Peer-reviewed version available at *Sustainability* **2020**, *12*, 991; doi:10.3390/su12030991

Article

Objectives of Sustainable Development and Youth Employment in Colombia.

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Received: 30/11/2019 ; Accepted: date; Published: date

Abstract: The Sustainable Development Goals (SDGs) raise quality employability, gender equity in access to employment and increase coverage in education, however, in Colombia, high unemployment rates and informality of young people are risks of fulfilling these objectives. This is verified by a study with cohorts on access to employment, labor mobility and entry to quality occupations, through the use of probabilistic models. This study found that young people are less likely to be employed than adults, education has increased in the new generations and allowing them to enter a higher quality occupation, job segmentation and lack of experience of young people are the main cause of unemployment and Women are less likely to be employed than men and to do so in quality jobs. To comply with the SDGs, you must increase coverage in education, make a differential gender policy and expand programs as learners and insert dual education.

Keywords: Sustainable Development Goals, Human Capital, youth unemployment, Probit model, multinomial logit model, cohort study

1. Introduction

The United Nations wants to overcome poverty and generate a sustainable path for economic growth through the strengthening of freedom and peace [1]. The document establishes a set of goals and schedules to achieve these objectives in a term up to the year 2030, with actions that must be followed by member countries. In Colombia, as in the rest of the world, these objectives have been applied above all with the increase in the influence of environmental movements and the concern with the generation of wealth in parallel in this regard and preservation of the environment [2, 3].

Among the established goals, three of the objectives have a close relationship with the labor market. Objectives 4, 5 and 8 discuss, respectively, the quality of education, gender equality and the generation of decent employment, forming a set of goals on access to employment and formalization of work, aimed at reducing the number of workers who live in poverty and extreme poverty. These aims include recurrent access to employment of vulnerable populations such as youth and the condition known as NEET, young people who do not work nor study.

In Colombia, the ODS became a pattern politics, joining various plans national and local development in the last's years, as shown by the study of the National Planning Department [4]. However, the report on the progress of the SDGs for Colombia shows that one of the main problems remains unemployment and the general structure of the labor market, especially for the younger labor force. With an unemployment rate almost double the adult population, in addition to the high incidence of young people who do not work and do not study (also known as NEET generation). Although there has been a reduction in overall unemployment, unemployment rates remain higher among women and, especially, among younger groups, in addition to informality, which remains at levels above 60%[1]. These data allow observing the difficulty of Colombia to achieve the ODS up to the deadline of Agenda 2030.

One of the ways to reduce distances to these objectives and the generation of better-quality jobs postulated by economic literature is the investment in human capital and technologies compatible with the environment.

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However, there is evidence that, in developing countries, human capital components have differentiated effects on the employability of labor. Research such as [5-7] shows that individuals with higher levels of education are less likely to be employed, while less-educated workers are held in lower quality positions.

Thus, this article aims to analyze the occupational insertion of Colombian youth, investigating the determinants of employment and the type of employment. Understanding these relationships can contribute to understanding how far the Colombian labor market is from meeting some of the goals proposed by the SDGs. Among the main findings of the research, it was evidenced that young people currently have greater difficulties to be employed than young people from previous generations; Similarly, young people today have lower probability is employment, but more likely to enter occupations of medium and high quality, so they have a better chance of upward mobility for the greater human capital acquired.

In this way, the experience would be the key component in the employability of young people, so employment policies must not only focus on training and formal education (which are fundamental) but strive harder to generate the first job, the labor market intervening with programs such as apprenticeships and dual education models. At the same time, it is necessary to advance the schooling of the workforce, especially to lead the poorest to higher education, and thus increase the chances of formal long-term jobs and in the early stages of the employment cycle, in addition to generate the first years of work experience of these young people, as a result the State must guarantee the generation of human capital and continue to do so in the individual's career, more than anything before the technological changes that force the labor supply to adapt to new skills.

2. Literature review

Human capital is one of the most discussed and empirically analyzed theories in the economic sciences, in particular, to investigate the relations of salary, productivity, and employment. According to the postulates of the classical vision, the productivity of the individual is a function of the level and form of accumulated human capital, that is, of the investment in training and qualification that favors the performance of the work. This would impact on salary levels and the form of occupational insertion, in which the workforce with the largest stock of human capital would have facilitated access to the best jobs [8-9].

However, later developments in the theory admit the existence of heterogeneity in the distribution of human capital among labor, both in its level and in the modality of investment made. This observation derives from the concern to explain the existence of a salary differentiation between workers of the same educational level. This heterogeneity originates in two types of investment, the specific and the general. The second is the type of human capital used in various activities or companies, with perfect or almost perfect factor mobility. From an empirical point of view, the level of formal education is one of the components that are most used to represent this type of investment. On the other hand, there is a form of human capital that cannot be completely transferred between occupations or companies, called specific human capital and that transforms the workforce into an almost fixed component of the firm's production function. It is traditionally represented by experience in the labor market. The two investment modalities, second the theory of human capital, must increase productivity and, consequently, wages and employability of labor. However, the way companies combine these components with their characteristics is also a determinant of the allocation of labor between employment and unemployment and between occupational segments.

Following the postulates of human capital, a series of criticisms and complementary studies emerged that strengthen the analysis of the relationship between education and experience with the labor market. The theories of the filter and signaling - [10-12] argue, for example, that education is not a reflection of productivity but serves as a signal the labor market about the skills that a person could have. However, one

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of the problems detected in the so-called mismatch of education or of the skills demanded and offered, which reflects a disconnection from formal education with labor demand. In this way, phenomena such as over-education or under-education are observed more specifically, in which the first refers to the job for which the person has a higher educational level than the required and, the second case, occurs when people have a lower level of training than requested in vacancies.

