



Original Research Article

Does family structure explain why children's school dropout of in the Cameroonian context?

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This paper aims to analyse the effect of family structure on children's school dropout in the Cameroonian context. To do so, we used data from the fourth Cameroonian Household Survey (ECAM 4) in 2014. The logistic model regression was using to analyze the relationship between family structure and children's dropout. The results suggest that that family structure increase the probability of child dropout to school. In particular, *ceteris paribus*, the probability of dropping out of school is higher among working children. Therefore, we suggest that authorities and parents should continue efforts to encourage monogamous marriages, discourage divorce and combat child labour.

Keywords: Family structure, school dropout, ECAM 4

JEL Classification: D10, I24, C81

INTRODUCTION

The right to education for all remains a fundamental, inescapable and unsubstituted right (Noumba, 2008). Just 16 years ago, talking about school dropouts was a marginal issue, but today, this marginal issue has become a central, primordial, necessary, responsible and sustainable issue. A sustainable education for all is an education that is able not only to deal with its problems, but also and above all to prevent them. Many education systems in the world today are suffering from violent chronic ailments, which for the most part are not treated at their roots but sometimes at their leaves (Unicef, 2018). Among these chronic ills suffered by education systems is that of school dropout.

In Cameroon, for example, it is worrying to note that according to statistics presented by UNICEF report of April 2018) 17% of pupils in the first year of primary school, 20% of pupils in the fifth year of primary school, 18.7% of pupils at the end of the first secondary school, and 14.9% of pupils in the second secondary school are dropouts (Unicef, 2018). This makes school dropout since 2002 to date, the greatest cause of waste of resources allocated to the sector.

Dropping out of school thus leads to a loss of internal efficiency of the education system of about 15% of the resources invested (Unicef, 2018). The question that might be on our minds is that of the effectiveness of the various policies, programs and projects put in place to curb the dropout phenomenon. The truth is that many efforts from the government and even non-governmental organizations are deployed on the ground, trying to achieve the objective of education for all. In the midst of multiple tensions on both the socio-economic and political levels, it would be wise to provide convincing answers to the dropout phenomenon, whose impact is visible on the different strata of the country's socio-economic and political life.

According to data from the UNESCO Institute for Statistics (UIS), in 2016 around 263 million children, adolescents and young people around the world were out of school, i.e. one in five of primary school age. In primary school, the rate of out-of-school children has hardly changed over the past ten years: 9% of children of primary school age (around 6 to 11 years old), i.e. 63 million, are not educated. In addition, 61

million adolescents of lower secondary school age (around 12 to 14 years old) and 139 million young people in upper secondary school – one in three – are not enrolled in school 5. Children from poor families, rural areas or ethnic minorities, children with disabilities and those who have to work to support their families face the greatest risk of being deprived of their right to education.

In Cameroon, the phenomena of repetition and dropout constitute a real concern, aggravating the situation of the internal efficiency of the education system and constituting the main cause of school exclusion. This is all the more worrying as it concerns large proportions of the cycle as illustrated by the following data: in 2015 the average repetition rate was 12% for primary education; 7.7% for secondary 1 and 10.6% for secondary 2. As for the average dropout rate, it was 11.9% for primary; 10.6% for secondary 1 and 16% for secondary 2 (according to data from MINEDUB, ECAM 4, MICS 5 and UNPD).

Faced with the above, several questions emerge, but the most relevant question is that relating to the factors that influence school dropout. This study seeks to know what is the effect of family structure on school dropout in Cameroon? The propensity to drop out of school is higher in which type of family structure? The main objective of the study is to determine the effect of family structure on school dropout in Cameroon.

The remainder of the paper is structured as follows: section 2 presents a literature review, a presentation of methodology in section 3 is followed by the discussion of the results (section 4) and section 5 concludes.

Literature review

Explanatory theories of school drop-out

Three main social science disciplines have been interested in the issue of school drop-out: sociology, economics and psychology. An abundant national and international literature provides a comprehensive list of *factors, determinants and reasons for dropping out of school*. Some of this literature emphasises the voluntary, rational nature of this choice (Manski, 1989). Another, on the contrary, puts forward the hypothesis of rejection of the institution (Tinto, 1993).

