

Empirical study in the region of Tlemcen.

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Abstract:

Although the majority of the authors agree on the consequences of the child labor, more and more, there is less of unanimity on the determinants of this phenomenon. On this subject, a certain number of studies in social sciences highlighted the existence of a close relationship between the household's poverty and child labor.

Basu and Van built a model of the economy of households which takes account explicitly of the importance of the households' standard living on the insertion of children in the socio-economic activities.

We will try in our paper to investigate on the determinants of the child labor in Tlemcen by the means of questionnaire addressed for 474 urban and rural households of 19 communes of the town. First of all, we study the axiom of luxury of Basu and Van, and focusing our research on the "Algerian aspects" of poverty and child labor.

Our study aims to be a characterization of the determinants of child labor by criteria supposed influence this phenomenon from the outset, such as poverty, gender of household head, education of children or by living environment between the Rural and urban using the Multiple Component Analysis (MCA).

Keywords: Child labor, Tlemcen, Algeria, Poverty, Determinants, MCA.

Introduction:

Les cahiers du MECAS..... N° 12/ Juin 2016

The importance of factors, other than income, in determining living conditions such as education, gender, water and characteristics inherent to society can contribute greatly to explaining the acuteness of poverty (**Benhabib, Ziani, Maliki, 2006**).

The propagation of the child labor in the world was done gradually, where the industrial revolution, colonialism, the successive wars, the under development situation, poverty, social exclusion...etc. are constituted as a favorable background for the growth of this phenomenon. In 2015, the most recent estimations of ILO evaluate to 168 million the number of children compelled to child labor forms, including 120 million aged between 5 and 14 years (**ILO, 2015**).

According to **Ballet, Bhukuth and Radja (2006)**: “ the debate on the child labor is mainly articulated around two principal assumptions: the assumption of the household’s poverty and the insufficiency of education of the parents”. These two assumptions meet besides partially in a dynamic way when the cost of the education system is pointed like a considerable explanatory element.

The majority of the international organizations like the World Bank and ILO consider poverty as the most important cause of the child labor, thus to concentrate their policies on the eradication of poverty. The child poverty and labor are in fact dependent (**Basu, 1998**). Many studies using micro data sets - for such as **Jensen & Nielsen (1997), Nielsen (1998), Patrinos and Psacharopoulos (1997), Grootaert (1998), and Canagarajah and Coulombe (1997) and Ray (1999)**- examine the effect of household poverty on child labor, though with mixed results.

Ray (1999) tests the luxury axiom of Basu and Van on Peru and Pakistan by examining the relationship between child labor hours and household poverty. He studies the likelihood of poor households (those earning an income below the poverty line) sending their children to work, and finds mixed evidence; a positive significant relationship between household poverty and child labor in the case of Pakistan, but not in the case of Peru.

Nielsen (1998) finds that in the case of Zambia, poverty and low income have a very small effect on the probability of child labor, and she concludes that poverty is not the main cause of child labor in Zambia. **Canagarajah and Coulombe (1997)** find also that household welfare has a weak effect on the probability of child labor in Ghana.

I. Luxury axiom and child labor determinants :

Les cahiers du MECAS..... N° 12/ Juin 2016

The various approaches of the literature about the child labor in the under developed countries are articulated around: (1) literature (economic) concentrating on the resources, (2) studies stressed on the importance of the structural factors and (3) the anthropological approach which explains the child work with cultural factors.

Children work to ensure the survival of their families and themselves. Recent studies have focused on the impact of poverty on child labor. **Basu and Van (1998)** assume that parents send their children to work only if they are under the poverty stricken; they take for granted parental altruism toward their child. Thus, in their model, poverty or the low adult wage are the main reasons for sending children to work– the luxury axiom.

This model is based on two essential assumptions, called axioms. First, the axiom of luxury which underlies that parents will make their children in work on the labor market if and only if their incomes without that of the children is relatively weak. Second, the axiom of substitution which implies the child labor and the adults work are substitutable from the point of view of the firm. Many economists such as (**Basu and Van 1998**) announce that the child labor is an economic decision made by parents in order to survive (**Grootaert and Kanbur 1995; Ranjan 1999**).

