Homeschooling - Unschooling Children, Adolescents and Youth: An Approach to the Calculation of Microeconomic and Macroeconomic Spending in Colombia

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Abstract

Homeschooling - Unschooling is a growing phenomena, everytime more and more families are choosing this type of education which is still considered transgressive for most sectors of the society. The growth of this practice has been accompanied by a progressive increase the number of investigations. This document presents a preliminary study which seeks to define the expenses incurred by families who choose to educate without school in Colombia. By using a survey as methodological tool and a nonprobability sampling, the authors found that for the families in the

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sample, the annual average of expenditure on education without school is higher than the annual spending in the US. This paper presents a micro and macro analysis of data on the expenses of education without school. In contrast to public and private school education, the Education without School has some advantages and features that should be considered by the formal school the school system some of them which can improve not only in school education but also current parenting practices in children and adolescents.

1. Introduction

Education without School (EWE) is a form of education in which families choose not to send their children to school for various reasons and instead directly assume the teaching and learning process of their children (EnFamilia, 2017). In this paper which is focused in the Colombian contexts we will use the term EWE to describe the diversity of approaches to used by the families who decide to not to send their kids to school, including Homeschooling - Unschooling and combinations of them. Some researchers on the subject define EWE as follows:

It is a kind of education that transcends the school space and renounces its traditional regulative forms (Jurado, 2011), for this kind of education the integral development of girls and boys is pursued the context of the family home or wider community circles, but in any case outside the official school institution whether publicly and privately owned (Goiria, 2009, p. 67). The scope of education without School (EWE) relates to the core concept of education, which aims to train individuals to be hospitable and not hostile to the others (Restrepo, 2011).

Education without School (hereinafter EWE), contributes to children's formative process because it recognizes their need for autonomous learning, their ability to teach themselves and their innate curiosity to approach knowledge. Thus, by questioning the excessive bureaucratization

and institutionalism of the education system, EWE brings up the possibility of raising education quality with the aim of bring individuals closer as opposite of regarding himself as a database that does not have the capacity to contribute in their own training.

During the past 50 years EWE has gradually achieved a growing recognition on the education agenda in countries like United States, Australia, Canada, France, Hungary, Japan, Kenya, Russia, New Zealand, South Korea, Thailand and United Kingdom , among others (Ray, 2016). As the attention EWE has been receiving has increased, new public policy proposals have been developing and expanding in the United States and other countries in previous decades (Waddell, 2010).

EWE is a worldwide phenomenon and which has been growing in Colombia during the past decades. Each year, the number of families that decide to not to enroll their children and assume their the constitutional right to education without resorting to formal school increases in the country.

Despite this growth, so far, no studies has been carried out in Colombia or in the region to determine the costs of the EWE. The aim of this document is to make a first quantitative and qualitative approach to calculate the costs of EWE in Colombia. It presents a comparative analysis between education expenses for families who choose EWE, families who choose private education and public investment in education in Colombia. With this first macroeconomic and microeconomic analysis of these figures the authors hope to contribute to the public debate and inform public policies on EWE.

To inform this study we used the cost of EWE in the United States, presented in Lyman (1998), Rudner (1999) and Ray (2010, 2016), we converted the numbers from these three studies to actual

prices in 2016 and used to obtain the average annual expenditure. We then adjusted the data using the Purchasing Power Parity index (PPP) to extrapolate and obtain the expected costs of homeschooling in Colombia. To obtain data of expenditure of EWE families in Colombia, we used responses to an online survey provided by from 121 families with an average of two (2) children. We found that the average monthly expenditure for girls and boys 0 (zero) to 5 years is USD 309 (about $ 385,000 adjusted by PPP 2016), for children between 6 and 12 years of age, average monthly spending is USD 492 (about $ PPP 2016 adjusted 615,000) for teenagers between 13 and 17 years of USD 507 (about $ 635,000 adjusted by PPP 2016). In general, we can say that for the families of the sample average monthly spending without school education is USD 445 (about $ 550,000 adjusted by PPP 2016).

2. Studies on the cost of EWE in Colombia and calculation using the statistic Purchasing Power Parity (PPP).

The most relevant precedents to inform our analysis of expenditure come from the work of Lyman (1998), Rudner (1999) and Ray (2010, 2016). These studies presented values on the average annual spending in US prices for 2016 of USD 643 for every child who is Homeschooled or unschooled in the US (see Table 1).

Table 1 shows the weighted average spending in each of the mentioned studies. In order to compare the results from these studies with the prices in 2016, dollar figures were adjusted according the exchange rate for the period using the Consumer's Price Index (CPI). We then used the purchasing power parity (PPP) index to transform Colombian currency to that value. The PPP index will be important throughout the document, this is an international conversion factor that represents the value in US dollars of items purchased in different countries (Epstein and Marconi, 2016). In other words, it is an adjustment to the exchange rate that takes into account the cost of

living in each country and is used by the World Bank, although it is normally used for adjusting macroeconomic indicators in this case will use it to calculate make a first approximation of the costs of EWE in Colombia.

Table 1. Comparison according to different studies spending per EWE child in the US, and calculating the average price adjusted to December 2016.

	Study			
	Lyman (1998)	***Rudner (1999)***	***Ray (2010)***	***Ray (2016)***
Period Analysis	***1997***	***1998***	***2009***	***2015***
Annual average expenditure EWE in the US	USD 546	USD 400	USD 500	USD 600
Spending adjusted for annual inflation in United States at 2016 prices*	USD 816	USD 589	USD 559	USD 608
Average annual expenditure per capita at 2016 prices	USD 643.06			

***** Calculation estimated for this study**.**
Source: Lyman (1998), Rudner (1999), Ray (2010.2016) and World Bank (2017).

Table 2. Calculation of price parity education spending per child for Colombia to December 2016

Average annual expenditure per EWE child at 2016 US	USD 643.06
Exchange rate peso-US dollar (annual weighting 2016)	$ 3,054
PPP Conversion Factor (annual weighting 2016)	0,41
Hypothetical annual per capita spending in Colombia calculated by the purchasing power parity - (adjusted for CPI in US to 2016)	$ 804,025.74

* Calculation estimated for this study**.**
Source: World Bank (2017), National Administrative Department of Statistics, DANE (2017).

The results of Table 2 show that on average in Colombia, annual spending of EWE for each girl or boy would be $ 804.026 (Colombian pesos). However, this figure is only an approximation because it relates to estimated costs for United States which probably departs from the Colombian

context, where expenses may be different due to differences in infrastructure and in provision of free access to public goods. It should be noted that, unlike what happens in other countries, EWE in Colombia is not associated with widespread appropriation of public space or institutional infrastructure, so that several families who choose to educate their children without school assume the cost of many services that in other countries such as the US would be publicly provided. These differences are an important reason to undertake the empirical work for proposed by this study.

It is also necessary emphasize that in Colombia social segregation, product of the disparity between the services offered by private and public schooling is very high. In the country there is a widespread phenomenon of marginalization that puts a clear distinction between people who can afford private schooling and those who don't and have to send their kids to public schools. The expense ratio for the two types of education is extremely uneven. While annual tuition and monthly fees in public school are free since 2012, in a private school, according to the Ministry of Education (2017) the annual average ranges from USD 642 ($ 803,616 adjusted by PPP 2016) in Pasto (Nariño), to $ 3340 ($ 4,176,884 adjusted PPP 2016) in Chia (Cundinamarca). The annual average for the country is $ 1443 ($ 1,805,006 adjusted PPP 2016). We know however, that these data come from local averages and there are a lot of private schools, especially in major cities where costs of education are much higher. According to the Ministry of National Education (MEN, 2016), of the 10,424 private schools in Colombia reporting information to the local School Boards, 27.8% (2901) exceed the national average. More specifically in 11.1% (321) of private schools that exceed the national average are education costs are more than USD 8,000 (more than $ 10,000,000 adjusted by PPP 2016).

This document aims to present a comparative analysis between EWE spending, private education spending and public investment in education in Colombia. The goal is to make a first

macroeconomic and microeconomic analysis in order to quantify educational expenses incurred by families Colombia and to broaden the public debate about EWE.

3. Methodology

For this study we used a mixed methods approach, both quantitative and qualitative.

Target population and population universe

The target population of this study were the EWE families in Colombia. There is no reliable data available on the numbers of families that have chosen this model in the country, therefore the size of our target population unknown. Given that he numbers of support networks for EWES families in Colombia have been growing. Even though there are unknown numbers of EWE families which do not participate in these networks we used these networks to make a first approximation to the target population. Our unit of analysis was the family (household) and the information source were mothers and fathers.

Instrument for data collection: Questionnaire design

Data were collected with the help of a survey as methodological tool. The survey consisted of 17 questions, the first five (5) were designed to characterize the population. Question six (6) to eleven (11) inquired about income and expenses for each unit of analysis. The last six (6) questions relate to the physical, monetary and time expenses invested in EWE resources by these families. Multiple choice questions were designed with the electronic tool *Google Forms*. To validate the instrument a preliminary survey was conducted with five (5) EWE families.

The survey instrument used in this study builds up upon a previous study conducted by Erwin Fabian Garcia Lopez and Carlos Cabo González (*Education without School Survey in Colombia and Spain: Comparative* which used Cabo (2012) doctoral dissertation as input; and in the conference presentation *"Preliminary advances in the surveys about EWE in Colombia and Spain: Comparative study"* presented at the Second International Congress on EWE - National University of Colombia in 2010. This first characterization has been also used as an input by in other publications such as Garcia (2011, 2015) and Barrera, García & Wills (2016).