Sociological theories of school drop-out

There are many works in the sociology of education (Bourdieu and Passeron, 1964; Baudelot and Establet, 1971), which do not always result from an explicit theoretical approach that would explain the results obtained in the numerous surveys on the issue of school drop-out. Bourdieu and Passeron (1964) are of the opinion that the functionalist thinking of the 1950s advocates the merits of the school system. According to this thinking, the education system is a meritocratic system where young people are all equal. It allows for the selection of the best

students and also serves as an engine to move them through the school system. This does not seem to be true for Bourdieu and Passeron (1964). Using statistical data from France, they show that school is not meritocratic, as had been thought. According to their conception, school serves to classify young people in a position. It even serves to reproduce already existing social positions and to perpetuate the advantage of the upper class over the other classes. The school advocates a certain culture and the cultural capital of the upper class is the one that most closely resembles the culture of the school: the upper class has a cultural capital consisting of knowledge, know-how and know-how. Thus, as Bourdieu and Passeron point out, it is not necessarily the best students who are chosen to advance in the school system, but those whose cultural capital is closest to the schools' criteria. In such a system of discrimination, it is necessarily the young people from the upper classes who have the advantage.

However, this social reproduction is not mechanical as it is based on the notion of habit. According to them, the habitus is a set of acquired and socially constituted dispositions, which allow the reproduction of the social position. In reality, the habitus is an unconscious achievement of the agents. Thus, the student, with the help of the habitus, makes his own classification within the positions found in the school system, in an unconscious way. He himself chooses to reproduce his social position thanks to the achievements of the habitus, achievements which necessarily differ between the privileged and less privileged classes. The work of Boudon (1979) breaks away from this Marxist current and examines the question of inequality of opportunity in education and the question of social mobility. According to him, pupils are in a decision-making process regarding their education. They make a trade-off between the risks, costs, benefits and usefulness of advancing in the school system; a trade-off which is of course a function of their social position. Thus, the evaluation of the risks, costs, benefits and usefulness of education is different for pupils from different social positions.

Bronfenbrenner's (1979) model is called ecological because it considers human development as a function of the progressive and reciprocal interaction between the person and his/her environment. The author defines the ecological environment as a set of interrelated contexts or systems that affect the development of the person. Based on an ecological approach, Bronfenbrenner's (1979) model of integrated influence can be described topographically as a set of concentric circles of interactions and reciprocal influences between individuals and the different systems, as well as between the systems themselves. There are four such structures in which the developing individual (also called the endosystem) operates: the microsystem, the exo-system, the meso-system, and the macro-system. Published in 1991 in the journal of the American Sociological Association, the work of Astone and McLanahan (1991) focuses on family structure, parental practices and high school completion.

The work of Trottier (1987) will put an end to the finalist theories of reproduction and social mobility. Trottier (1987), after a critique of reproduction theories, proposes a theory of resistance in sociology of education. This theory states that students' perceptions of their daily experience can be taken into account by taking into account the historical aspect of the school system as well as its internal struggles towards progress. Cummings and Davies (1994), operationalising this concept through Karp's (1988) data, finds that there is a link between dropping out and the socio-economic status of the family of origin, and between dropping out and gender.

In conclusion, he notes that class reproduction in education occurs partly through resistance. He notes, however, that the relationships between social class, gender and some expressions of revolt suggest that researchers need to re-examine the nature of resistance observed in students. He notes that resistance is not an antecedent cause of dropping out of school as has been suggested in other research; rather, he sees resistance as a reaction to blocked educational opportunities, the latter occurring between academic difficulties and dropping out.

Economic theories of school drop-out

The work of Becker, Schultz and Mincer in the 1960s serves as a reference for current theoretical models. For them, educational choices are investments in human capital. Indeed, Becker addresses the question of how individuals determine their optimal investment in education. He organises the factors explaining investment in human capital into two subsets: those that act on the marginal rate of return, hence on the demand curve, and those that act on the interest rate, hence on the supply curve. Investment is necessarily spread over time. Moreover, time is one of the main factors in the production of human capital. Learning inevitably requires time, and this time has an opportunity cost which rises as the individual acquires human capital, since he is then likely to obtain a higher and higher wage on the labour market. The more human capital one acquires, the less profitable it is to continue investing: the demand curve is therefore decreasing.

Empirical approach to school drop-out

Economic factors and children's drop-out

Three general characteristics have been identified in the empirical literature to describe the economic causes of children dropping out of school. These characteristics include the household's standard of living, the economic status of the parents and of the children themselves.

The household's standard of living

In the opinion of many authors, the economic level of the household also plays an important role in the enrolment and retention of children in school. Marcoux (1995) and

Pilon (1996) defend this position by showing that the various economic crises that African countries have undergone have led to profound upheavals in their school systems, both in terms of supply and demand.