In the Colombian case, [13-14] found that the most educated and younger people tend to be more vulnerable to unemployment. Likewise, the higher incidence of low-quality employment causes young workers to have low social protection, increasing the wage gap and, therefore, inequality. Likewise, it causes underestimation of unemployment due to hidden or informal employment, exhibiting a myopic vision of the labor market [15].

Analysis such as those presented by [16-17] reveals a strong labor segmentation in Colombia, which unequally distributes the active population in economic segments with different levels of formalization and quality of employment. In addition, as shown [18], women have increased their labor participation, but especially in the informal activities of the economy. Finally, [19] they also found that experience favors labor participation and that education especially favors formality, so that human capital, including education to a greater extent, would help to enter higher-quality jobs. fulfilling the objective 8 of the SDGs.

3. Materials and Methods

To meet the objectives, the data are used in the gran Encuesta Integrada de Hogares (GEIH), which takes the Departamento Administrativo Nacional de Estadisticas (DANE) in Colombia since 2008 and present the microdados about living conditions and labor market. People between the ages of 16 and 39 are selected from the 2008, 2012 and 2016 surveys, with complete information for the variables used in this research. Two models with the selected data are estimated, the first being a logit for the probability that an individual is employed, while the second is concerned with estimating the probability that a person is employed in a certain type of occupation, according to the Quality of the job.

For the first, the dependent variable is a dummy of value 1 if the individual is employed and of zero value if he is unemployed, as defined by the DANE. As explanatory variables, the theoretical aspects raised by the theory of human capital are taken as the basis, with education as the main explanatory variable. In addition, a set of variables is introduced to capture the so-called age-period-cohort effect. This method allows analyzing the probability of employment among individuals who were born in the same period of time and who have experienced basically the same socioeconomic changes - [20]. This type of analysis has not yet been found in the case of the labor market in Colombia, but it has a long application in international literature, as in [20-21]. In addition, the method makes it possible to overcome the longitudinal non-observation of individuals in the GEIH, avoiding potential bias problems in the estimates because they do not consider the presence of unobservable factors and the evolution of the individuals over time.

In short, you want to estimate the model:

$$Pr(y = 1) = f(\text{sex, head of household, marital status, Education, region, Age, cohort, period}) \quad (1)$$

In equation (1), the sex variable is dichotomous of value 1 for men and zero for women; head of household is a dummy that identifies the reference person in households; marital status a dummy to identify people living as a couple (married or in free union) ; education is a set of dummies to capture at the maximum level of formal education of the individual, divided into Bachelor, Technician / Technologist, University and Postgraduate ; The region is composed as categorical for the demographic zones of Colombia (Atlantic, Eastern, Central, Pacific, and Bogotá). Finally, binaries are added to capture the age-period-cohort effect, organized according

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to the scheme in chart 1. That is, dummies variables that capture the age of the person in each year of the sample, organized in groups of five years (16-19 years; 20-24 years ...; 35-39 years), with the exception of the youngest group, which has four years, increased dummies for the year of birth, or generation of five years and dummies variables for the selected years of the survey.

Chart 1 - Cohort groups by survey year

	2008	2012	2016
Generation 1 - Cohort 1997-2000	-	-	16-19 Years
Generation 2 - Cohort 1992-1996	-	16-19 Years	20-24 Years
Generation 3 - Cohort 1987-1991	16-19 Years	20-24 Years	25-29 Years
Generation 4 - Cohort 1982-1986	20-24 Years	25-29 Years	30-34 Years
Generation 5 - Cohort 1977-1981	25-29 Years	30-34 Years	35-39 Years
Generation 6 - Cohort 1974-1978	30-34 Years	35-39 Years	-
Generation 7 - Cohort 1969-1973	35-39 Years	-	-

Source: Own Elaboration

Among the employed, it is estimated a second model for the probability of being employed and n given occupancy group, defined according to the quality of the employment position. For this, the classification of [22] is used, which defines the jobs for Colombia taking as reference the income of the workers, access to social security and the modality of the employment contract. This methodology is used r which covers the close to the definition of most relevant aspects of the use of ODS. Besides, it has been used by other studies of employment quality in the country such as [23-25]. Three categories of employment are defined: low quality; medium quality and; High quality. whose main references are in chart 2.

Chart 2. Occupations by quality of employment.

Type of Occupation		
Low Quality	Average Quality	High Quality
Management and management occupations	Health occupations	Primary and extractive exploitation occupations
Occupations in finance and administration	Occupations in social sciences, education, government services and religion	Occupations in equipment operation, transport and trades
Occupations in natural, applied and related sciences	Occupations in art, culture, recreation and sports Occupations in sales and services	Occupations in processing, manufacturing and assembly

Source: Own Elaboration

To verify the probability of occupation in each category, a multinomial logit model is estimated, an expansion of the traditional logit models for the case of more than two categories in the dependent variable. The equation to be estimated is the one defined in (2):

$$Pr(y = j) = f(\text{sex, head of household, marital status, Education, region, sector, Age, cohort, period}) \quad (2)$$

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In this equation, sex, head of household, marital status, education, region and the dummies of age, period and cohort are defined as before. The sector is a set of binaries for the sectors of economic activity (commerce, services, and industry). This model has been used to determine labor market participation, labor segmentation and to determine the probability of being employed, for example, in [26-31].

The models are estimated in their versions with a standard robust error or with the help of the Stata software and with results presented in the form of marginal effects. These results are presented and discussed below.

4. Results

Table 1 shows the proportions of the unemployed and the average education by gender in each generation and cohort, there it can be observed that women have a higher proportion of unemployment than men in all generations, that is to say a constant at all ages, so the goal of gender equity in the SDGs is not met. On the other hand, this employment gap is widened in the most current generations, that is to say, the youngest (generation 1 and 2), the gap in generation 3 and 4 is reduced, and it increases again in generations 5, 6 and 7; therefore, gender inequality in access to employment is broader in older and younger generations.