These assumptions allow Basu and Van to show that the economies in which children are potentially workers are characterized by the existence of multiple balances. In “Low equilibrium”, parents and children work for a low level of wages; in “high equilibrium”, the parents have a level of sufficiently high wages to avoid making their children work.

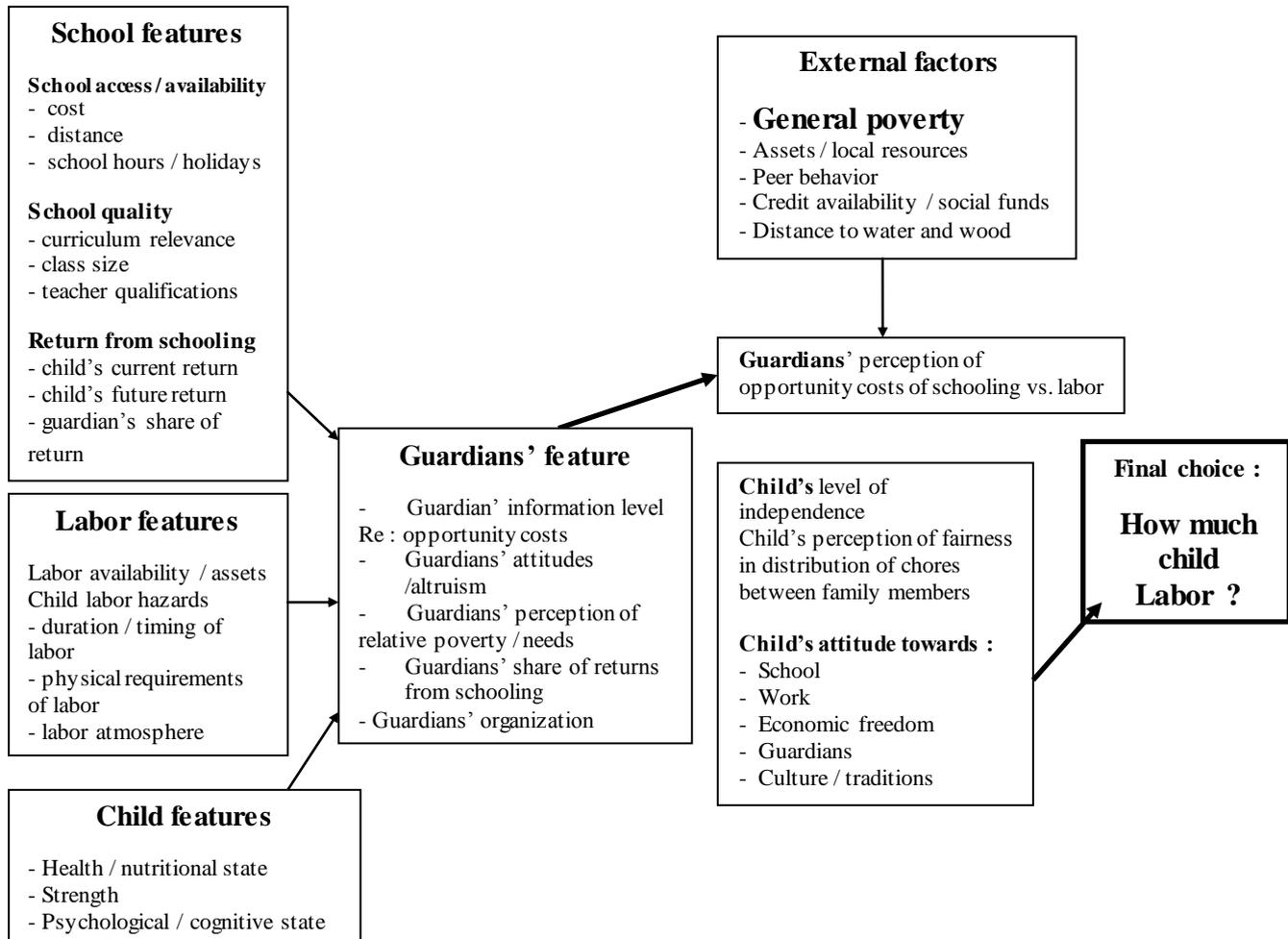
Other authors stress the importance of the family structure factors (such as the number of children of same parents) (**Edmonds & Pavcnik, 2006**) or of the structure of the labor market (**Emerson and Souza 2008; Duryea and Arends-Kuenning, 2003**).