Techniques for Data Collection

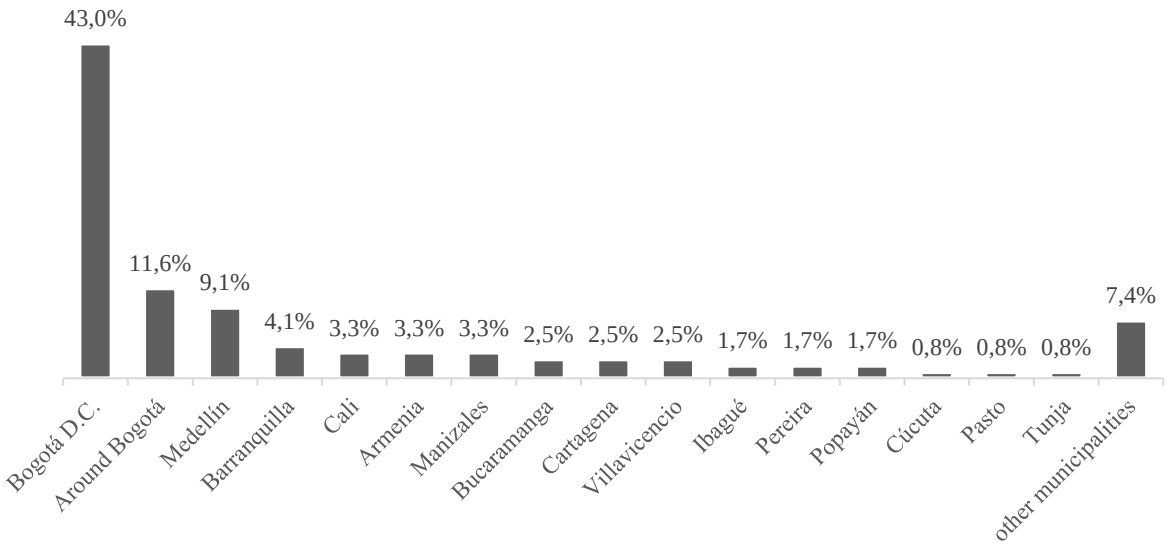
To collect the information, we sent the survey form via email to the mailing list of the largest and oldest EWE network in the country: the Colombian Family Education Network -Red EnFamilia- which has approximately 1387 registered families. The form, was voluntarily answered by 121 of these families during the period of October to November 2017.

Due to restrictions on sampling the whole population, and according to Manterola and Otzen (2017), Baptista, Fernandez and Sampieri (2014) and Pepper (2000), we were not able to take a random sample, so we cannot make statistical inferences that will allow to generalize to the whole population. It should be noticed that this study also incorporates the analysis of qualitative results collected for more than a decade during the activities of the Participatory Action Research in EWE group from the National University of Colombia, through the projects and courses: Self-directed and collaborative Learning, Family Education, and Models of Flexible Schools. We used field notes collected during the courses, local and regional meetings with EWE families as well as observations and semi-structured interviews with dozens of EWE families in Colombia.

4. **Survey results**

Sociodemographic Characterization of the Households

Figure 1. Location

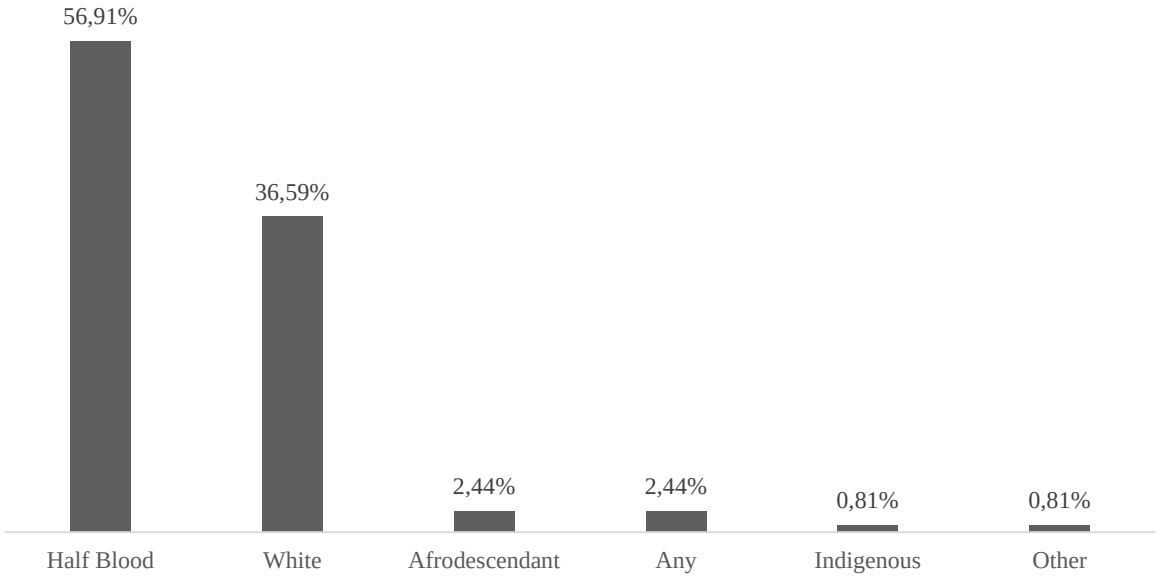


The first figure shows that most of the surveyed population is located in the city of Bogotá. Forty three percent of respondents live in the capital, while 11.6% of the families live in municipalities around the capital, 16.5% live in one of three cities by population followed the district capital, namely, Medellin, Barranquilla and Cali, 21.49% of families live in medium-sized cities like Armenia, Manizales, Pereira, Bucaramanga, Cartagena, Villavicencio, Ibagué, Popayán, Cúcuta, Pasto or Tunja and 7.44% live in other municipalities, namely, Copacabana, Rionegro (Antioquia), Bonaventure, Jamundí (Valle), Soatá (Boyacá), Calarcá, Montenegro (Quindío) or Fonseca (Guajira). One respondent stated that the family has established a place of residence because his family permanently traveling.

This information along with field notes and results from previous surveys indicate that that EWE it is not only growing in Colombia, but is expanding geographically even beyond city capitals. Researchers conducting this study have also seen an expansion of EWE in Colombia, in

rural peasant communities, neo-rural and indigenous communities, especially in the South Pacific region where EWE finds resonance and consistency with concepts and reflections of their ancestral culture.

Figure 2. Ethnicity



The classification according to ethnicity presented in Figure 2, reveals that only 6.5% of the families surveyed do not consider themselves as White or Mestizo. Only two (2) families refer to themselves as an interracial couple, one of them recognize themselves to be a mestizo-white couple and another mixed-African descent. Seventy families surveyed declared to be mestizos (half-blood) and 45 recognized themselves as white. Only two family identified themselves as indigenous (Arhuaco, Kubeo, Embera, Guambiano, Witoto, Inga, Kankuamo, Paez, Pasto, Pijao, Sikuani Tucano, Wayuú, Zunu or Neo-Muisca). Three families identified themselves as African descent and the same number did not identified themselves as belonging to any ethnic group. This classification was based on the ethnic categorization used by the Colombian Ministry of Education in their registration forms for state tests in secondary education.

Figure 3. Religious group

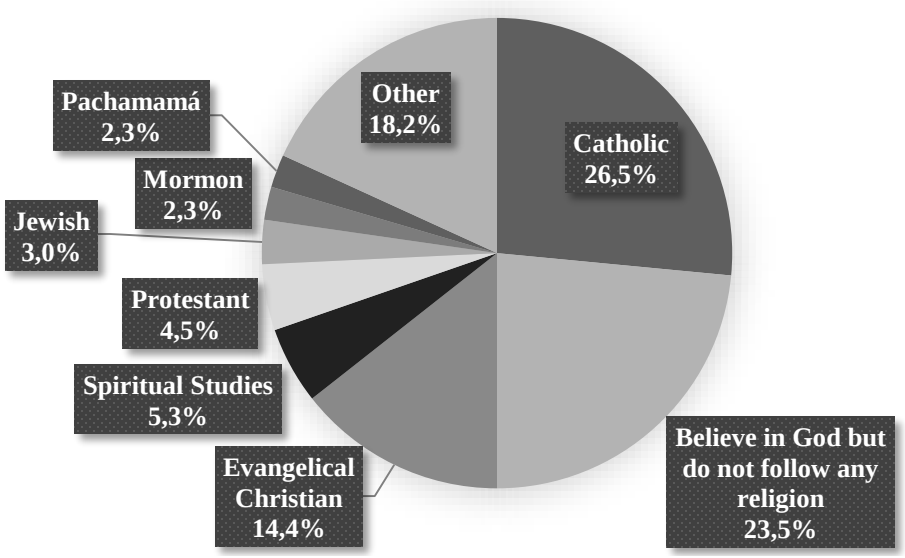
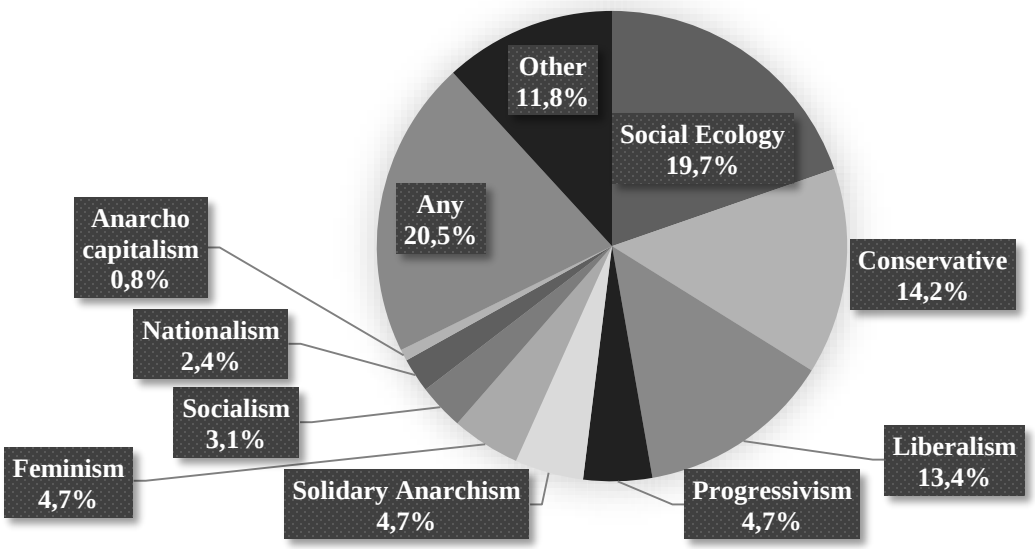