On the other hand, in all generations, women have on average more years of schooling than men, and it is observed that young people have a higher average education than adults, fewer people of generation 1 who still have to accumulate schooling because they have maximum 16 years. This scenario reflects two things, the first one that has advanced in terms of educational coverage (objective 5 of the SDGs), but it is being wasted in terms of objective 8, since women are the ones who are most educated, but less employed than men, so the country does not take advantage of this human capital to increase economic growth and quality jobs, so it could not meet this goal on the 2030 agenda.

Table 1. Unemployment rates by sex and generation and average school years by sex and generation.

Unemployment	Women			Men		
	2008	2012	2016	2008	2012	2016
Generation 1 - Cohort 1997-2000			63.24			36.76
Generation 2 - Cohort 1992-1996		65.25	53.73		34.75	46.27
Generation 3 - Cohort 1987-1991	47.43	54.58	56.98	52.57	45.42	43.02
Generation 4 - Cohort 1982-1986	52.13	58.64	62.20	47.87	41.36	37.80
Generation 5 - Cohort 1977-1981	56.80	62.84	64.41	43.20	37.16	35.59
Generation 6 - Cohort 1974-1978	61.43	65.96		38.57	34.04	
Generation 7 - Cohort 1969-1973	62.11			37.89		
Education	Women			Men		
	2008	2012	2016	2008	2012	2016
Generation 1 - Cohort 1997-2000			9,35			9,16
Generation 2 - Cohort 1992-1996		10,55	9,84		9,06	9,22
Generation 3 - Cohort 1987-1991	8,64	9,96	11,64	8,15	9,31	11,01
Generation 4 - Cohort 1982-1986	10,14	11,20	11,82	9,70	10,61	11,16
Generation 5 - Cohort 1977-1981	10,87	11,11	11,45	10,49	10,56	10,80
Generation 6 - Cohort 1974-1978	10,56	10,63		10,16	10,14	
Generation 7 - Cohort 1969-1973	10,05			9,52		

Source: Own Elaboration

On the other hand, Table 2 presents the marginal effects of the variables used on the probability of an individual being employed in Colombia in the years investigated. In general, it is observed that men are more

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likely to be employed in comparison with the female sample, confirming the greater difficulty of women's labor insertion, a typical phenomenon in almost all economies, but with more weight in the Latin American region. Also, other classic results of the empirical literature are observed, such as a greater probability of employment among the reference persons in the home and those living as a couple, reflecting the need for maintenance of the family nucleus. In the same way, the labor market in the region of the capital Bogotá is where the greatest employment opportunities appear.

The impacts of education represent the results of the greatest interest in this research, capturing some of the aspects discussed in the SDGs and human capital. In contrast to the expected by models of human capital, more educated individuals in Colombia have lower chances of employment, except for those with level postgraduate. In this sense, the idea that education reasserts itself does not generate stimuli or is not a determinant of occupation. It can also reflect r search by hand cheaper labor or low need for high qualification in the Colombian labor market, highlighting the disconnect between education and market demand.

Table 2: Marginal effects model Probit analysis by employment cohorts

	dy/dx	Std. Err.	P>z
Gender	0.0602238	0.0008247	0.000
Head Home	0.0685322	0.0010039	0.000
Estado civil	0.0344196	0.0008847	0.000
EDUCATION			
Bachelor	-0.0197355	0.000938	0.000
Technician/Technologist	-0.0180881	0.0013445	0.000
University	-0.0205099	0.0015003	0.000
Graduate	0.0341354	0.0024498	0.000
REGION			
Eastern	0.0143918	0.0011391	0.000
Central	-0.0064673	0.0010181	0.000
Pacific	-0.0283269	0.0012485	0.000
Bogotá	0.0307618	0.0017087	0.000
AGE			
16-19 Years	-0.0515307	0.0034615	0.000
20-24 Years	-0.0476911	0.0024781	0.000
25-29 Years	-0.0113978	0.0015565	0.000
COHORTE			
Born 1997-2000	-0.0716538	0.0048853	0.000
Born 1992-1996	-0.0594059	0.0032095	0.000
Born 1987-1991	-0.0496292	0.0024006	0.000
Born 1982-1986	-0.0314235	0.0017193	0.000
Born 1977-1981	-0.0176972	0.001341	0.000
Born 1974-1978	-0.0073331	0.0015327	0.000
PERIOD			
Year 2012	0.026899	0.0012283	0.000
Year 2016	0.0661917	0.0014482	0.000
Number of obs	716247		
Wald $chi^2(22)$	36369.92		
Prob > chi^2	0.0000		
Pseudo R^2	0.0721		

Source: Own Elaboration

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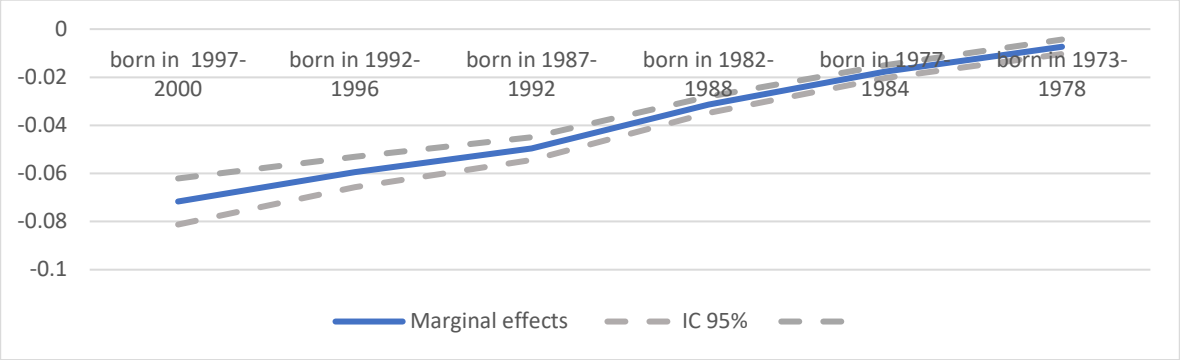
In the case of variables of age, period and cohort, the difficulty of observed more young people to deal with. While the annual variables show a general increase in employability with respect to the reference year (20 08), the negative and significant effects of the age and cohort dummies show that the youngest are less likely to be employed compared to adults. The marginal effects of cohorts can be interpreted as the impact of generational change on the labor market, which is best observed with the help of Chart 1. More recent generations have faced greater employment difficulties throughout the period under investigation, evidencing an increasingly greater difficulty of the Colombian market in absorbing the new labor force entering the economically active population. Together with the effects presented by the years of study, these results can show that the Colombian labor market is more demanding in relation to experience and not with the level of formal qualification of the workforce.