Dumas (2005) supports this reflection in the both levels “Macro / Micro”. In the macro-economic level, the link between child labor and poverty seem obvious: the child labor was eradicated of the western countries during the twentieth century, whereas it is still practiced in an important way in the majority of the developing countries.

On the other hand, the existence of such relation between child labor and household poverty at the micro-economic level is empirically founded. She seeks to determine if there exist evidence links of this causal bond (namely that poverty generates the child labor).

Edmonds (2005) notes another research which estimates that the child labor can be a cause of poverty and it can contribute to perpetuate the intergenerational transmission of the depravity through its impact on the accumulation of human capital. He contributes to a second research orientation which focuses on the role of the low-income of the family in the decision to have a hard-working child.**Ersado (2002)** authenticates that the child labor is very widespread in the developing countries, but its causes are debatable. Poverty is regarded as the main reason. But, many theoretical and empirical analyzes show that other factors such as the lack of access to the credit, the bad quality of the school, and the opportunities of the labor market have an equal part in the decision to have worker children. Other authors showed that child labor can be an optimal choice when specific knowledge is more profitable than education (**Rosenzweig and Wolpin, 1985**); (**De Vreyer, Lambert and Magnac, 1999**) or when, for lack of coordination, labor market forces and companies are in a specific equilibrium characterized by a low level of education (**Dessy and Pallage, 2001**). The second current of thought put forward the impact of various constraints on the household's labor supply, in particular the children's one. Thus, some of the articles show that the imperfections on the adult labor market (**Bhalotra and Heady, 2003**), poverty (**Basu and Van, 1998**) or the imperfections of the market of the credit (**Jacoby and Skoufias, 1997; Ranjan, 1999; Parker and Skoufias, 2002; Baland and Robinson, 2000**) can support the emergence of the child work. The causes of the child labor cannot be the same ones according to the environment, but it is important to develop methods which make it possible to answer this question.

Figure 1 : Child labor determinants.



Source: Andvig, Jens Chr, Sudharshan Canagarajah & Anne Kielland, « **Issues in Child Labor in Africa** », Africa Region Human Development Working Paper Series, 26701, September 2001. P 09.

The figure presented above summarizes the external factors (level of general poverty and social basic needs - school characteristics – labor market) and those intrinsic for the household (children, parents and tutor's characteristics – engagement and perception of the children with respect to the school and work) that can determine and explain the decision making of children in work.

We obtain then, a costs / benefits analysis which supports a choice made, and taken as the most advantageous alternative for the household, enabling him to increase its incomes with the

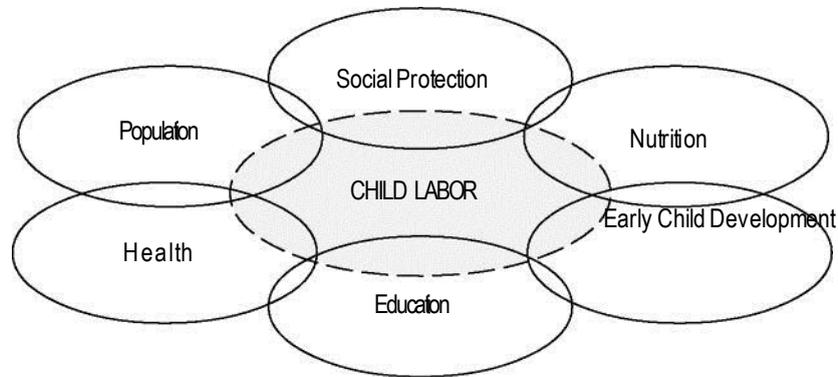
detriment of other aspects like schooling and its cost, the becoming to its children even their features of personality.

However, we can determine the target characteristics which contributes to the child labor according to (Grootaert & Patrinos, 2002):

- Child labor in correlation with poverty, but we need to identify the characteristics.
- Household's size, human capital and assets.
- Number of children in the household.
- Low levels of the human and physics capital in addition to the low levels of incomes.
- Required programs to provide appropriations to the poor households without guarantee.

We resume the different sectors relating to the child labor in the following scheme :

Figure 2 : Child labor borders many sectors.