In poor households, the level of income forces children to contribute through their work to domestic tasks to the detriment of schooling. John (1990) refer to the early entry of children into the world of work as a necessity for survival. They make a financial contribution that is not very important in volume but far from negligible in proportion to household expenditure. Thus, Marcoux (1995), Pilon (1996) and Wakam (2002) have shown the positive effect of the household standard of living on children's schooling. For Noumba (2008), poverty generates "a low capacity of the population to adequately satisfy their basic needs, including education". He goes on to say that "there is a close relationship between the standard of living of the population and the conditions of access to education", and that "poverty accentuates gender disparities in education and favours early child labour, as well as the early marriage of girls".

In Africa, the situation worsened at the household level during the 1980s with the implementation of Structural Adjustment Programmes in several African countries. Many households found themselves unable to provide schooling for their children in the face of rising schooling costs, thereby worsening the already poor schooling situation. Indeed, a study carried out in rural Cameroon shows that in a crisis situation, households either cut back on education spending or take their children out of school. Some parents react to a deterioration in their economic living conditions by not sending their children to school and withdrawing them from school. For example, in the DRC, the inability of Congolese households to pay school fees is by far the main reason why children generally do not attend school. Curiously, it is children living in urban areas who are the most affected by this problem, probably because school attendance is more affordable in the city than in rural areas, where the lack of schools and their distance from the children's homes are the most important factors (Lututala et al., 1996). This inability is in turn reflected in late access to school. The Mics2 survey (2001) shows that 31% of children aged 6-14 who should be in school have never attended. Furthermore, 14% of primary school pupils are over the legal age for primary education, 12% of whom are girls and 16% boys.

Parents' economic activity

The main source of household income is provided by both parents, if not by the head of the household. Some studies have shown that children's schooling depends on the economic activity of the head of the household, and this source of income is sometimes estimated through the parents' socio-professional level. Indeed, children belonging to households where the activity of the head of the household makes it difficult to integrate other members of the household (i.e. employees of modern sector

companies or public administration) would attend school in a larger proportion. While children from households where the head is a self-employed person often working in the informal sector would be more likely to work and therefore not attend school. Marcoux (1994) has shown that this can be explained by the fact that the head of a salaried household can hardly count on the participation of a child in his economic activity in order to increase his output, or his father's income. This would not be the case for the self-employed worker who can hope for an increase in monetary gain by integrating a child into the production chain that he controls, and they find that children whose fathers have a high professional classification have on average a higher level of education than those whose fathers have a low socio-professional level. In urban Mali, children from households headed by modern sector employees are more likely to attend school than those from households where the head is self-employed, regardless of the child's sex (Marcoux, 1995). Pilon (1996), in the case of Burkina Faso, pointed out that being a child of a household living on food crops is clearly the most unfavourable situation with regard to schooling, with 56.7% of children attending school, compared to at least 75% for all other categories of activity. Jacoby (1994) consider that the income and wealth of parents play an important role both in the enrolment and progression of children. However, Capriora et al (2017) believes that non-wage income has the same impact on enrolment and academic performance of boys and girls while Handa (1996) believes that income has a greater impact on enrolment and academic performance of girls only.

Child labour

Child labour can take many forms or take place in many different places. Households are therefore looking for several alternatives to sending children to school. One of these alternatives is to solicit the contributions of children to the economic life of the household through their increasing involvement in the labour market. Among the most commonly reported forms of child labour are domestic work, work in industry and crafts, street work or trades, debt bondage, sexual exploitation, child soldiers, etc. (Unicef, 2018; Brisset 2007). Often in competition with school, it "may be required for domestic, productive and/or commercial purposes, according to an intensity and modalities that also vary according to the demographic composition of households at a given time and that involve children differently according to their gender and family status" (CEPED Chronicle N°42, 2001:3). Problems of school wastage among children are commonplace in Africa, and generally have various causes, but are almost always linked to the opportunities available to the household.

However, according to Ravallion and Wodon (2000), this choice made by households cannot be a long-term solution, because children who work instead of going to school reduce their chances of escaping from poverty. Indeed, the cost of sending a child to school includes direct costs such

as the cost of supplies and school fees, as well as indirect costs such as opportunity costs: what the household loses by sending the child to school instead of putting him or her into the labour market. But in return, this investment in the child's 'human capital' guarantees high future income and greater productivity. Thus, the household's decision will depend heavily on the choice it makes between future income (if the child is enrolled in school) and present income (if the child is put to work).

School factors and children's drop-out

Family and school have different roles. While the family transmits to its children its genetic, social and cultural heritage, i.e. norms and values, the school transmits scientific, technical or literary skills and assesses the mastery of knowledge and know-how. It strongly emphasises the differences in abilities that depend on the psychological and social characteristics of the students. The main factors are: Quality of the school environment and classroom climate.