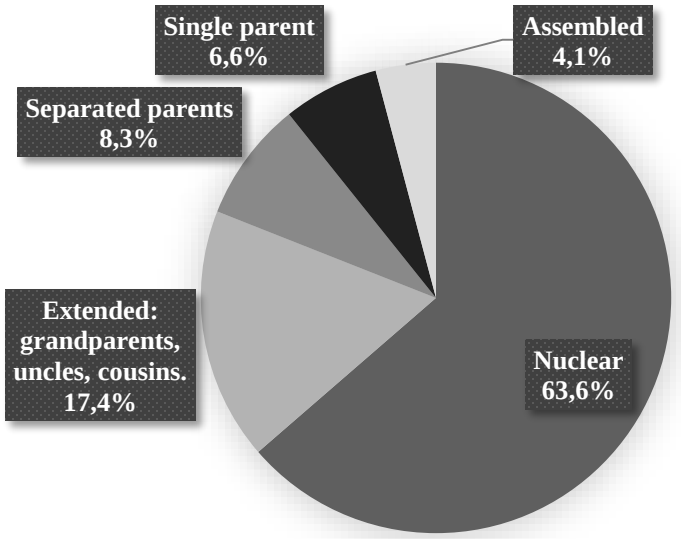
Figure 3 indicates that 27% of the respondents recognize themselves as Catholics, 23,5% believe in God but do not follow any religion, 14% are evangelical Christians, 5.3% practice spiritual studies or new age, 4.5% are Protestant, 3.0% are Jews, 2.3% are Mormons (3) and 2.3% identify themselves as Pachamámicos (mother-earth religion) (3). Eighteen percent of the families said that they believe in God but don't practice any religion. Only two (2) families were identified as atheistic and one (1) family was recognized as agnostic. Other religions less represented in the sample were: Adventists (2), Buddhist (2), Hare-Krishna (2), Pantheism (2) Charismatic Catholic (1), Charismatic Evangelical (1), Pentecostal (1), Jehovah Witness (1), Orthodox Catholic (1), Reformed Baptist (1) and Baha'i (1). Two families responded that they do not belong to any religion and three (3) were identified themselves with one of these positions: love without religion, personal religion or religion of the land. A family said they did not know. Some families were identified with two or more religions. This classification of religions follows the one proposed by Beltran (2012).

Figure 4. Philosophical and political stance



Regarding the question about philosophical and political stance it is important to note that responses are based on a subjective self-identification since no definition of the terms were included in the interview. Twenty-five (25) of the families surveyed claimed to be or have a member whose position corresponds to the Social Ecology, 18 identified themselves within the conservative stance, 17 within liberalism, 6 with progressivism, six with solidary anarchism , 6 with feminism, 4 as socialist, 3 as nationalists and one as anarco-capitalist (see Figure 4). Twenty-six (26) of total respondents did not identify themselves within a stand and 15 recognized themselves in the category *Other*, which included answers like Christianity (3), humanism (3), social theology of the church (1) , participation, accountability, cooperation and respect (1), free (1), libertarian (1), epicureanism (1), continental Chavism (1), center-right (1), capitalism (1) and "policy is good, the problem lies in what is in the hearts of men (1). It should be noted that some of the families selected two or more categories. The classification was made based on Heywood (2017).

Figure 5. Family Type



Results show that 98 respondents reported being part a family where both parents live together either by themselves as a nuclear family or with the extended family. Twenty three respondents (19.01%) identified themselves as single-parent, separated parents or reconstituted family (see Figure 5).

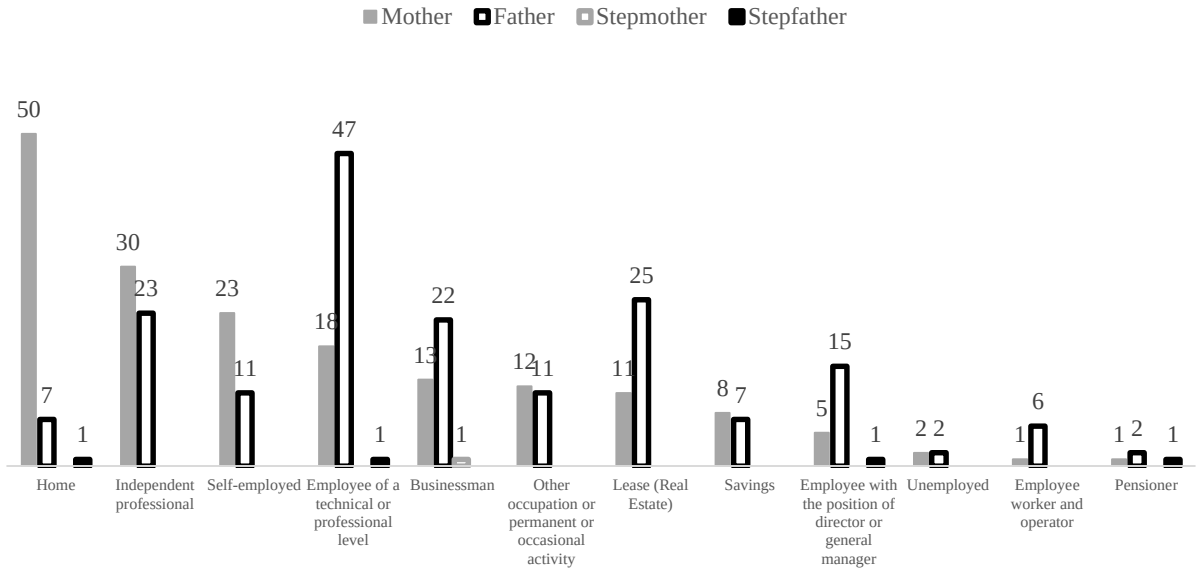
Questions 6 (Source of household income) and 16 (What percentage of the monthly time mother and / or father allocate to EWE), it can be inferred that of the 10 families identified as single-parent or separated parents, the mother is the head of household and only one is the father who is responsible for raising daughters and children. The classification used in this question used approaches from Valdivia (2008).

Microeconomic characterization of the sample

The results from household income (Figure 6) stand out for its extreme variation. Fifty respondents (41.3%) identified themselves as housewives, 32 of them said that they also earn income from other activities, 43.8% of families reported that mothers work independently in their

profession or self-employment, 39.7% of surveyed households reported that the father's main source of income comes from a technical profession (including a stepparents), 39.7% of families reported that fathers earn income from leases (real estate) or are self- employed professionals; finally one family reported that his daughters and / or sons also assists in obtaining income for the household.

Figure 6. Number of families who recognize the following activities as their source of income



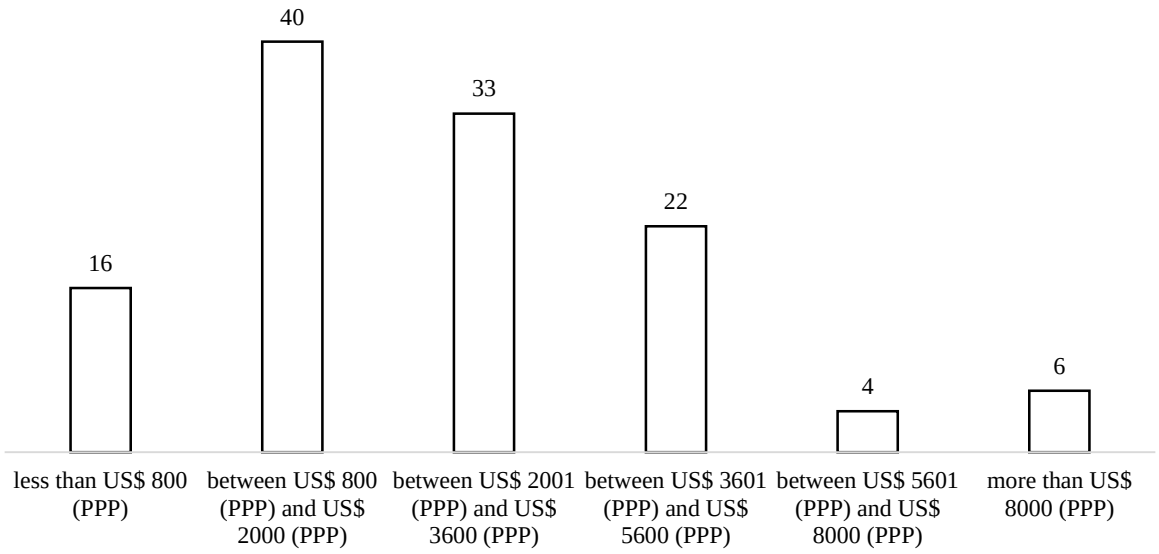
In general families derive their income from two or more activities. It is also worth mentioning that only six (6) of them reported that their source of income came from their work as laborers or workers. Particularly those who reported this category as source of income did not have a second source.