Source: Andvig, Jens Chr, Sudharshan Canagarajah & Anne Kielland, « **Issues in Child Labor in Africa** », Africa Region Human Development Working Paper Series, 26701, September 2001. P 26.

II. Household survey on child labor determinants in the state of Tlemcen.

The child labor study in Algeria is specific to many regards, because of its appearance or its remarkable rising during these 25 last years, the child labor is the manifest expression of the failure of a development model. In fact, the phenomenon is only one of the multiple aspects of a whole reality which ended up being essential in the socio-economic and cultural life in the country: from now on, the informal economic sector is present everywhere (Sari, 1996).

Even if Algeria ratified all international conventions on the matter, and it engaged a strategy dedicated especially for the fight against the child labor, its width and its accelerated rhythm are revealed clearly. It is unable to put an end or decrease its volume very significantly. This

Les cahiers du MECAS..... N° 12/ Juin 2016

incapacity is in fact due to the difficult measurement of this complex phenomenon, which have rare investigations and studies which could make clear the components of this same complexity (**Hammouda et Boucherf, 2014**).

In 2014, the Algerian League of Defense of the Human Rights gave staggering figures: 3 million poor children, 500.000 out of schooling, more than 800.000 suffering from malnutrition, 250.000 without residence, 300.000 exploited in the informal economy, 25.000 beggars and 45.000 are without known identity (**LAADH, 2015**).

III.1 Principal survey's results :

In order to study the determinants of the child labor in the state of Tlemcen, we proceeded by an investigation by questionnaire near 474 households (April 2015, where the week of reference is of the 05/04 to the 11/04), into an initial number of 550 households (random sample not stratified), we obtain 86.18 % rate of answer.

The households' resident in urban areas are 291 (either 61.4 %) and those resident in rural areas represent 183 households (or 38.6 %). (See the distribution by commune in appendix A1).

The investigation reveals also that 83.1 % of the heads of household are Men, 9.7 % of the heads of household (Men + Women) do not occupy any employment, 33.8 % live with an income lower than SNMG (Minimum National Guaranteed Wage: 18000 DA), 20.7 % of the heads of household (Men) do not have any educational level, against 7 % of the Women, 67.5 % were obliged to give up the school because of poverty, 21.3 % are estimated to be very poor and 30 % are estimated to be poor.

Moreover, the investigation gave a rate of 63.9 % of households living in lower part of the monetary poverty line (the criterion selected is of 2 \$/day/anybody).

Concerning the chapter of "Child Labor", on the 474 households, we recorded that 374 households (78.9 %) with hard-working children (215 Girls and 343 Boys), which gives a total of 558 children. 12.2 % of these children accomplished of the mainly occasional tasks, 13.9 % of works are temporary and 32.5 % of children are occupied in permanent work.

The whole of the activities accomplished by these hard-working children are distributed as follows :

- 4.9 % in training of trades, 3.4 % in guarding of car park, 14.6 % in the sector of the building, 17.9 % in agriculture, 17.7 % of the children are employed in the wholesale markets of vegetables and fruits, 10.5 % in the informal commerce, 19.4 % in the activities of craft industry especially dedicated to the young girls, 12.7 % in the services of restoration, and finally 12.2 % of the children are employed as salesmen in stores.

Les cahiers du MECAS..... N° 12/ Juin 2016

We announce the absence of the domestic work in our sample, where no household had a family company or arable lands justifying the reserve of the children to complete work for the family company, or to help in the domestic works.

With regard to the statute of the children resulting from the results of our investigation, we mention that 324 households (68.4 %) have provided education and hard-working for the children at the same time, 49 households (10.3 %) with only provided education for children, the same rate (10.3 %) for the hard-working children only, finally 6 households (1.3 %) for the children who neither are provided education for nor workers.

For the school attending, on the 374 households having hard-working children, we had 48 households (12.83 %) with a daily attending school, 82 households with a rate of 22% with a rare attending, and finally 244 households (65.24 %) have children who go to the school with some absences.

For the decision making of child labor, our sample gives a rate of 52.3 % on the number of the households having hard-working children where the decision was taken by the parents because of the household's poverty state, 37 % for a deliberate choice on behalf of the children themselves, and the 10.7 % represent a rate of households where a decision was taken jointly by the parents and the concerned children.

