015	2016	2017
Employed	315158	332616	341421	350267	344946	350024	352970	348396
Employed M	178525	188635	191614	194660	193718	197577	196232	194967
Employed F	136633	143980	149807	155607	151228	152447	156737	153429
Unemployed	53105	60371	64492	64812	61057	60473	64445	65873
Unemployed M	26641	27802	29092	30225	29216	30232	31900	30320
Unemployed F	26464	32569	35400	34586	31841	30241	32544	35553

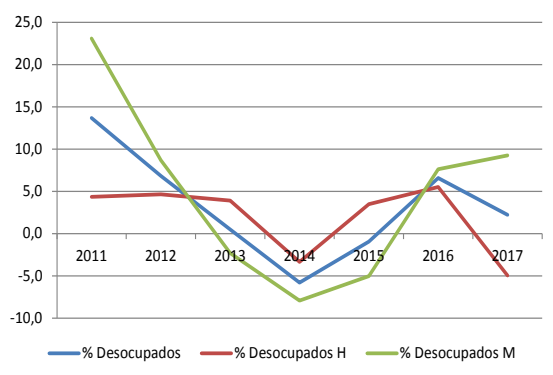**Source:** DANE. Elaboration by the authors

Although the female population is greater than the male population throughout the period, its offer in the labor market of the Metropolitan Area of Cúcuta is lower. Thus, the Global Rate of Male Participation is 76.7% in 2017 and 58% for women, reaching a gap of 18.7 percentage points for this year. The number of employed on average for the period 2010-2017 in the A.M. Cúcuta was 341,975, of which 56% were male and 149,984 (44 p.p.) female. The year 2010 presented the lowest number occupied for both the total of the Population in Cúcuta 315,158, and by gender 178,525 men and 13,633 employees, respectively. On the contrary, it is the year 2016 that exhibits a more employed female population (156,737), while for masculine it is 2015, with 197,577 employed.

Graph 10. Growth Rate of Employed persons in the M.A.C. versus Growth rate of Men and Women Occupied in the City during the period 2011-2017.
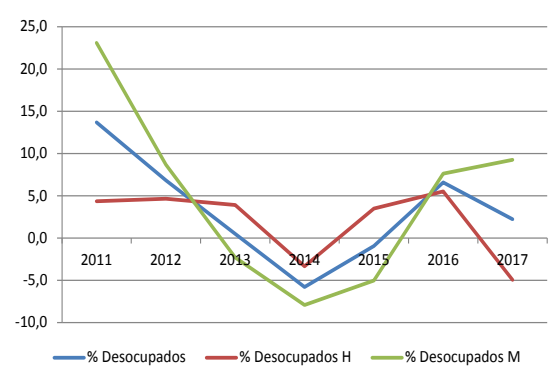

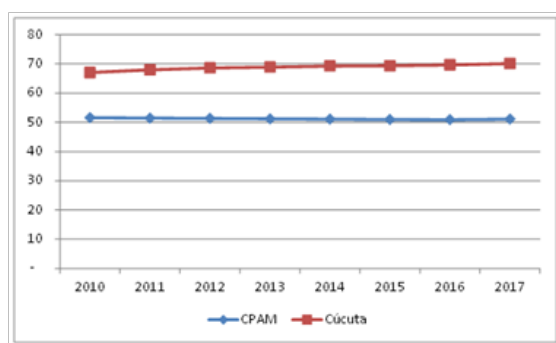**Source:** DANE. Elaboration by the authors.

In this way, when looking at graphs 11 and 12, it is the female unemployment rate that is located above the male and the total over the entire period, reaching an unemployment rate of 19.1% in the year 2012 and a gap of 5 points on average between the male and female. From 2010 to 2014, unemployment rates fall, and they grow from this year to 2016, reflecting in this indicator, part of the pressure exerted by the Venezuelan exodus in the region.

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Graph 11. Rate of Unemployed in Cúcuta and M.A. versus Men's Rate and Rate of Unemployed Women during 2010-2017.

Source: DANE. Elaboration by the authors

Graph 12. Δ of employed persons in Cúcuta and M.A. versus Δ of Men and Women Occupied in the City during 2011-2017.

Source: DANE. Elaboration by the authors

Figure 13. Proportion of Informality in the 13 Main Cities of Colombia and the Metropolitan Area versus the proportion of Informality in Cúcuta 2010-2017.

Source: DANE. Elaboration by the authors.

On the other hand, the proportion of informality, on average, of Cúcuta (69%) (Graph 13) is located above the 13 main cities of Colombia in the entire period (51p.p.)

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