It should be noted that, of the 50 families who report that the mother spent time on household chores, 36% (18 families) declared that they have a marital arrangement in which the mother is dedicated exclusively to home and father to earn income. Using Question 16 (What percentage of

the monthly time mother and / or father allocate to EWE), we can say that from these 18 families, 8 reported that the mother was the one who spent time educating their daughters and sons.

The classification for source of income followed the categorization of the Colombian Ministry of Education in their registration forms for state tests for secondary education.

Figure 7. Number of households by range of monthly income. Dollar figures adjusted for purchasing power parity for Colombia (PPP 2016)

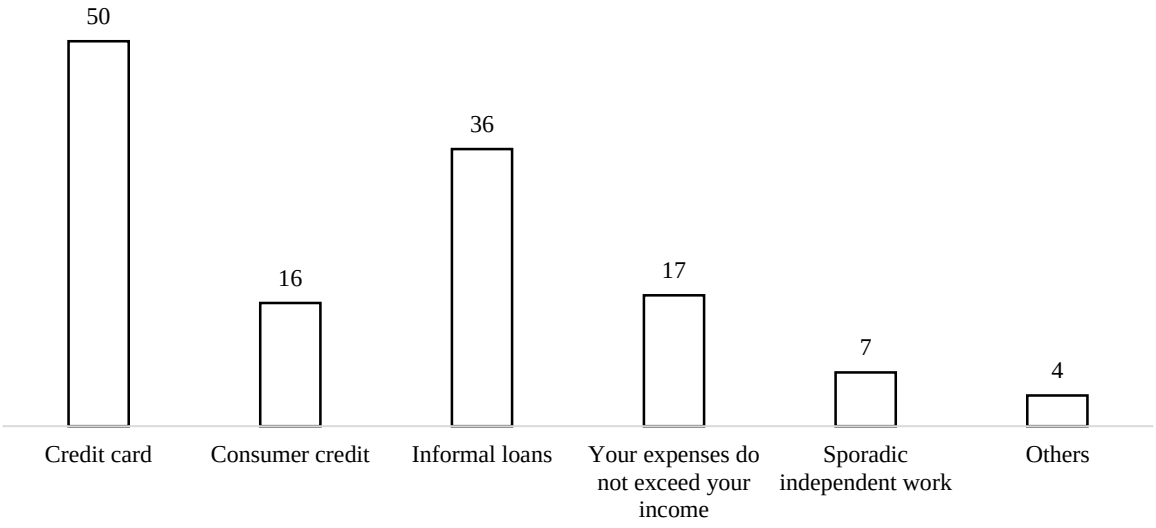


Income options for this questions were: *i)* less than $ 1,000,000, *ii)* between $ 1,000,000 and $ 2,500,000, *iii)* between $ 2,500,001 $ 4,500,000 and, *iv)* between $ 4,500,001 $ 7,000,000 and, *v)* between $ 7,000,001 $ 10,000,000 and, *vi)* more than $ 10 million. These figures were adjusted and rounded to the conversion factor for Colombia of purchasing power parity in 2016 (coefficient: 0.409, exchange rate: $ 3,054) provided by the database of the World Bank (see Figure 7).

Results highlight that, are more families who earn higher monthly income up to USD 3,600 (PPP 2016) than those receiving less than USD 800 (PPP 2016), showing a preponderance of households with above average income in sample of households. According to Cardenas (2013) in

Colombia the 75th percentile of the monthly income is around USD 1,450 ($ 1,553,675 adjusted PPP 2008); 53.72% of our sample exceeds this range and 33.06% is located around it.

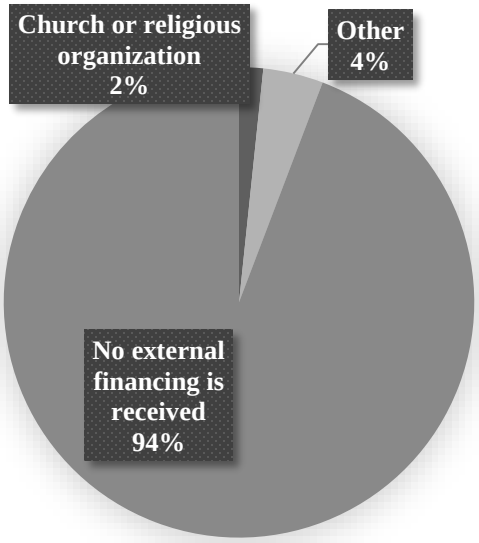
Figure 8. Financing of expenditure (number of families)



Fourteen percent of the households reported that their expenses do not exceed their income. When households reported that they do not cover their monthly expenses with their income 71.1% of respondents said they get in debt through the financial system, 2 reported using savings and 2 families did not respond.

While further studies regarding the diverse sources of financing of EWE families; fieldwork are still necessary, empirical observations and semistructured interviews around the EWE in Colombia allow to infer that many of these families often have economic practices with lower debt levels. In many cases EWE is an intentional economic strategy for upper-middle class families, to optimize economic resources and minimize debt level due to the high costs of private education.

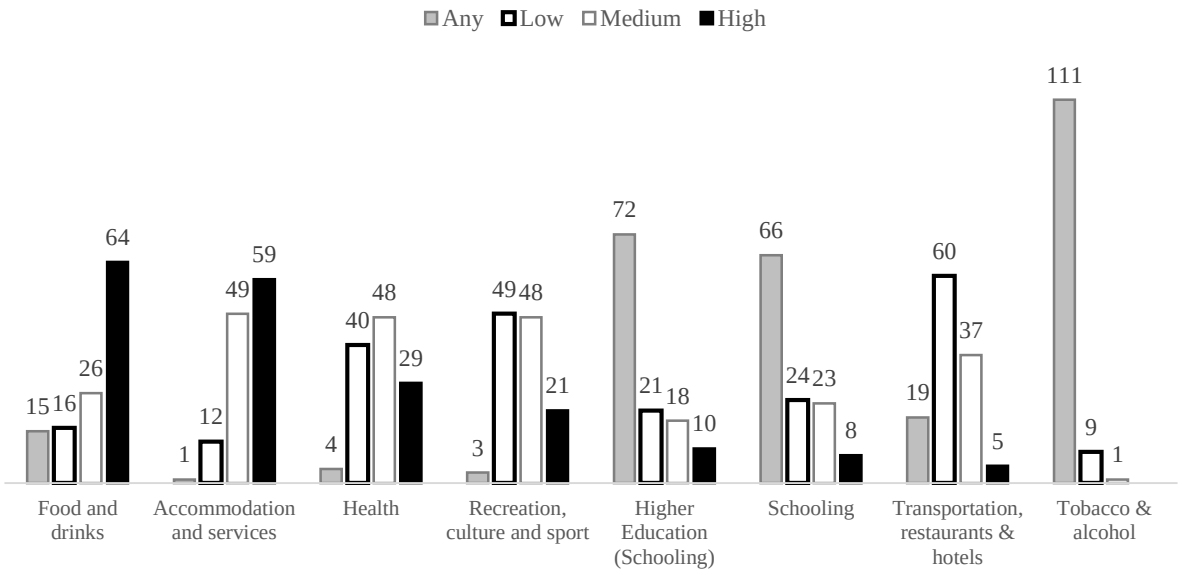
Figure 9. Percentage of families with external economic support



Results revealed that external financing of EWE is not a widespread practice. No local community organizations or public institutions were reported as external sources for EWE funding. Two families that identified themselves as charismatic Catholic (1) and reformed Baptist (1) and said that they receive funding from their church and religious organizations. The four (4) families that selected the other category reported receiving financial support for from their extended families (3) or grants (1).

Field notes, empirical observations and semistructured interviews conducted during the courses of Education without School at the National University of Colombia and the various local and regional meetings of EWE groups, suggests that the phenomenon of external financing by churches, mainly evangelical, is grown especially among the popular sectors. A more detailed quantitative study may shed light on the trends of this practice.