Graph 1: Marginal effects for cohorts on probability of employment



Source: Own Elaboration

On the other hand, Table 3 can observe the behavior of people belonging to the same generation, with models estimated in each year to compare the evolution of the marginal effects of the factors on employment. There is observed that the differential insertion according to gender remains throughout the entire period and among all selected cohorts, although the decreasing effect between and among older people. Among the youngest women, therefore, there are the greatest problems of occupational insertion in the country. As for the regions, Bogotá shows over time as a region that demands more employment compared to the others, but its effect has diminished over time, losing statistical significance in the last two generations.

In this sense, the objectives of the ODS regarding equity gender and access to employment, will not be met with the goals of Agenda 2030, since women do not access employment and likely to be employed have not increased not even with higher levels of education, on the other hand, young people having barriers to entering the labor market and not increasing the likelihood of employment will generate an employment gap with adults that will affect the employment rates posed by the SDGs. In summary, these goals will not be met in objective 5 and 8 due to the lack of access of young people to jobs and the gender gap.

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Table 3: Marginal effects on probability of employment based on selected generations

	Generation 5			Generation 4			Generation 3			Generation 2		Generation 1
	2008	2012	2016	2008	2012	2016	2008	2012	2016	2012	2016	2016
Gender	0,062*	0,0585*	0,0391*	0,0734*	0,0714*	0,0486*	0,077*	0,0913*	0,0637*	0,0976*	0,0734*	0,079*
	(.003)	(.0029)	(.0026)	(.0038)	(.0030)	(.0027)	(.0052)	(.0035)	(.0029)	(.0051)	(.0036)	(.006)
Head of household	0,100*	0,060*	0,0326*	0,1245*	0,0787*	0,0421*	0,152*	0,1184*	0,0702*	0,0817*	0,0894*	0,042**
	(.003)	(.0030)	(.0025)	(.0055)	(.0036)	(.0028)	(.0118)	(.0054)	(.0035)	(.0120)	(.0056)	(.0160)
Marital status	0,042*	0,030*	0,018*	0,0598*	0,0458*	0,0279*	0,0430*	0,0463*	0,0357*	0,0265**	0,0442*	0,0087
	(.003)	(.0027)	(.0024)	(.0043)	(.003)	(.0025)	(.0091)	(.004)	(.0029)	(.0103)	(.0046)	(.0146)
Bachelor	-0,009*	-0,0098**	-0,0081**	-0,0223*	-0,0151*	-0,0109**	-0,070*	-0,0426*	-0,0187*	-0,0731*	-0,0193*	-0,061*
	(.003)	(.00329)	(.0029)	(.0043)	(.0036)	(.0032)	(.0054)	(.0042)	(.0037)	(.0053)	(.0044)	(.0070)
Technician/Technologist	-0,004	-0,0169*	-0,0145*	-0,0169*	-0,0136**	-0,0153*	-0,0635*	-0,0254*	-0,0177*	-0,0593*	-0,0301*	-0,080*
	(.005)	(.0044)	(.0038)	(.0066)	(.0047)	(.0039)	(.0123)	(.0057)	(.0044)	(.0116)	(.0058)	(.0174)
University	0,006	-0,013*	-0,0180*	-0,0222**	-0,0119**	-0,0205*	-0,0404	-0,0333*	-0,0313*	-0,0166	-0,0456*	-0,152
	(.004)	(.0044)	(.0040)	(.00716)	(.0049)	(.0042)	(.0384)	(.0083)	(.0049)	(.0708)	(.0095)	(.1579)
Graduate	0,073	0,0390*	0,0109**	0,0976*	0,039*	-0,0123**		0,0497	0,0239*		0,0352	
	(.008)	(.0059)	(.0050)	(.0199)	(.008)	(.0057)		(.0269)	(.0083)		(.0331)	
Eastern	0,049*	0,0048	0,0025	0,0675*	0,0035	0,0070*	0,063*	0,015**	0,0166*	-0,0315*	0,0304*	-0,012
	(.004)	(.0039)	(.0039)	(.0052)	(.0042)	(.0038)	(.0072)	(.0050)	(.0042)	(.0072)	(.0052)	(.0097)
Central	0,019*	-0,0079**	-0,0009	0,0158**	-0,0013	0,0098**	-0,046*	-0,0153**	0,0097**	-0,0748*	0,0144*	-0,033*
	(.004)	(.0034)	(.0030)	(.0047)	(.0037)	(.0033)	(.006)	(.0045)	(.0036)	(.0066)	(.0046)	(.0086)
Pacific	-0,024*	-0,0393*	-0,0109**	-0,026*	-0,0503*	-0,0036	-0,0542*	-0,0508*	-0,005	-0,0732*	0,0035	-0,031*
	(.005)	(.0043)	(.00368)	(.0060)	(.0046)	(.0039)	(.0083)	(.0055)	(.0043)	(.0079)	(.0055)	(.0102)
Bogotá	0,0571*	0,0303*	0,0134*	0,0670*	0,035*	0,032*	0,0383*	0,0509*	0,0429*	-0,0331*	0,0522*	-0,017
	(.0068)	(.0055)	(.0053)	(.0083)	(.0060)	(.0052)	(.0125)	(.0072)	(.0058)	(.0117)	(.0074)	(.0162)
Number of obs	47,72	50,46	45,27	46,62	54,06	48,12	30,00	51,99	50,71	29,12	45,60	14,61
Wald chi^2 (11)	1957.2	1583.6	699.8	1846.6	1999.9	1007.6	1014.9	1971.5	1478.09	900.1	1052.5	319.4
Prob > chi^2	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pseudo R^2	0.052	0.046	0.030	0.039	0.045	0.035	0.028	0.035	0.040	0.026	0.024	0.020