Moreover, poverty is the main cause of the children setting in work of 56 % of the households having hard-working children (374). For children of 15.2 % of these households, working is due to a will of their share to increase the incomes of households, and 19.25 % made it to learn a trade.

Concerning the total of the work hours carried out by the whole of the hard-working children of our sample, we added up 10602 work hours, varied 8 hours up to 60 hours by households and week (this is justified by the number of hard-working children by households), with 19.5 % of the households justifying 20 work hours per week.

III.2 Results interpretation with the MCA method (Multiple Component Analysis) :

The following part of our paper consists in reducing the variables which represent the elements of the child work in explanatory factors through the **Multiple Component Analysis (MCA)** in order to determine the interactions between these last, sight that the majority of our variables of study are qualitative nominal.

This method also makes it possible to define distinct groups by taking in account the relations between the different variables and by identifying those which explain more the various phenomena observed during the preceding analyzes.

Les cahiers du MECAS..... N° 12/ Juin 2016

With this intention, we retained the following criteria of studies:

- Household's Zone of residence (Rural / Urbain).
- Gender of the household's head.
- Educational level of the household's head (Men / Woman).
- Number of children by household.
- Overall of the incomes of households.
- Approximate distribution of the family budget devoted to education.
- School position opposite the child labor: Only provided education for / hard-working, only / provided education for and hard-working at the same time and neither provided education for workers nor.
- Working children setting during the week of reference.
- Main reason for which these children work.
- Decision-making of setting in child labor (parental / deliberated choice / jointly decided).
- Durability and intensity of child labor: Permanent / Temporary / Occasional / mainly occasional.

The results of the MCA method used with software SPSS are presented as follows:

- According to the **table n° 01**: summary of the models, the launching of the multiple factorial analysis on SPSS gave two factors which explain (87.4 %) of all the contained information's in the whole of the variables used in this analysis. The first factor explains 55 % of information and the second explains as 32.4 %.

Table n° 01 : Summary of the models.

Récapitulatif des modèles			
Dimension	Alpha de Cronbach	Variance expliquée	
		Total (valeur propre)	Inertie
1	,926	6,607	,551
2	,810	3,885	,324
Total		10,492	,874
Moyenne	a	5,246	,437

La valeur Alpha de Cronbach moyenne est basée sur la valeur propre moyenne.

Source: Realized from the investigation data.

- According to **table n° 02**, the first factorial axis is a linear combination of six variables. In fact, the share of education in the monthly budget, the school position opposite the child work, the probability of having a hard-working child during the week of reference are the main

Les cahiers du MECAS..... N° 12/ Juin 2016

reasons for whom these children work, the decision or the choice of making children in work and finally the statute opposite the durability of work.

This first dimension (**D1**) can be modeled as follows:

$$\mathbf{D1} = 0.52 \mathbf{X1} + 0.89 \mathbf{X2} + 0.87 \mathbf{X3} + 0.95 \mathbf{X4} + 0.94 \mathbf{X5} + 0.95 \mathbf{X6}.$$

We have: **X 1** = Approximate distribution of the family budget devoted to education

X 2 = School position opposite the child labor

X 3 = Working children setting during the week of reference

X 4 = Main reason for which these children work

X 5 = Decision-making of setting in child labor

X 6 = Durability and intensity of child labor.

The second factorial axis is a linear combination of three variables: Gender of the household's head, the educational level of the household's head (Man / Women).

This second dimension (**D2**) can be modeled as follows:

$$\mathbf{D2} = 0.71 \mathbf{X1} + 0.78 \mathbf{X2} + 0.71 \mathbf{X3}$$

Where: **X1** = Gender of the household's head

X2 = Educational level of the household's head (Men)

X3 = Educational level of the household's head (Women).

Table n° 02 : Discrimination

measures.