Figure 10. Order of importance of monthly household spending (number of families per category)



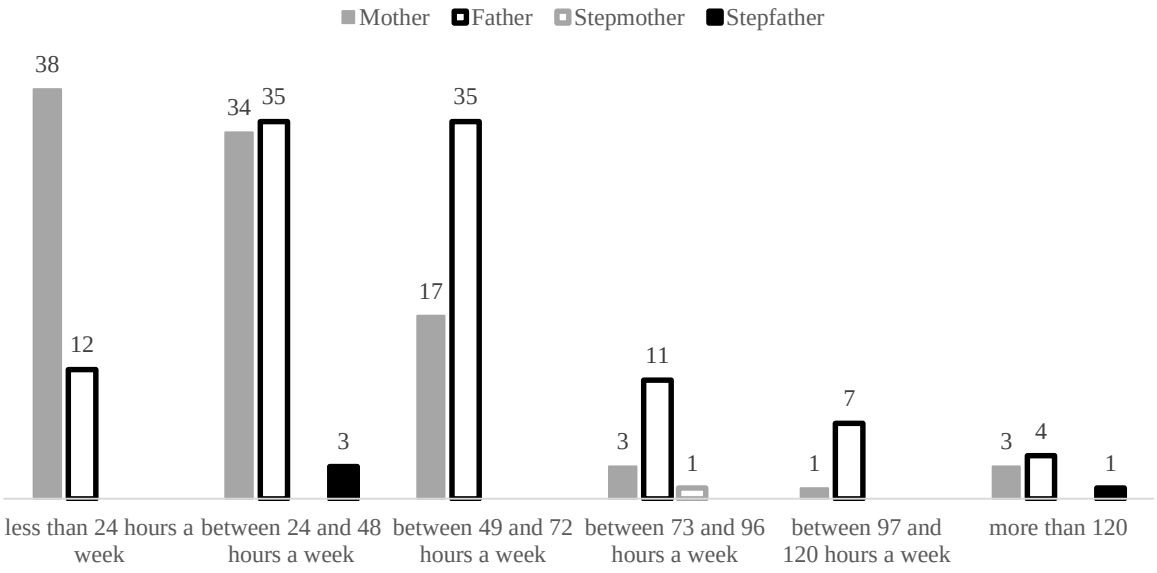
The order of importance of family expenditure (see Chart 10), reveals that the higher order of importance in household spending goes in food (89.26% of families selected the high average option), housing (74.38%), health (63.64%) and recreation & sport culture (57.02%). Families marked low or no expenses in tobacco and alcohol (only 0.83% of families selected the high average), schooling in higher education (23.14%), schooling of any member of the family (25.62%) and transportation (34.71%). The classification for this question took as reference the structure of expenditure proposed by the National Department of Statistics DANE.

Low or no margin of spending on tobacco and alcohol in the surveyed households is reinforced by empirical observation of EWE families, which generally have selfcare practices that increase the welfare of the family.

In general the average time spent earning income (see Figure 11) is higher for fathers, in all time categories except for the category of less than 24 hours a week. Of the 97 mothers (including a stepmother) who responded, 74.23% spend less than 49 hours a week to earn income and 4,12%

spend more than 72 hours. Of the 108 parents (including four stepfathers) who reported some response, 46.30% allocate less than 49 hours a week to earn income and 10.19% spend more than 72 hours. Two families reported that father and mother devote between 73 and 120 hours. Three recorded that both parents spend more than 120 hours a week to earn income; when comparing this answer to question 13 (average time devoted to education EWE for each child or adolescent in the family group) of these families, three (3) spend more than 67 hoursweek to attend education without school their daughters and sons.

Figure 11. Average time spent earning income (number of people per category)



Taking into account the number of families surveyed, on average, they have two (2) children, something compatible with the trend of families with socioeconomic conditions above the average according to the 2008 quality of life survey (Cárdenas, 2013). Twenty four percent have only one daughter or son, 55.37% have two, 18.18% have three. Two families reported having four children. No family surveyed claimed to have more than four children. Of the eleven (11) families that reported having an adult daughter or child (in Colombia, the adult age is considered to be 18 years

old or older), each of them has at least one other daughter and / or youngest child of 18 years (see Figure 12).

Figure 12. Age of the daughters and sons according to different types of EWE (number of people per category)

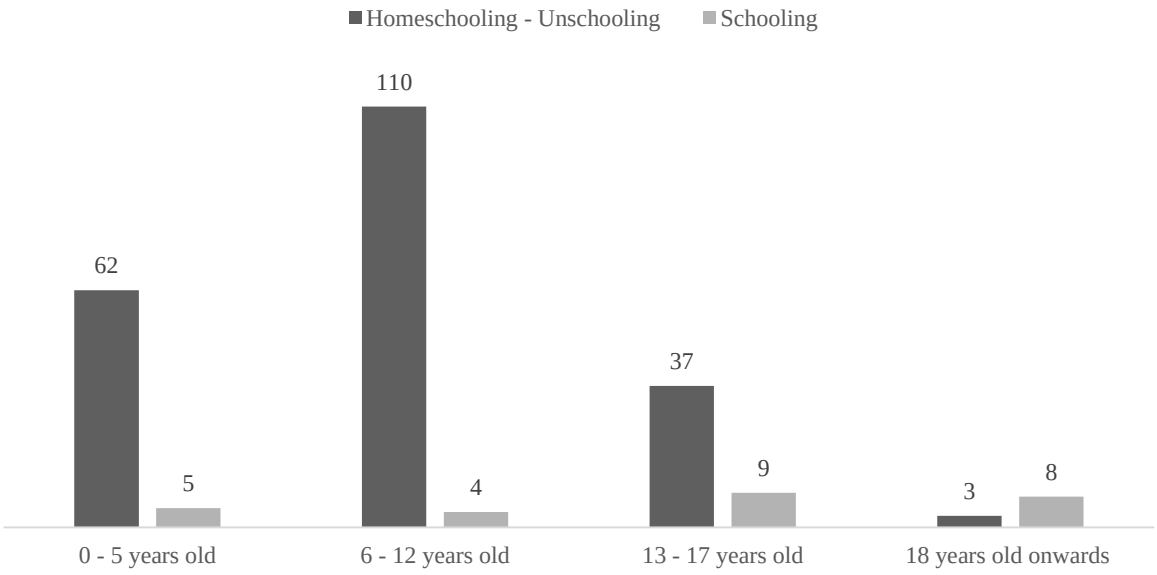
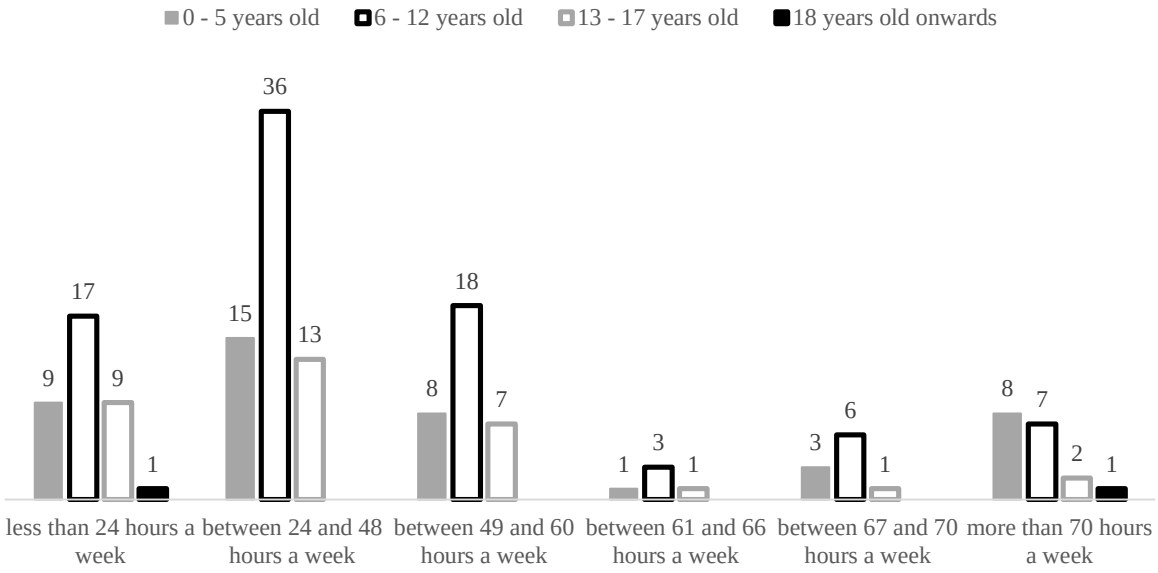


Figure 13. Average time dedicated to EWS for each child or adolescent member of the family group (number of families by category)



Respondents to question 12, reported 212 girls, boys and adolescents who are EWS. As families registered the average time and not the total, this question (see figure 13) only registered 166 results. For example, if a family has two daughters in the age range of 6 to 12 years to whom he dedicates between 24 and 48 hours, this figure was not recorded twice but was taken into account only once, as an average. This is because large families can skew the overall average. Results indicate that 38.55% of mothers and fathers allocated an average of 24 to 48 hours per week to the education of their daughters and sons, 21.69% allocated less than 24 hours and 19.88% between 49 and 60 hours. The same percentage was recorded among mothers and fathers who spent more than 60 hours a week for the education of their children. While the sample has an extreme variance and it is not possible to determine a significant negative correlations between the time allocated to obtain income or the amount of income and the time allocated to the EWS of the daughters and sons. Although no family that reported earnings above USD 5,600 ($ 7,000,000 adjusted for PPP 2016) reported more than 60 hours a week to this practice.

Families that reported a family member that is dedicated to the home or that the mothers were exclusively dedicated to the home, spend more time EWS. On average, the families that registered that neither the mother nor the father is dedicated to household activities (70) registered a weekly dedication of 39.5 hours, less than the 43.5 hours dedicated by the families in which one of the members dedicates part of his time at home (51). It cannot be affirmed for this sample that the income, the average time dedicated by the mothers and fathers to obtain income and the source of income influences the amount of time spent accompanying the EWS of their daughters and sons.

Figure 14. Resources and tools used by families that educate without school (number of families by category).