Socio-cultural factors and children's drop-out

Children from families far removed from the school model sometimes have great difficulty adapting to it. They are ill-prepared to undertake schooling, often because they have lacked sensory or intellectual stimulation in their environment.

- Place of residence

Region of residence and environment of residence is also one of the variables for which there are significant differentials (Akoto and Tabutin, 1987). In many African countries, regions are administrative units with differences in climate, economic activities, culture, etc. These differences also lead to differences in educational attainment. These differences also lead to differences in educational attainment. Similarly, in Africa, urban and rural areas are totally different in terms of lifestyles and types of activity. The effects of modernisation are more pronounced in urban areas than in rural areas, where socio-cultural constraints continue to have a considerable influence on people's behaviour, particularly that of parents with regard to the schooling of their children. The differences between the components of the two types of environment also concern the spatial distribution of available social infrastructures. Several studies have shown the relationship between region, residence, school supply and schooling. There is indeed a greater concentration of school infrastructure in the largest cities (especially the capitals) and the regions that house them compared to rural areas.

As a result, the proportion of children attending is higher in the former than in the latter. Indeed, the proximity of educational facilities, but also their equipment, their financial accessibility, the qualifications of the teaching staff, etc. are factors that can influence the propensity of

families or parents to send their children to school. Thus, Lange (1991) notes that, although school enrolment depends on the willingness of households to send their children to school, it is no less clear that it also and above all depends on the capacity of the state to provide schools and teachers. Thus, Yaro (1995) notes strong disparities in Burkina Faso between the thirty administrative entities that make up the country. While the provinces of Tapoa and Séno have gross enrolment rates of 10-15%, others such as Kadiogo, including the capital, have enrolment rates of over 80%.

Similarly, Kobiané (2003) showed that schooling was clearly acceptable in the city of Ouagadougou, so that discrimination between girls and boys is less if family status is not taken into account. This state of affairs is most often explained by the variation in the standard of living of households between rural and urban areas, the availability and unequal distribution of schooling to the detriment of rural areas and the variation in the weight of cultural norms. A study by Wakam (2002) in Cameroon showed that urban children were much more likely to attend school than rural children and that inequalities between girls and boys were greater in the countryside than in the city. It is important to remember here that it is in the countryside that cultural constraints are felt the most. These urban-rural differences may also result from differences in supply. In other words, the school imbalance between regions or provinces on the one hand, and between urban and rural areas on the other, can be explained in part by the unequal distribution of school infrastructure throughout the country. In a comparative study between the different regions of Benin, Guingnido (2003) conclude that, generally speaking, at equivalent levels of education, the place of residence determines the behaviour of parents with regard to the schooling of their children and their retention.

Religion

In some countries, religion can be a stumbling block to children's schooling, as the dilemma in many sub-Saharan African countries is the conflict between *"tradition and modernity"* (Kobiané, 2002). Generally, the Christian religion is associated with Western values and Islam with Arab-Muslim values. The existence of these schools with different organisation and functioning certainly offers parents the possibility to make a choice.

In this context, as Rwehera (1999) points out, *"the conflict between tradition and modernity is directly transposed to the existence of the Koranic school"*. In rural Niger, the preference for the Koranic school constitutes nearly 20% of the reasons for the non-enrolment of children aged 7 to 9 in the classical school (Rwehera, 1999). In the department of Baya in Mali, where the influence of Islam, although relatively recent, is growing, families are increasingly turning away from formal schools in favour of Koranic schools (Pilon, 1996).

These authors state that if *"the infatuation for the Koranic and Franco-Arabic school can be considered, in certain cases,*

as a strategy of substitution or avoidance of the formal school, taking into account the limits and constraints that it presents (cost of studies, conditions of schooling, etc.), the explanation of this orientation of the demand for education would be found more in Islam, such as it is thought of and practised in the Muslim education itself". For Robertson and Berge (1986), Islam should not be held solely responsible for low female enrolment rates in Africa, the case of Sudan is cited here as an illustration where the Muslim North has significantly higher enrolment rates than the Christianised and traditional South. While it is clear that the lowest enrolment rates are found in the Islamic region and community of sub-Saharan Africa, there is no evidence that those who refuse to send their children to school draw their arguments from Islam.

Socio-demographic factors and children's drop-out

The explanation of school drop-out by socio-demographic characteristics generally focuses on variables such as the parents' level of education, the child's sex, age, household size, and the number of children who have reached high school.