Desviación típica entre paréntesis. *p<0.01, **p<0.05, *** p< 0.10. Source: Own elaboration based on model results.

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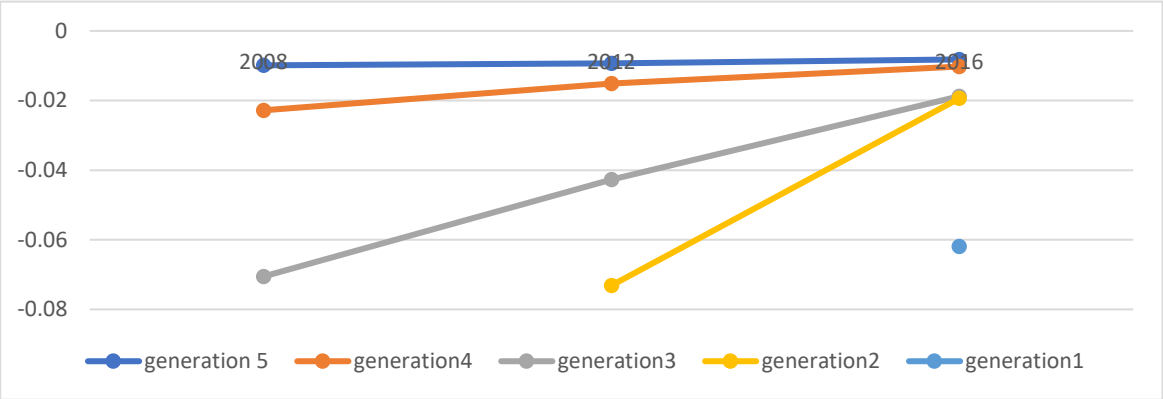
At the center of the specific analysis on education, data table 3 can be analyzed better way l Charts as 2, 3 and 4 soon, where the impact of education is observed in the probability of employment for generations of workers. This allows us to infer about the role of formal human capital in the career of young people and observe that the coefficients have increasing trends as age increases, showing that education has more relevance at the most advanced points of the career path. When comparing the generations, it is observed that the ones with the lowest coefficient, or in which the probability of being employed for each educational level decreases the most, are 2 and 1, that is, the youngest.

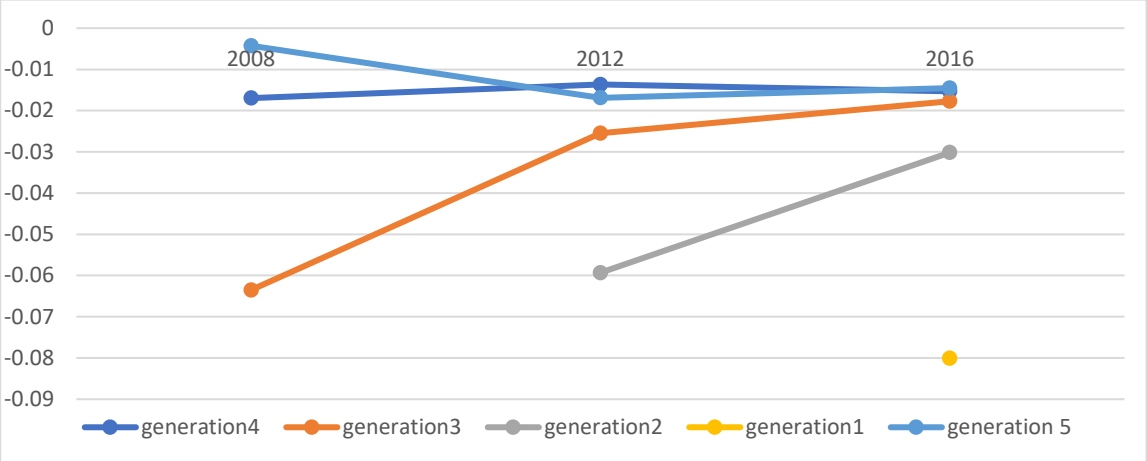
The people younger, aged 16-19, are the least probability are employed, with an effect profound and n university. Likewise, it is shown that in general for young people (16-29 years old) regardless of generation, education has a negative impact on the probability of occupation and this negative impact becomes smaller as age increases. That is, at a higher stage of the work life cycle of people, a phenomenon that could occur due to the accumulation of work experience. These results show two factors. On the one hand, education is relevant as the population ages, that is, a more advanced work cycle. On the other hand, university students have more difficulty than other young people and seem to remain unemployed for longer.

Chart 2: Marginal effects of high schools on probability of use based on selected cohort



Source: Own elaboration based on model results.

Chart 3: Marginal effects of technicians/technologists on probability of use according to selected cohort



Source: Own elaboration based on model results.