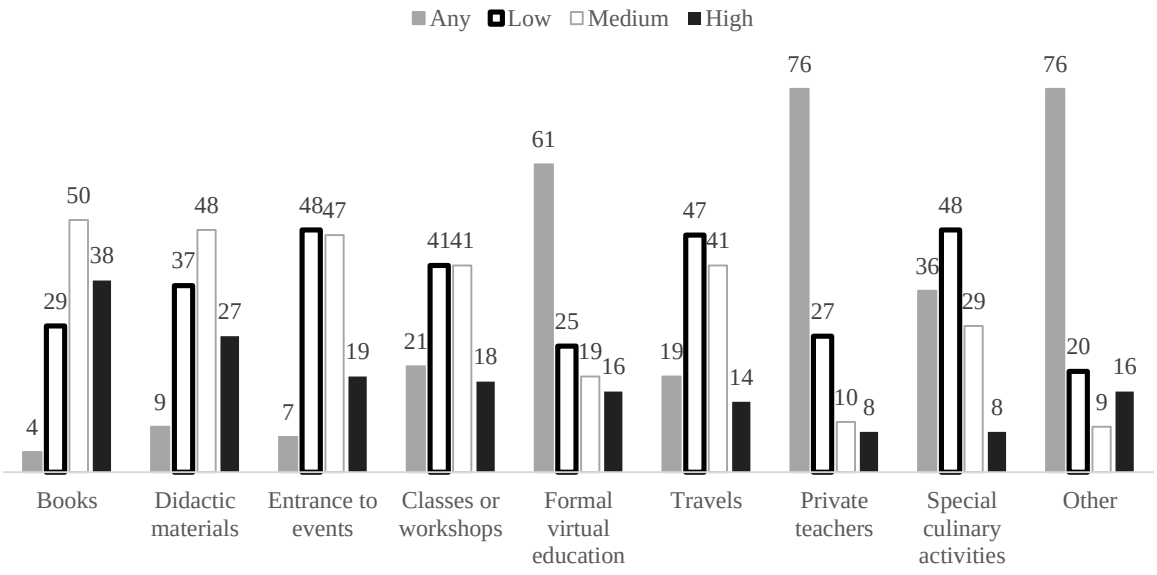


Figure 14 shows that among the materials identified by the families as elements and characteristics that are part of the type of their EWS practice, 3 out of every 4 families (72.73%) allocate an amount that in relation to its own consumption is high or medium. Likewise, didactic materials (61.98%) and tickets to events such as theater, cinema or museums (54.55%) receive a high or medium spending score. About 1 in every 2 families (48.76%) dedicate resources to private vocational classes or workshops and in a similar proportion to trips (45.45%). The majority of families surveyed (71.07%) consider that there is little or no expenditure on formal virtual education and only some (14.88%) allocated a medium or high amount to private tutors. The number of families that allocate significant resources to special culinary activities is also relatively low (30.58%).

Twenty percent of the families choose other as option. Question 15 refers to this option and it was found that in general the families that answered this question consider field trips, conversational-experiential work, sports activities, play and free learning, non-formal virtual learning, the home gardening and religious events as important parts of their EWS experience.

Figure 15. Evaluation of the monthly time dedicated by the mother and / or father to the EWS of the children and / or adolescents members of the family group (number of people by rank). Figures adjusted by PPP.

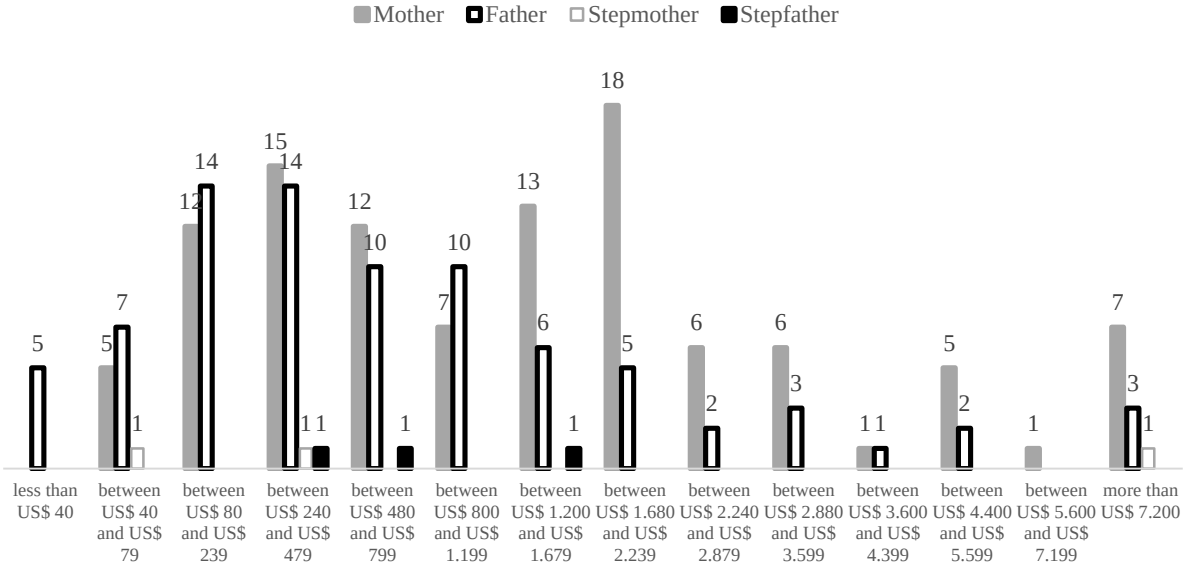


Figure 16. Correlation between income level and time valuation

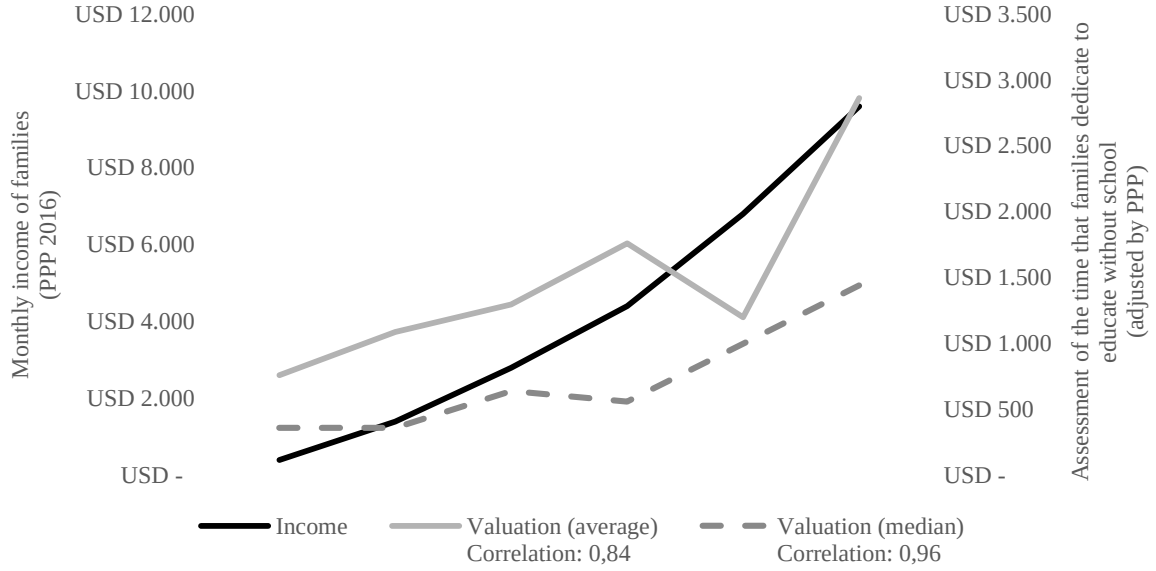


Figure 15 shows families reported a higher proportion of woman (mothers and stepmothers), dedicating time to EWS (56.63%). Of these, 41.44% value the time devoted to accompanying the EWS of their children on less than USD 800 per month ($ 1,000,000 adjusted by PPP 2016), 34.23% consider that the value of his dedication ranges between USD 800 and USD 2,239,000 ($

2,800,000 adjusted by PPP 2016). The remaining 24.32% considered that the value of their time was greater than USD 2,240 per month.

The assessment of the time spent by fathers and step fathers reveals that 61.18% allocate less than USD 800 per month, while 15.68% allocate USD 800 and USD 2.239. For the remaining percentage (12.94%) the valuation exceeds USD 2,240. In general, there is a higher valuation of the time dedicated to the EWS of the mothers (and stepmothers) that surpass 1.69 times the economic estimate that is made of the time dedicated to this work by the fathers (and fathers). Contrary to the trend shown above, responses on the monetary evaluation of the time dedicated to the EWS of children has a direct correlation with the income of the families. As seen in figure 16, this correlation is positive; meaning that the more income the families receive, the more considerable is the monetary valuation with respect to the time devoted to EWS.