Gender of head of household

The literature on the gender of the head of household often points to a difference in children's schooling behaviour between female heads of household and their male counterparts. It has been shown that children are more likely to be in school and to stay in school for a long time when they belong to female-headed households.

In African countries, studies have identified relationships between the gender of the head of household and children's schooling, as well as a relationship with the duration of children's schooling. It should be noted from the outset that the gender of the head of household is associated with children's school performance (Odi, 1993; Mbaindoh, 1996; Clevenot and Pilon, 1996), and it emerges that female heads of household send their dependent children to school better than male heads of household. This situation can be explained by the fact, according to Lloyt and Blanc (1995), that women heads of household invest more than men in their children, whether in terms of money, time or emotional support. With regard to female heads of households, it is expected that children's school performance will be lower in a female-headed household than in a male-headed household. In contrast, in sub-Saharan Africa, female heads of household are better at educating and supervising children than male heads of household.

Thus Pilon showed that in Togo, whatever the sex of the child, the differences in schooling rates are 13 points in favour of those living in the female-headed household and respectively 12 points for boys and 16 points for girls. The same trend was observed by Wakam (2002) for the Cameroonian case. One of the reasons put forward is that female heads of household are said to ensure a better

allocation of resources within the household, as they generally allocate a larger share of the family budget to the care and support of children than do male heads of household.

The sex of the child

In Africa in general, the girl remains "*a labour force as much as a matrimonial asset, indispensable for the family, the lineage, and even the extended social group, whose enrolment in school may call into question the domestic organisation, pose problems for the care of the newborn child, but also disrupt matrimonial exchanges*". This marginalisation of girls in terms of schooling is based on the process of socialisation and family education, which places more emphasis on dependence than on the success of girls. Consequently, in traditional African societies, the girl does not need formal education to fulfil her role as a mother and wife (Mungah, 1993).

Individual characteristics of children affect their schooling. Studies have shown that in Africa, there is a difference in schooling between girls and boys. Studies on children's school performance show that girls do better in school than their male peers, while work by Marcoux (1994) and Wakam (2002) reveals that girls are under-enrolled due to their participation in domestic work and activities than boys. In Mali, for example, Marcoux shows that 97% of girls participate in domestic work compared to 25% of boys. In the Caribbean, it has been found that girls, compared to boys, have a more stable and longer schooling, drop out more rarely and achieve higher levels of functional education at the end of their schooling than boys (UNESCO, 2004). In industrialised countries, and more specifically in the OECD countries, it has also been noted that 15-year-old girls outperform boys of the same age in literary subjects. In science, on the other hand, boys outperformed girls. However, more recent studies show an improvement in female competence in subjects such as mathematics and science, due to school initiatives and the general evolution of the role of women in society (UNESCO, 2004). In general, the better performance of women in school can be explained by their mastery of verbal reasoning, the adoption of more effective learning strategies and their more ambitious career aspirations than those of boys.

The gap between the academic performance of girls and boys is all the more pronounced because, in adolescence, boys very often have a disdain for authority, are subject to greater pressure from their group of friends and adopt tough-guy behaviour in order to assert their masculinity (UNESCO, 2004). This assertion of their masculinity is also manifested by late arrivals and more or less regular absenteeism from school. In view of the under-education of women, their heavy domestic responsibilities and social and cultural constraints, one may well ask whether what is observed in industrialised countries may also be valid for African countries.

Thus, the woman is first and foremost a mother and wife and her main function is that of reproduction. In the home

of her parents, she is considered a '*temporary resident*' who has to migrate because of marriage, whereas in the home of her husband, she remains a foreigner from a family to which she is still attached. The woman marries at a very young age and carries out most of her activities within the marital home without any prospects for personal and individual development other than in the service of others (Tchabewou, 2002).

On the other hand, the man is perceived as the one who is responsible for the household. It is therefore up to him to carry out activities outside the marital home in order to provide for his family or household.

Since school offers the possibility of insertion into permanent and rewarding activities, the enrolment and supervision of boys in educational institutions is de facto guaranteed by parents. These norms and perceptions specific to the majority of African society largely explain the reluctance of girls to succeed at school because of the particular status of women to which they are called. While the existence of differential school performance in sub-Saharan Africa according to the sex of the child in favour of the male sex is corroborated by studies (DeVreyer, 1994; Clevenot and Pilon 1996) as an unsurprising reality, it is found among both male and female heads of household. However, female heads of household place as much importance on the educational success of their daughters as their sons.