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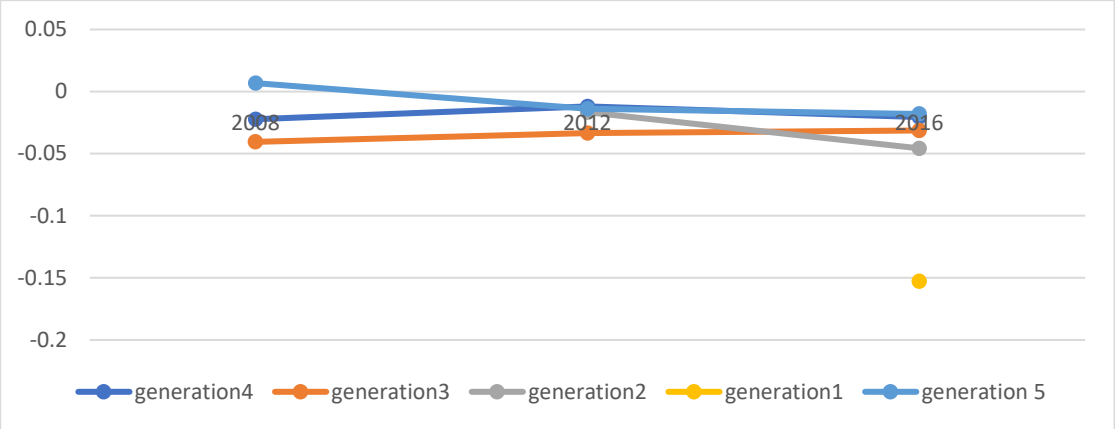
Figure 4: Marginal effects of university students on the likelihood of employment according to selected cohort



Fuente: Elaboración propia a partir de resultados del modelo.

Moreover, in the Table 3 and the graph 5 and 6 sample the results of the multinomial logit model to determine, among employed individuals, whether the use is low, medium or high quality, using the same factors above in addition to the economy sector. In this way it is observed that men are more likely to be in occupations of medium and high quality, while women are more likely to act in occupations of lower quality of work. In the case of the regions, workers in the Eastern, Pacific and Bogotá observe a decrease in the probability of being in low- and high-quality jobs and increase the probability of being in medium quality jobs. Sectors economic of industry and the services offer more opportunities in jobs of low and medium quality compared to trading activities.

Table 3: Marginal effects of the multinomial logit on the quality of employment

	Low Quality			Average Quality			High Quality		
	dy/dx	Std. Err.	P>z	dy/dx	Std. Err.	P>z	dy/dx	Std. Err.	P>z
Gender	-0.0429425	.0010954	0.000	0.031662	.001049	0.000	0.01128	.0011356	0.000
Head home	0.0012977	.0011845	0.273	0.03107	.001132	0.000	-0.03237	.0012189	0.000
Marital status	-0.0308883	.0011326	0.000	0.011819	.0010838	0.000	0.01907	.0011651	0.000
EDUCATION									
Bachelor	-0.0747831	.001216	0.000	0.040556	.0010673	0.000	0.034227	.0011842	0.000
Technician/Technologist	-0.1627714	.0017881	0.000	0.121075	.001825	0.000	0.041696	.0018042	0.000
University	-0.4541149	.0019209	0.000	0.205721	.0021793	0.000	0.248394	.0023256	0.000
Graduate	-0.5911197	.0022706	0.000	0.081224	.0034151	0.000	0.509896	.0038022	0.000
REGION									
Eastern	-0.0207914	.0015912	0.000	0.052864	.0015114	0.000	-0.03207	.001588	0.000
Central	0.0125688	.0013268	0.000	0.03877	.0012644	0.000	-0.05134	.001356	0.000
Pacific	-0.0230393	.0016305	0.000	0.014033	.0014662	0.000	0.009006	.0017383	0.000
Bogotá	-0.0641428	.0024486	0.000	0.075935	.0025441	0.000	-0.01179	.0024222	0.000
SECTOR									
Services	0.0135238	.0011994	0.000	0.036893	.0011174	0.000	-0.05042	.0012405	0.000
Industrial	0.0029318	.0016682	0.079	0.02448	.0016047	0.000	-0.02741	.001727	0.000
AGE									
16-19 Years	-0.1008618	.0051819	0.000	-0.03659	.0041942	0.000	0.137453	.0052079	0.000
20-24 Years	0.0054109	.0032609	0.097	-0.04603	.0026789	0.000	0.040622	.0031443	0.000
25-29 Years	7.02E-05	.0021968	0.997	-0.02097	.0019139	0.000	0.020967	.0020664	0.000
COHORTE									
Born 1997-2000	0.0801981	.0059239	0.000	-0.13593	.0038008	0.000	0.055736	.0061901	0.000