Figure 17. Monthly Expenditure on Education without School, segmented by age range and adjusted to the dollar by PPP 2016 (number of families by rank)

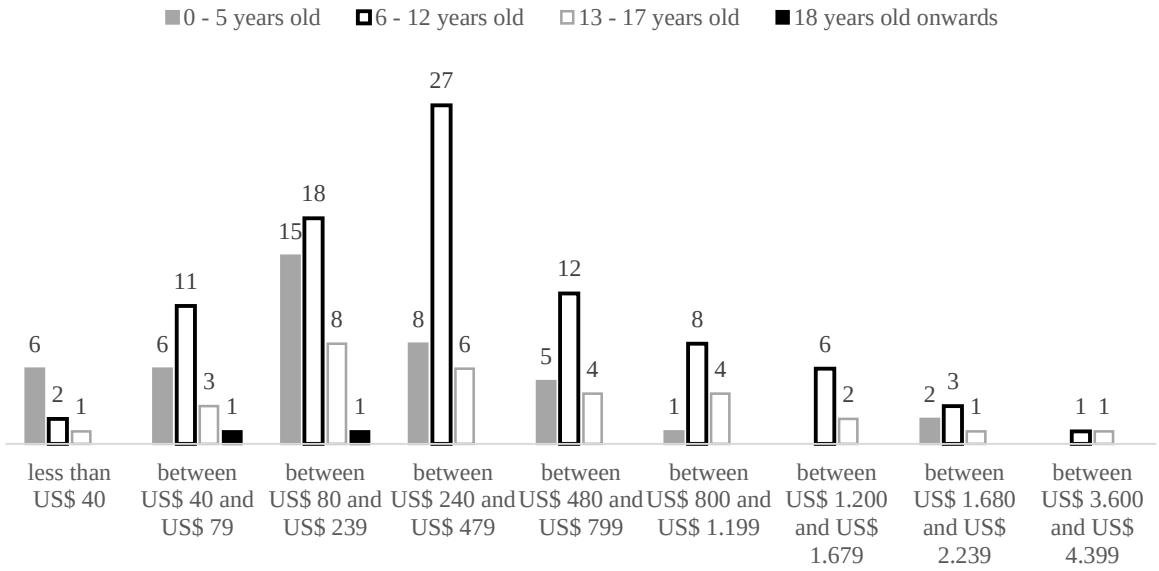
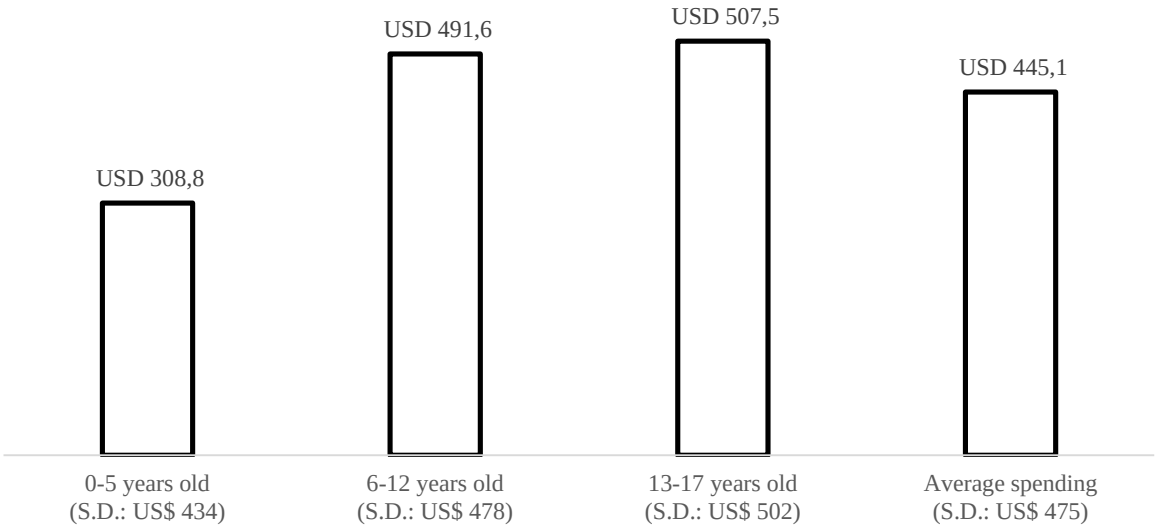


Figure 17 shows a trend in the monthly expenditure of educating without school for children from 0 (zero) to 5 and from 13 to 17 years old in the range between USD 80 and USD 239 (between

$ 100,000 and $ 300,000 adjusted for PPP 2016). The same happens between USD 240 and USD 479 (between $ 300,001 and $ 600,000 adjusted by PPP 2016), and for girls and boys between 6 and 12 years old.

Figure 18. Average monthly expenditure in dollars (adjusted by PPP 2016) of educating without school by age range.

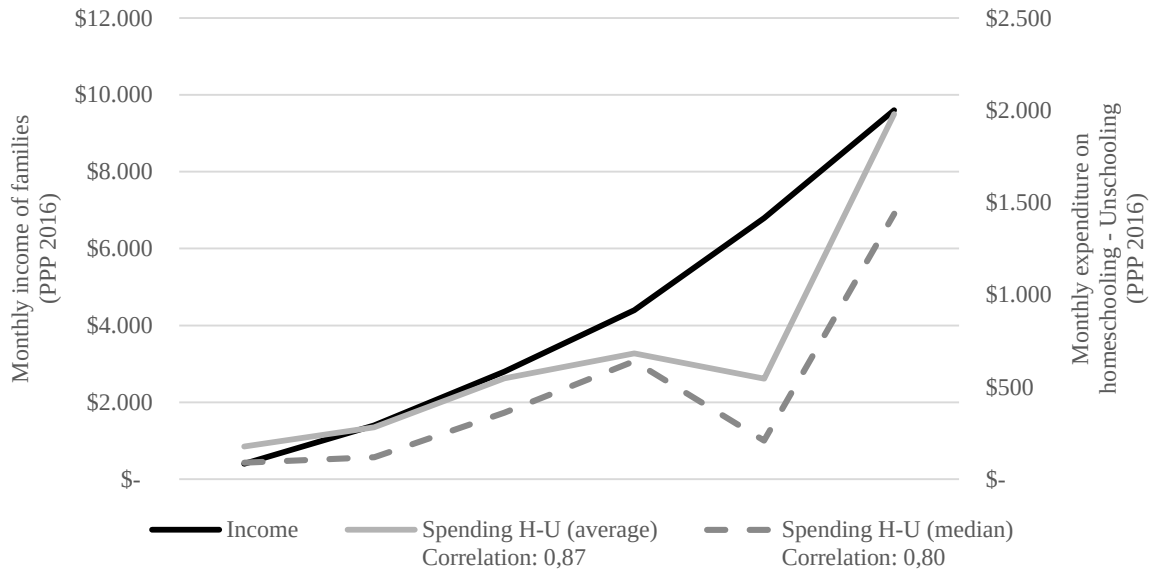


*S.D.: Standard Deviation

As can be seen in Figure 18, if the two outliers are excluded (these are in the range of USD 3,600 and USD 4,369), the average monthly expenditure for girls and boys from 0 (zero) to 5 years is of USD 309 (about $ 385,000 adjusted for PPP 2016), for girls and boys between 6 and 12 years of age the average monthly spending is USD 492 (about $ 615,000 adjusted for PPP 2016) and for adolescents between 13 and 17 years of USD 507 (about $ 635,000 adjusted by PPP 2016). Results show that for the families on the sample, the average monthly cost of educating without a school is about USD 445 (close to $ 550,000 adjusted for PPP 2016).
If these data are compared with the family income, a positive correlation (0.79) between the average income of the family and the average monthly expenditure of the EWE, can be found. In

other words, the more income the family gets, the greater the amount destined to the EWE of their daughters and sons (see Figure 19). However, if we compare the cost of educating without school, no longer in absolute numbers, but as a percentage of the income of the families surveyed, there is a negative correlation (-0.87), that is, the higher the income of a family, the lower the proportion of expenditure destined to the education without school of their daughters and sons.

Figure 19. Correlation between income level and expenditure incurred by EWS families



If these data are compared with the number of daughters and sons, it is found that there is an inversely proportional relationship between these and the amount allocated to the EWE, this negative correlation is of the order of -0.87 and implies that on average the families surveyed allocate a smaller amount of their resources to each EWS girl, boy or adolescent, as the number of daughters and / or children increases.

Microeconomic and Macroeconomic Analysis of Expenditures

If we take as reference the monthly average expenditure reported by the families, that is, USD 445 (close to $ 550,000 adjusted for PPP 2016), the average annual expenditure is equal to USD 5,340 ($ 6,677,358 adjusted for PPP) 2016). That is, the expenditure is 8.3 times higher than the studies conducted in the United States by Lyman (1998), Rudner (1999) and Ray (2010, 2016), related in Table 1.

If this annual average is compared with Colombian public education expenditure in 2015 (Table 3), and after adjusting it to 2017 prices (taking into account the CPI accumulated during the year) it is found that the expenditure per capita in primary, secondary and middle school is USD 2,860. That is, the average annual cost of educating without school for the families surveyed in Colombia is 46.45% greater than the per capita expenditure on public schooling. Despite of the latter, if the annual public expenditure of the families is ordered according to the value of their expenses, it is found that the public expenditure per capita is higher than the average for 74.38% (the 90 families with the lowest expenditure) of the sample located in the lower range. It is also true that if one takes into account the average annual expenses of families that earn less than USD 800 (close to $ 1,000,000 adjusted by PPP 2016), the numbers are 25.54% lower than the public spending on official schooling per capita in Colombia. The national expenditure in public education per capita is greater than the absolute expense incurred by 42.15% (51) of the EWS families in the sample.

If only the 52 data for Bogotá DC are considered, the average annual cost of educating without a school is USD 5,796 ($ 7,246,154 adjusted for PPP 2016). This figure compared with the public education expenditure per capita (USD 2,220 - $ 2,780,000 adjusted by the 2016 PPP) is 61.70% higher. However, if the sample is again organized according to the expenses level, the average expenditure of 53.85% of the families (the 28 families with the lowest expenditure) is lower than

the public education expenditure per capita. It is also true that for 32.69% (17) this figure of public expenditure on education, in comparison, is higher.

Table 3. Spending on public education in Colombia

Public expenditure on primary, secondary and secondary schooling in Colombia (figures for 2015 adjusted by PPP)		
Nominal GDP 2015 (adjusted by PPP)		USD 668.185.302.886
Gasto público en educación como porcentaje del PIB		4,49%
Public expenditure on education as a percentage of GDP		72,13%
Public expenditure on education allocated to primary, secondary and secondary education		USD 21.644.795.711
Total number of students enrolled in the official sector		8.298.185
Public expenditure on education per student	Adjusted for PPP 2015	USD 2.608
	Adjusted by CPI at November 2017 prices	**USD 2.860**

Source: World Bank (2017) and National Administrative Department of Statistics, DANE (2017, 2016).