The composition of the household

Household composition has a significant influence on children's schooling. Transfers of children to host households and other relatives are a factor in explaining the diverse household composition found in Africa. Many research studies show that children's schooling is affected by the composition of the household. The latter sometimes contributes to schooling, sometimes to under-schooling. Thus, the influence of household composition on children's school attendance is a function of household size, the presence of young children, the presence of adults and the elderly. It was found that the presence of young children is a barrier to children's school attendance. This is because these children require a lot of care and attention from their elders. In Botswana, Lloyd and Blanc (1995), in their study of seven sub-Saharan African countries, show that the presence of the elderly, and especially that of elderly women, has a positive effect on school attendance, since the latter also participate in domestic activities; this testifies to the substitutability of domestic activities between women and children, and between women and girls.

METHODOLOGY

To analyse the effect of family structure on school dropout, we use data from the Fourth Cameroon Household Survey (ECAM 4) in 2014. Like the three previous surveys, the main objective of the Fourth Cameroonian Household

Survey is to construct indicators on the living conditions of the population, in order to update the poverty profile in Cameroon, and to monitor and evaluate national poverty reduction strategies and progress towards achieving the Sustainable Development Goals (SDGs). In addition, this survey also makes it possible to assess the effects of macro-economic programmes and policies implemented in Cameroon since the HIPC initiative was reached, in order to improve the living conditions of households. This survey differs from the ECAM-III survey in that it does not include a section on the domestic activities of household members, and in this sense is similar to ECAM-I and II.

The sample was obtained using a two-stage stratified random sample. The stratification criteria for the sample were region and area of residence. The survey covered the entire country and included the 10 regions in addition to the cities of Yaoundé and Douala, the political and economic capitals respectively. For the area of residence, the stratification was done according to the urban, semi-urban and rural environments. The survey questionnaire contains 13 sections, the main theme of which is poverty. The variables used in the study come mainly from the first six sections, in addition to sections 0, 7 and 8 of the main questionnaire. The database consists of a single file that provides personal and household information for each individual. In addition, specific questions allow us to understand the health and education of the child. Our hypothesis will be tested using a defined methodology.

The fourth Cameroon Household Survey is based on a sample of 10,303 households for a total of 4,660 individuals. This sample size makes it possible to obtain the main significant indicators at the level of the 12 survey regions with good precision. In each survey region, three strata are defined: an urban stratum made up of large cities, a semi-urban stratum made up of medium-sized cities and a rural stratum made up of villages. As the regions of Douala and Yaoundé are considered entirely urban. The survey therefore considers 32 strata, 12 of which are urban, 10 semi-urban and 10 rural. In the framework of this study, the population studied was composed of children aged 0-17 years, for a total sample of 16988 children.

Descriptive analysis

In this study, we use univariate and bivariate analysis. For the bivariate analysis we cross-tabulate health status with each study variable. Thus, to cross two qualitative variables, we use the chi-square test at the 5% threshold. However, to cross a qualitative variable with a quantitative variable, we use the correlation matrix of the variables.

Econometric analysis

Due to the dichotomous nature of our dependent variable, we construct and estimate a Logit model. By dichotomous model, we mean a statistical model in which the explained variable can only take two forms (dichotomous variable). It is then generally a question of explaining the occurrence or non-occurrence of an event.

Hypothesis Consider a sample of N individuals with index $i = 1, \dots, N$. For each individual, we observe whether a certain event has occurred and we note y_i the coded variable associated with event.

$$y_i = \begin{cases} 0 & \text{if event } y \text{ did not occur for individual } i \\ 1 & \text{if event } y \text{ occurred for individual } i \end{cases}$$

The objective of the dichotomous models is then to explain the occurrence of the event under consideration according to a certain number of characteristics observed for the individuals in the sample.

Dichotomous probit and logit models admit as explained variable, not a quantitative coding associated to the realization of an event (as in the case of linear specification), but the probability of occurrence of this event, conditional to the exogenous variables. In the context of our work, the aim is to estimate the probability of a student dropping out of school, conditional on a set of control variables. Thus, we consider the following model:

$$p_i = \text{Prob}(y_i = 1/x_i) = F(x_i\beta)$$

Our dependent variable is school dropout. This variable measures the probability of an individual dropping out of school. It is captured by a dichotomous or binary variable, i.e. a variable taking two values, 0 or 1. It takes the value 1 if the surveyed student has dropped out of school and 0 otherwise (Noumba, 2008). This variable is explained by the following independent variables.

Our independent variables are all related to family instability. Thus, we can understand family instability on four specific aspects, namely, demographic family instability, social family instability, cultural family instability.