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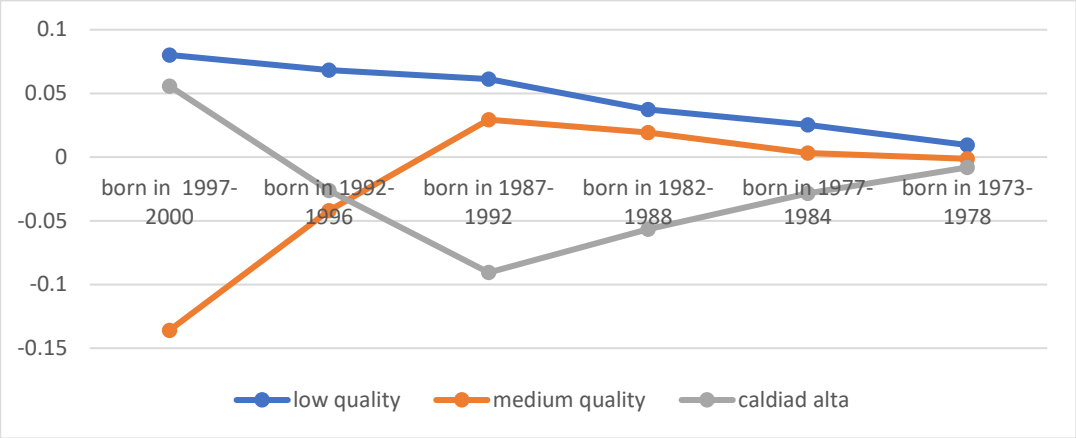
Born 1992-1996	0.0682657	.004172	0.000	-0.04194	.0037013	0.000	-0.02632	.0043826	0.000
Born 1987-1991	0.061227	.00323	0.000	0.029391	.0030633	0.000	-0.09062	.0032231	0.000
Born 1982-1986	0.0374662	.0023004	0.000	0.019174	.0021489	0.000	-0.05664	.0024813	0.000
Born 1977-1981	0.0253981	.0018121	0.000	0.003129	.0016694	0.061	-0.02853	.001902	0.000
Born 1974-1978	0.0094629	.0021075	0.000	-0.00125	.0018109	0.491	-0.00822	.0020576	0.000
YEAR									
Year 2012	0.6146999	.0012723	0.000	-0.189	.0017423	0.000	-0.4257	.0018426	0.000
Year 2016	0.6123525	.001578	0.000	-0.19849	.0019344	0.000	-0.41386	.0020894	0.000
Number of obs	541046								
Wald chi^2 (48)	166746.57								
Prob > chi^2	0.0000								
Pseudo R^2	0.2438								

Source: Own Elaboration from the resulted from the model.

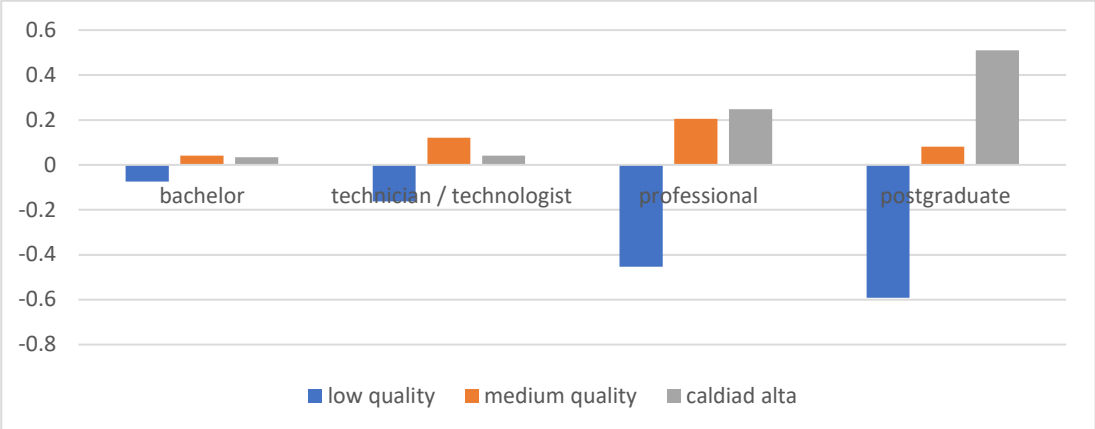
When analyzing the specific human capital, the age is observed, again taking as reference the people of 30-39 years. This effect is best seen in Graph 5, which shows that the most recent generations, ie younger, are more likely to be in low-quality jobs and this trend decreases as it moves toward generations older. In the case of education (Graphic 6), observed at a higher educational level more likely to be in jobs of medium and high quality

Chart 5: Marginal Effects for Cohorts on Quality of Employment



Source: Own elaboration based on model results.

Chart 6: Marginal effects of education on the quality of employment



Source: Own elaboration based on model results.

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This is where the greatest impact of education lies and it is in selecting, within the segmented labor market, the best jobs, this education is necessary in order to generate younger chances of getting quality jobs higher.

The work experience, represented by the age factors in the estimated models, has the main positive effects on employability and the possibility of employment in high-quality occupations. These results confirm the difficulty of occupational insertion of young people in Colombia, demonstrating the need for political actions that facilitate this process, especially the search for the first job. This leads to determine that there must be differentiated employment policies within the work trajectory of people, where the government must focus on the formal education of the entire population, but to generate a better labor transition it must help generate the first years of work experience, since the market is not doing it; In this way, investment in human capital should not only occur in the education variable (or health and nutrition as part of the theory explains) but also in work experience, and from there the work trajectory of people will begin to select the labor segment and the level of employment of each worker according to their human capital.

This means that the theory of human capital would have application in the labor news of labor segmentation in Colombia but seen from a temporal spectrum and shown that just focusing on education does not solve the problem of youth unemployment. Is more, in many cases it can be aggravated by high expectations of them university students and low job demand response companies higher quality, especially in formal jobs.

4. Discussion

The econometric models of the previous section show a greater difficulty of employment among the youngest, in addition to evidencing a behavior of occupational segregation of the Colombian labor market according to gender. Men are more likely to be in high-quality employment compared to women, despite having a similar level of formal qualification (with higher average schooling for women). As Table 1 shows, where the most recent generations show a higher gender gap with a participation of women in unemployment of those of 60% in the youngest and more than 50% in adults, even with levels of average schooling of women above that of men.

Within the labor demand variables, the region variable shows that Bogotá in the area where people are most commonly used and that they also do it in the formal sector (with respect to the Atlantic), the Pacific and Central region decrease the probability of being employed, but increasing the probability of being in formal employment and the Eastern region increases the probability of being employed, but decreases the probability of formal employment. This indicates that only the city of Bogotá generates an optimal employment space for young people, the rest of the regions that are most likely to use them are in the informal sector, and those that generate the lowest probability of employment leave out young, but those who occupy do it in formality. This regional disparity occurs in the areas of business development and human capital, where regions with greater industrial capacity such as Central and Pacific employ people with greater education, and the other areas with more service and agricultural vocations employ more informal youth with Less demand for qualifications.