Discrimination measures

	Dimension		Moyenne
	1	2	
Zone of residence	,003	,002	,002
Gender of Household's head	,245	,710	,477
Educational level of the household's head (Men)	,482	,781	,631
Educational level of the household's head (Women).	,246	,717	,481
Number of children by household	,025	,013	,019
Global monthly incomes (Formels and Informels) by household	,457	,105	,281
Approximate distribution of the family budget devoted to education	,525	,326	,426
School position opposite the child labor	,892	,315	,603
Working children setting during the week of reference	,877	,086	,481
Main reason for which these children work	,958	,374	,666
Decision-making of setting in child labor (parental / deliberated choice / jointly decided)	,942	,102	,522
Durability and intensity of work for the children: Permanent / Temporary / Occasional / mainly occasional.	,955	,354	,655
Total actif	6,607	3,885	5,246

Source: Realized from the investigation data.

According to the **table n° 3**, we note that the main reason of the child labor is fairly correlated with the educational level of the man household's head (50 %), with the overall incomes of the household (53 %), and with Approximate distribution of the family budget devoted to education (59 %).

In fact, according to the universal assumption witch stipulate that poverty would be the most important determinant of child labor, this latest is fairly validated in our sample, this is confirmed

Les cahiers du MECAS..... N° 12/ Juin 2016

by the rate of correlation (53 %) between the total of the incomes of households and the primary reason of child labor setting.

While in the against part, the main reasons of the child labor:

- Have a strong correlation (90.7 %) with the school position versus the work of these children (only provided education for / provided education for and hard-working... etc.);
- Is very strongly correlated with the choice of child labor setting (99 %);
- Is correlated robustly (98.8 %) with the durability and the intensity of the work carried out by these children.

For these results, we conclude that in Tlemcen, the most discriminating determinants of child labor and are:

- Position (statute) opposite the school situation.
- Choice and the decision making of child labor setting.
- Durability and intensity of the work carried out by the children.

However, the variables supposed beforehand to influence on the decision making of child labor setting, like the zone of residence, the household's head gender or the number of children by household proved far from significant, which can be explained by external factors of a cultural and social nature.

Moreover, the decision making of child labor setting (unilaterally or bilaterally made with parents) depends largely on the position opposite to the school for these children (91 %), and on the durability and the intensity of this work with a rate of correlation about of 99.3 %.

As a precise regard to the intensity and durability of work, it is correlated to a total value of 54 % and 50 % respectively with the educational level of the household's head (Men), and the overall incomes of the household. On the other hand, it is very strongly correlated with the school position opposite the child work (90.6 %).

Table n° 03 : Correlations of the transformed variables

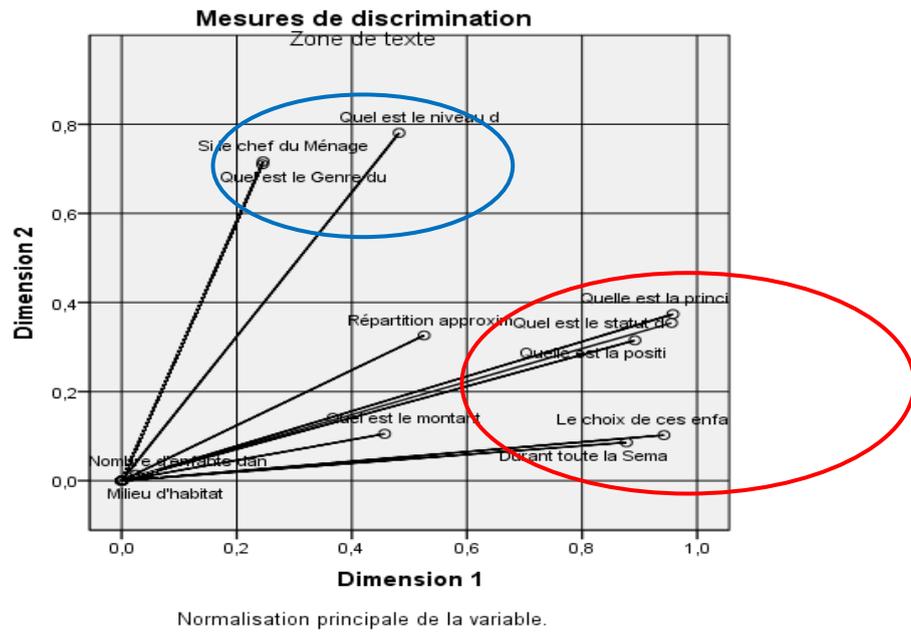
Dimension: 1												
	Zone of residence	Gender of Household's head	Educational level of the household's head (Men)	Educational level of the household's head (Women)	Number of children by household	Overall of the incomes of households	Approximate distribution of the family budget devoted to education	School position opposite the child labor	Working children setting during the week of reference	Main reason for which these children work.	Decision-making of setting in child labor	Durability and intensity of child labor
Zone of residence	1,000	-,007	-,021	-,002	,022	,041	,034	,050	,047	,043	,043	,041
Gender of Household's head	-,007	1,000	,713	,970	,071	,287	,212	,293	,192	,279	,238	,278
Educational level of the household's head (Men)	-,021	,713	1,000	,671	,126	,448	,362	,485	,457	,503	,479	,507
Educational level of the household's head (Women)	-,002	,970	,671	1,000	,076	,270	,216	,301	,200	,288	,248	,289
Number of children by household	,022	,071	,126	,076	1,000	,004	,036	,073	,145	,129	,136	,159
Overall of the incomes of households	,041	,287	,448	,270	,004	1,000	,673	,528	,516	,539	,534	,524
Approximate distribution of the family budget devoted to education.	,034	,212	,362	,216	,036	,673	1,000	,579	,606	,595	,589	,586
School position opposite the child labor	,050	,293	,485	,301	,073	,528	,579	1,000	,878	,907	,909	,906
Working children setting during the week of reference	,047	,192	,457	,200	,145	,516	,606	,878	1,000	,932	,943	,935
Main reason for which these children work.	,043	,279	,503	,288	,129	,539	,595	,907	,932	1,000	,992	,988
Decision-making of setting in child labor	,043	,238	,479	,248	,136	,534	,589	,909	,943	,992	1,000	,993
Durability & intensity of child labor	,041	,278	,507	,289	,159	,524	,586	,906	,935	,988	,993	1,000
Dimension	1	2	3	4	5	6	7	8	9	10	11	12
Valeur propre	6,219	2,038	1,043	,997	,803	,358	,288	,129	,083	,027	,011	,005