On the other hand, if the expenses of the families that chose to send their children to private schools is considered, the average annual cost of private schooling in Colombia is USD 1,443 (out of a total of 10,424 private schools). Which means that, in relation to the sample, the average annual cost of EWS is lower than private education for 39.67% (48) of the families in the sample. Furthermore, 76.47% (13) of EWS families and whose income is less than USD 800 per month, spend less than the average national expenditure on private schooling.

If we take into account the average cost of private schools in Bogotá DC (MEN, 2017), that is, USD 2,041 ($ 2,552,454 adjusted per PPP) and the sample data obtained from the school district, the figures are not very different from previous comparisons, between the public education expenditure per capita and the average expenditure of private schools in the capital.

Table 4. Spending on public schooling in Bogotá DC

Average administrative, operating and infrastructure spending during a year adjusted to 2017 prices *	
Average investment in Infrastructure of public schools between 2015 and 2017	USD 15.861.647
Annual investment in infrastructure taking into account a depreciation of 50 years	USD 317.233
Direct transfers to schools built between 2011 and 2014 - average	USD 5.988.693
Expenditure of the School meals program between 2012 and 2015 - average	USD 905.516
Average administrative, operating and infrastructure spending during a year adjusted to 2017 prices	USD 7.211.441
Average number of students attended in the Schools that received investment in infrastructure between 2011 and 2014	3.249
Annual public education expenditure per capita in primary, secondary and middle school	USD 2.220

Figures in dollars (adjusted by PPP 2016).
* In order to compare the figures, the data for each of the values per year was adjusted by the Consumer Price Index (CPI, from the year corresponding to the figure and December 2016).
Source: Bogota District Education Secretariat (2017), Planning Advisory Office, District Education Secretariat (2015, 2016). Database of the Electronic System of Public Contracting (SECOP). Report of registration of the District Education Secretariat to the Ministry of National Education, Planning advisory office 2015. Annual Management Report of the District Education Secretariat, Office of Programs and Projects 2015.

Given that there are more than 300 private schools (MEN, 2016), where families spend over $ 8,000 a year ($ 10,000,000 adjusted by PPP 2016), and incur in an increasingly pressing financial debt, we can say that the annual expenditure in private schools is 33.25% higher when compared with the average annual cost of EWS. The latter reveals that hypothetically, if a family with socioeconomic conditions above average living in major cities in the country decided to EWS their children could reduce the time allocated to getting monetary resources and increase time allocated to parenting, education and good living.

Final considerations

Results from this study highlight that it is necessary to continue our research in this topic. We must continue adding information to advance the characterization of Education without School in Colombia, and to extend this study to Latin America. The results, up to this point, allow us to infer that it is necessary to continue making specific studies on each of the multiple approaches that emerged from the use and interpretation of the methodological tool defined for this study. So then, a large number of research questions were opened, which motivate us to follow more in detail what happens around EWS. It is evident that further research in EWE will provide a great opportunity to contribute to the improvement of education and is a fundamental field of study can contribute to a better care of the needs of human beings, especially of children and adolescents.

On the other hand, the studies mentioned in Table 1 have been carried out in the United States with the objective of comparing the annual expenditure of EWS versus the investment in annual public schooling in the US. The conclusions, for example from Ray (2010), denote that the per capita budget used in public schooling, compared to the costs of EWS for an average American family, is 16 times higher. In consequence, Ray raised a question about the efficiency of spending on public schooling in that country. Taking into account this precedent, this investigation took as input these and other studies conducted in the United States to initiate a preliminary investigation on the costs of educating without school in Colombia. With the use of a survey as a methodological tool, a first approach to quantify the costs of EWS data was achieved in Colombia. The results of this survey showed that the average annual cost of EWS in Colombia is USD 5,340 (this adjusted by PPP 2016), taking into account the exchange rate in effect at the time of the study, this figure translates in USD 2,220, but it is emphasized that the exchange rate without adjustment for PPP is

less useful for international comparisons), a figure 8.3 times higher than the average costs for the United States in the four studies considered (USD 643).

The reasons for this difference originate in multiple factors, first, as mentioned above, the difference in quality and quantity of public services and goods available for EWS families and the discrepancy between the margins of appropriation of the public between Colombia and the US. Of course, the lower US spending on EWS versus the investment in public schooling per capita, also reflects in the high values of public investment in Education in that country, compared to the figures for public investment in education in Colombia.

Regarding the topic of public investment, it is necessary to highlight that Colombia is one of the most unequal countries in Latin America, in a region that is one of the most unequal in the world (in a sample of 64 countries, the World Bank estimated in 2014 to Colombia as the most unequal country in the world, at that time the index was 0.535 and during 2016 it was 0.517 according to calculations of the National Department of Statistics). This inequality is reflected in strong differences between the quality and the costs of public education vs. private schooling, and has a strong impact in the decision of sending or not the children to public schools; particularly for families with socioeconomic conditions above or well above the average (although it is common that families with high economic incomes send their children to schools abroad). That is, there is no equivalent comparison between a public school in the United States and a public school in Colombia, especially in rural areas or in working class neighborhoods in urban areas.

The latter reveals one of the reasons why the figure of costs of EWS of USD 5,340 is higher compared to the public expenditure on schooling which for the nation is USD 2,860 (adjusted by PPP 2016, considering the exchange rate in 2016), these numbers are less than half (USD 1,120).

In the case of the Bogota district it is USD 2,220 (adjusted by PPP 2016, directly considering the average exchange rate in 2016, the value is less than half, USD 910). It should be clarified that the district budget receives transfers from the nation's budget. Therefore in Colombia almost all families that have the monetary capacity, especially in urban areas, to choose between a free public school and a private one, will choose the private one. In other words, the type of families surveyed do not consider schooling in a public school as an alternative to EWS, rather EWS is seen as alternative to in private schools whose costs are particularly above average.

Likewise, it is evident within the sample that these numbers are, relatively high in comparison with public spending on schooling in Colombia or the cost of EWS in the United States. One reason for this could be the individualization of family groups. This is because, in general, there are no organizations or community arrangements or organized environments that that allows families to supplement or share their expenses or activities, which translates in most cases in a deep individualization of spending.

Even though the majority of families that educate without school in Colombia that responded to the survey have a monthly income above the average in Colombia, it should not be understood in any way that this is the general behavior of the majority of the EWS population. Thanks to field work and empirical observations, researchers are acquainted on details about families that obtain income below the average in Colombia and nevertheless have chosen EWS. Such is the case of neo-rural families, made up of people raised in the city who take the alternative of a life in the countryside and decide to educate their children without school. Consequently, as a result of their lifestyle away from consumerism, are families that generally live with an income well below the average. This phenomenon is not exclusive of family groups that live in rural environments, also

has also be seen in urban families that are looking for alternative lifestyles and an alternative education options.

It should be noted that, according to this study, the per capita cost of EWS is 1/3 less than the cost of schooling in a private school whose expenses are above the average. It has been observed that a large number of families decides to educate without a school because it is more affordable and provides them with levels of educational quality similar and in some cases higher to those found in private schools. These families do not consider that they are risking their children education; instead they are enjoying a more caring lifestyle with their family group. In some families with more than two children, some mothers and / or parents have renounced long hours of paid work, and instead spend more time raising and educating their daughters and sons. On the other hand, the numbers of 42.15% of EWS families in the survey that use an annual family expenditure lower than the national public expenditure per capita per year in schooling is not a minor fact. Furthermore, EWS opens the possibility for the public institutionality to make a different accompaniment to EWS families, thus avoiding the homogenizing and static character of the school. Beyond directly providing subsidies or bonuses to families that assume the task of educating their children without school, the official school system could accompany these families or, more specifically, contribute to generate learning environments that trespass school boundaries the schools.

Silva (2009), follows up on a process managed by Luis Fernando Ramírez at the end of the 90's, which shows how popular communities can more efficiently manage resources than the consulting or engineering firms usually contracted to implement development projects, thus generating wider community integration, that derives in a greater appropriation of public space compared to conventional budgetary executions. To suggest broader support from the public school system to

EWS, is to propose new ways of understanding education, but above all, new ways of understanding the collective, opening communication channels between the community to also find, understand and generate, new mechanisms that serve to educate and integrate the community.

EWS, then, can go beyond not only not going to school, but can create a deeper understanding that true education is generated in learning environments in which affection is conceived and circulated; characteristics that are not very common in a classroom. The current challenge for the public education system is to discover and understand how to develop these learning environments without going through the classrooms of a school. It is through to hiring fewer teachers or reduce the budget for public education, but to understand that education is much more than schooling. In other words, EWS questions schooling, not because it directly confronts it but because it offers other ways of educating people, which can be constituted as more efficient in the use of resources, providing better results.

Finally, the EWE, in general, is a type of education that advocates for the role of parenting within the educational processes. The emotional neglect and abandonment that children who attend both public and private institutions have to bear. Some fathers and mothers, in responding to their pressing monetary needs or need for public and professional recognition, have gradually abandoned their role as caretakers and companions of their children and in some cases have replaced them with vigilant behavior and punisher. EWE processes, then, highlight the relevance of the family and focus its attention on the importance of generating and circulating affection to enhance the learning processes.

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