The economic sector indicates that the services and industrial sector increase the probability of labor insertion with respect to trade, in the same way among young people who overcome the barrier of first employment, the industrial sector is the one that most helps to incorporate young people both for their labor insertion and to a greater extent in young people, so does the services sector, although to a lesser extent in

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the case of young people. This could happen because the most qualified young people can go to sectors with greater demand for skills such as industry or services, however, these sectors are not very developed in the country, so their demand is not as high with respect to sectors such as trade, or services, since within this sector there are jobs of high qualification, but also of very low qualification. This implies that without industrial development or business development in sectors that demand more and more qualified skilled labor, young people will have problems to deal with since the most educated will compete in the formal sector and the least educated in the informal sector.

Within the analysis, it has been stated that a fundamental characteristic of human capital, which is education, has differentiated effects between adults and young people. In addition, education has a different impact on general employability and on the modality of occupational insertion. On the one hand, people, especially young people, with a higher educational level are less likely to be employed. Focusing on the youngest, these results lead to greater difficulty in accessing a first job position, delaying the entry into the occupied labor market. If this delay is linked to the continuity of youth studies, this would mean an increase in the stock of human capital in the long term. However, the data also show an increase in the incidence of young people who do not work and do not study (the NEETs) in Colombian reality, which would indicate a possible lack of labor market at the same time that no formal qualification accumulates. This can be partially explained by the difficulty of the most educated young people in achieving a job can, demotivating occupational insertion and investment in studies.

On the other hand, education shows positive effects for those already employed, in the sense of facilitating the insertion into occupations of better socioeconomic quality levels. But this result is more relevant for adults, showing that the Colombian labor market has a preference for the accumulation of human capital through experience to the detriment of formal education. In this sense, the greatest difficulty lies in those seeking the first job, that the lack of experience is not compensated by education (both human capital factors). P or both, which are more educated young people are less likely to be employed because they have high expectations about wages and jobs.

In this case, efforts should be made so that young people have work experience, during their study period or in the transition from school to work, so that the barrier of first employment is overcome as soon as possible and to accumulate the years of experience that It requires demand. If this goal is achieved, education will not only cause young people to be employed in higher quality occupations but do so faster. In addition, faster and easier entry into the labor market can serve as an incentive to reduce the rates of young Neets and achieve better conditions as it stands [32-33].

5. Conclusions

Youth unemployment is a condition in which young people seek employment without being able to do so, likewise, young people face the possibility of insertion into precarious employment. Due to the magnitude of young unemployment in Colombia, the present study investigated its determinants, conditioned on the informal employment contexts that this population places in a scenario of vulnerability in their career, due to the fact of remaining unemployed or being placed in informal occupations and without social protection.

The economic literature places the theory of human capital at the center of analysis to find education as the main determinant (from the labor supply) of young employment. This theory comes from the classical and neoclassical postulates that speak of the heterogeneity of the workforce, their specialization, and the

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greatest returns, so that more educated young people have higher salary expectations among higher schooling, which increases their salaries backup.

Likewise, in this investigation the general and specific human capital, proposed by Becker, has different connotations and effects on young people, where this population has greater general but little specific human capital, because they cannot be inserted in companies that provide this training, Thus, companies when valuing specific human capital at the beginning of their career can leave young people with less experience out of the occupation. This also creates difficulties with the salary returns of education, which lead to greater schooling being invested as a maximizing decision of utility, so it increases the opportunity cost of young people by seeing that they are not easily used and changing their salary expectations.

This result is novel for Colombia since it shows that, within human capital, the experience and other aspects of specific human capital, is what most helps to employ young people, in addition to helping them to do so in higher occupations quality.

However, when young people overcome the barrier of first employment they are in greater advantage than adults because they are more educated and with an accumulation of experience, this is reflected in a greater probability of entering medium and high-quality jobs. This also shows that the employment policy must guarantee the first periods of experience with apprenticeship programs or practices that certify the experience since this is valued more than education at the beginning of the work life cycle, then education selects young people towards one of the labor segments and provides better conditions for educated youth.

Similarly, gender is an important determinant of youth unemployment, since men spend less time seeking employment compared to women, increasing their likelihood of being employed both in people entering the labor market and in young people who have experience (also in adults). The effect of this variable shows that, although women have conditions equal to or similar to those of men, they will have greater difficulties in employing themselves, so they will transition between unemployment, informality, and inactivity (more in-home care than educating yourself).

Thus, l economic policy must value the work history, give more importance to the experience in the firsts years of this experience and help young people who are in the informal sector have training necessary and sufficient to strengthen their specific human capital, so that they are better valued by demand and represent a lower cost for entrepreneurs. The foregoing as a complement to formal education, so necessary in every economy, so in the end the human capital thesis does explain the employability behavior of young people, but not as the literature clearly reflects, but the condition of segmentation labor and the temporality of their effects, lead to occur in a particular way in these economies.

The results of this research open up several lines of research in countries with segmented labor markets, such as Colombia, since young unemployment in these countries and high informality lead to the same conditions and limitations for young people. This compared to labor productivity, does not make clear the contribution of education alone, as more and more people are educated, but labor productivity is not increasing but falling, which implies that the most educated young people are not entering the productive system, that there is a formal market saturation or that the most educated people are not contributing to productivity because they do not acquire the necessary or required skills. This in itself generates a worrying situation for young people, although they are more educated, they have greater problems of labor insertion and youth unemployment in the region.

Finally, the work trajectories of young people should continue to be observed due to the displacement effect of the adult workforce that has an average educational level (bachelor's degree), and the analysis of

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the possible increase in informality in adulthood or unemployment of less qualified adults, for which the training carried out by the Public Employment Service will be vital for this population to be rearranged in the labor market.

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