a. Les valeurs manquantes ont été imputées avec le mode de la variable quantifiée.

Les cahiers du MECAS..... N° 12/ Juin 2016

In the figure n°3, we discover clearly the variables grouping and their tendencies. In fact, the variables circled with the color red are more near to the dimension one, there are effectively the most constitutive variables for the equation of the first factorial axis D1. The variables circled with bleu are near to the second dimension and there are the constitutive variables form the equation of the second factorial axis.

Figure n° 03 : Discrimination mesures



Source: Realized from the investigation data.

Conclusion :

As a conclusion, our study allows us to recommend for the points below:

- Make a questioner for the “child” following the ILO norms will be an important key to understand the child labor in Tlemcen.
- Draw a plan between the child labor and the out-of-school children using statistics of education focusing the study in the children out-of-school in the age of 5-16 years.
- Include sociologist in the future studies to surround the child labor sociology with comparison between decisions, social statistics and its socio-economic effects.

Les cahiers du MECAS..... N° 12/ Juin 2016

- Plead to take care about the population in the age of 5-16 years in fields such as: socio-cultural infrastructure, education and sports. In addition, especially awareness campaigns about the bad effects of the child labor, child welfare and child's psycho-mental development

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Annexe A1: Sample questionnaire repartition by commune and by zone of residence.

Tableau croisé Commune de résidence * Milieu d'habitat

Effectif		Milieu d'habitat		Total
		PU	TR	
Commune de résidence	AIN YOUCEF	12	0	12
	AIN FEZZA	0	20	20
	AIN GHORABA	0	12	12
	AMIEUR	9	9	18
	BAB EL ASSA	0	15	15
	BENI SNOUS	0	18	18
	CHETOUANE	56	0	56
	EL Gor	0	16	16
	EL OUED LAKHDAR	0	30	30
	EL ARICHA	0	12	12
	HENNAYA	30	0	30
	MAGHNIA	33	0	33
	MANSOURAH	39	0	39
	OULED RIAH	0	12	12
	SEBAA CHIOUKH	0	12	12
	SEBDOU	26	0	26
	TERNI BENI HEDIEL	0	9	9
	TLEMCEN	86	0	86
ZENATA	0	18	18	
Total	291	183	474	

PU (Urbain predominance) & TR (Total Rural), RGPH 2008, P 158.