Socio-demographic aspects of family instability :

Marital status of the family :

Compared to polygamists, monogamous parents are more stable (Lututala al., 1996). Here, we will have a variable censored in three modalities: single, monogamous married and polygamous married. We recode it into two modalities: 0 if the parent is single and 1 if he or she is in a couple. The size of the household is determined by the number of people in the household. In the context of our study, this is the number of children in the family and the number of adults living in the household.

Socio-economic aspects of family instability :

Average household income: this represents the income from the main activity of both parents. Home-to-school distance: children who attend schools far from the household are usually exhausted by the distance, which may lead to drop-out. This variable is the number of kilometres / metres that separate the school from the

Table 1. Proportion of school dropouts

School dropout	Frequency	Percentage	Cumulative
No	11801	87.97	87.97
Yes	1614	12,03	100.00
Total	13415	100.00	

Source: Authors from ECAM 4

Table 2. Reasons for dropping out of school

Reason for dropping out of school	Frequency	Percentage	Cumulative
Completed studies	17	1.48	1.48
Cost too high	278	24.15	25.63
Employment/apprenticeship	102	8.86	34.49
School failure	220	19.11	53.61
Illness/disability	67	5.82	59.43
Marriage/pregnancy	105	9.12	68.55
Remoteness	11	0.96	69.50
Too young	19	1.65	71.16
Parental refusal	40	3.48	74.63
Other	292	25.37	100.00
Total	1151	100.00	

Source: Authors

child's home.

Socio-cultural aspects of family instability :

Level of education of the head of household: the more educated the parent, the less likely the children are to drop out.

Descriptive analysis of the data

Drop-out rates

The Fourth Cameroonian Survey shows that 87.97% of children continue their studies against 12.3% who have dropped out of school. This result is presented in Table 1 above:

There are several reasons for this drop-out rate, which are presented in Table 2 above.

From our observations, it appears that several reasons explain the dropout: Completed studies (1.48%); Cost too high (24.15%); Employment/apprenticeship (8.86%); School failure(19.11%); Illness/disability (5.82%); Marriage/pregnancy (9.12%); Remoteness (0.96%); Being too young (1.65%); Refusal of parents (3.48%) and several other (25.37%) unspecified reasons.

DISCUSSION OF THE RESULTS

The following Table 3 presents the estimates of the Logit model on the effects of family instability on school dropout among Cameroonian children.

The discussion of these results considers the econometric aspect on the one hand and the economic aspect on the other.

Econometrically, the Wald test allows us to conclude that the estimate is globally significant. Indeed, the p-value of this statistic is below the usual critical threshold of 5% (Prob > Chi2 = 0.000) for our estimate. That said, at least one of the explanatory variables explains the factors affecting the information. Moreover, the estimation results are robust, especially since the standard deviations have also been corrected for heteroscedasticity.

In economic terms, our results are mostly consistent with previous work with only a few exceptions. More specifically, the data in the Table 3 show that the effect of marital status is negative and significant at the 1% level. Deslandes and Bertrand (2008), in a review of the state of knowledge on 'school-family' relations, confirm this result. These authors point out that the degree of parental involvement in their children's school activities varies according to the family structure in which the child lives. The authors argue that at equal socio-economic and cultural levels, two-parent families (traditional families) are more involved in school and home schooling than single-parent families.

Considering a threshold of 1%, we can say that the probability of dropping out for children whose fathers have a primary education is higher than that of children whose fathers have a secondary education. On the other hand, those whose fathers have a tertiary level of education reduce the probability of dropping out. In other words, the higher the father's level of education, the lower the chances of dropping out. In the end, it is observed that the education

Table 3. Effect of family instability on school dropout (logit)

Dep Var : Dropout=1	1	2
VARIABLES	Coefficient	Coefficient
Marital status (In couple=1)	-2.119*** (0.293)	-0.0624*** (0.208)
Primary	10.80*** (0.847)	0.318*** (0.546)
Secondary	10.28*** (0.862)	0.303 (0.567)
Superior	-2.924*** (1.111)	-0.157*** (0.0301)
Boy	-0.484*** (0.140)	-0.0142*** (0.059)
Working children	1.355*** (0.155)	0.0399*** (0.011)
Son/daughter	-0.958*** (0.182)	-0.0282*** (0.090)
Confidence	-0.915*** (0.301)	-0.0269*** (0.022)
Christian	0.291 (0.297)	0.00855 (0.123)
Muslim	1.062*** (0.303)	0.0313*** (0.432)
Unemployed parent	3.712*** (0.427)	0.109*** (0.321)
Urban	0.245 (0.155)	0.00722 (0.006)
Constant	-13.97*** (0.872)	
Comments	7 275	7 275
Wald statistics	104.5***	
Nickname R2	0.1117	
Log pseudo-likelihood	-927.9189	

Source: Authors

Robust standard errors in parentheses *** p<0.01, ** p<0.05, * p<0.1

of parents is one of the key factors in the educational success of their children. Therefore, the father's education matters a lot with regard to school dropout. The higher the father's level of education, the more he is willing to do his best to keep his children in school. In other words, educated fathers may be better informed about the benefits of education, which encourages them to send and keep their children in school. These results are in line with those of Carron and Chau (1998).

Furthermore, the results show that the probability of dropping out is lower for boys than for girls. This result is justified by the fact that in Cameroon, the schooling rate between boys and girls is not the same. In most cases, parents do not invest in the education of girls because they are expected to marry and start a family before boys.

Compared to non-working children, working children drop out of school more than others. Thus, the probability of dropping out is higher for working children insofar as they do not have enough study time due to their various occupations. As a result, the probability of repeating a year is high and therefore of dropping out (Noumba, 2008).

With regard to religion, the probability of dropping out is

higher for Muslims than for Christians. This result confirms the disparities observed in Cameroon. The school enrolment rate in Muslim regions (Adamaoua, North and Far North) is very low compared to that of Christian regions. For example, in 2014, the school enrolment rate in the North and Far North regions was respectively 1% and 3%, while the same rate in the Centre and Littoral regions was 30% and 17% respectively during the same period.

Another result from our regressions shows that the probability of dropping out is higher for unemployed parents. This may be due to the lack of resources to send the child to school. In this sense, Borus and Carpenter (1984), in addressing the influence of the socio-economic level of parents, concluded that families living below the poverty line often have great difficulty in offering support for homework and lessons, and this inability increases the risk of failure and repetition.

Policy implications

Based on the econometric and statistical evidence described above, we can make the following

recommendations to education authorities and parents:

- ✓ Continue efforts to combat child labour. Indeed, our results suggest that working children are more likely to drop out of school than other children;
- ✓ Promoting household stability: Our estimates show that children born in wedlock are less likely to drop out of school than others;
- ✓ Promote education for all: the more educated parents are, the less their children drop out of school;
- ✓ Revisit some of our cultures: For example, we need to continue to fight against gender inequalities. We have seen that the probability of a girl dropping out of school is higher than that of a boy.

Conclusion

The objective of this study was to analyse the effect of family stability on school dropout in Cameroon. To achieve this objective, we used data from the Fourth Cameroonian Household Survey (ECAM 4). Empirically, our strategy consisted in constructing a binary variable capturing school dropout and in formulating and estimating a logistic model on this variable. The results of these empirical analyses suggest that, overall, family stability reduces the probability of children dropping out of school. More specifically, the marital status of parents affects the probability of dropping out of school. Also, the socio-economic conditions of parents (income, occupation, etc.) and their beliefs (religion, culture) have an impact on the probability of dropping out of school. Finally, we have seen that children who are socioeconomically active have a higher probability of dropping out of school.

Conflict of Interests

The authors declare that there is no conflict of interests regarding the publication of the paper.

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Annexes

Table 1: Correlation matrix of study variables

	Abanscol	stamat	Nivie	Quiet	Religion	Employment	environment	Tailm	Income
School dropout	1.0000								
Stamat	0.1700	1.0000							
Nivie	-0.1151	-0.0179	1.0000						
Quiet	-0.1002	-0.0153	0.2572	1.0000					
Religion	0.0171	-0.0795	-0.2059	-0.4286	1.0000				
Employment	-0.1363	0.0008	-0.2874	-0.1440	0.0528	1.0000			
Environment	-0.0078	0.1159	-0.3472	-0.2917	0.1510	0.4179	1.0000		
Tailm	-0.0832	-0.0173	-0.2992	-0.1151	0.2456	0.1065	0.1393	1.0000	
Income	-0.0066	0.1056	0.0848	0.1085	-0.1076	-0.1082	-0.0623	0.1420	1.0000

Source: Authors

Table 2. Descriptive statistics

Variable	Obs	Mean	Std, Dev,	Min	Max
School dropout	13415	0.1203131	0.3253394	0	1
Stamat	9910	1.150151	0.7161879	1	6
Nivie	20914	16.31156	0.482503	1	2
Quiet	24563	1.26145	0.9108312	0	3
Religion	24555	2.549868	1.609687	1	7
Employment	24563	1.234418	0.6514634	0	2
Environment	24563	1.234418	0.6514634	0	2
Tailm	20914	1.525772	0.4993473	1	2
Income	20914	7.451659	3.683191	1	30

Source: Authors