Corruption and Registration in Public Educational Institutions: Who Takes the Initiative? An Analysis of Microeconomic Data of the Cameroonian Regions

Oscar Bayemi[1], Benjamín Yamb[2]

[1] Faculty of Economics and Applied Management (FSEGA), University of Douala,
[2] Advanced School of Economics and Commerce (ESSEC), University of Douala, CAMEROON.

[1] bayemioscar@yahoo.fr, [2] gsyamb@yahoo.fr

ABSTRACT

This article highlights initiatives taking in the act of corruption between applicants and schools authorities in the Cameroon educational system during students' registration. An odds ratios analysis for the entire country and by region showed that in about 66.67% of cases in this educational system, the initiative for corruption comes from the Heads of institutions, and it is led by some motives such as the limited seats, the school facilities, the poor quality of applications and the compulsory requirement to buy school items. However, despite the fact that the magnitude of the initiative for the corrupt action by the teaching staff is more important than that of applicants in all regions, we nevertheless highlighted their characteristics through a Poisson regression. In particular the empirical analysis revealed that urban and rich people take more initiative than rural and poor people as far as corrupt actions are concerned.

Keywords: Corruption, educational system, motives for initiative taking, odds ratios, Poisson regression

INTRODUCTION

Education is considered by Becker (1964) as the main investment in human capital, as it may develop a better productivity of the Work force and therefore its remuneration. Education is not only a mode of transmission of knowledge; it is also a way of transferring moral habits and behaviors. Unfortunately in many countries of the world, especially the poorest where corruption is a norm in elementary school, high school and university, education can no longer fulfill its function of transmitting moral values and behaviors.

According to the report of the conference of the World Education Forum held in Dakar in 2000 (UNESCO, 2000), "Corruption is a major economic burden that drains resources from education and therefore should be strongly resisted." Gupta *et al.* (2002) found that the desertion rates in schools are five times higher in countries where corruption is higher than in those where it is low. Francis Huang (2008) found by studying a sample of 50 countries, that the higher the rate of perceiving corruption in a country, the poorer the school outcomes.

To address this issue, several studies have been conducted over the past two decades by the World Bank, Transparency International and various universities. The authors of these works based themselves on the popular definition of corruption, namely. "The use of public resources for private purposes." In this context, some (Mauro, 1998; Das *et al.* 2004; Arcidiacano, 2005) examined the practices of high corruption involving large amounts of money and State summits - for example, the embezzlement of funds for major public projects like the building of schools. Others (Karim, 2004; Chaudury *et al* 2003) studied the practices

of little corruption which concerns small civil servants and lesser amounts - for example, the collection of illegal registration fees by schools officials. These works helped to make progress in the fight against corruption. In particular, they have contributed to know that by institutionalizing people's right to information on the activities of civil servants, they will be forced to improve their behavior. But these works are limited especially because of the ignorance of factors behind this phenomenon, particularly small corruption. If the theoretical literature offers a detailed reading grid (Mocan, 2004; Lui, 1885, Kaufman and Wei, 1999) of specific situations, the empirical literature, nevertheless, remains limited.

It is true that Lavallée *et* al. (2010) used the Afro barometer survey to determine the factors that are responsible for the practices of small corruption in health and educational services in 18 African countries. This study is important because it confirms a particular behavior of women as far as corruption is concerned, according to the number of previous studies on this issue (Dollar, Fisman, Gatti, 2001; Swamy *et* al, 2001.). Indeed, women are less willing to make undue payments in case of a potential problem with the administration. However, this study cripples the functionalist argument that corruption is a way to grease a "system" facing an invasive bureaucracy and a regulation stifling a private initiative (Cartier Bresson, 1998). One limitation of this study is that it does not take into account the case of Cameroon which during the last 20 years, is one of the few countries that were ranked for two consecutive years at the forefront of the most corrupt countries in the world according to Transparency International.[3]

This paper therefore aims to fill this gap by finding out who initiates the corrupt act in public schools of this country. Theoretically speaking, the initiative can either emanate from school authorities (passive corruption) or from applicants (active corruption) (Dommel, 2003). Empirically speaking, the distinction between these two types of corruption is rarely made. Many surveys on households reported the perception that they pay non-regulatory fees. Unfortunately, the resulting data provide no information on the initiative of taking corrupt actions. In contrast, the survey that the National Institute of Statistics conducted in 2007[4]in the twelve Cameroonian regions help to analyze this important topic in the educational field.

However, in Cameroonian public schools, it is not enough to simply know that the taking of initiative for the corrupt act comes from school officials; the most important is to identify the agent from whom it truly emanates; is it from the school Director or his collaborators? This question helps to test through theoretical models (Shleifer and Vishny, 1993; Rose Ackerman, 1978), if civil servants in a monopoly situation, notably Heads of institutions[5], are more likely to collect bribes.

We will also seek to determine the characteristics of users who initiate the corrupt act, even if the popular definition of corruption less adapts the idea of active corruption. But byso doing, we will at the same time emphasize on the characteristics of some of the users who pay non-

[3] Cameroon ranked first in 1998 and 1999

[4]The data used in this work are essentially those of the last two Cameroonian household surveys (ECAM2 of 2001 and ECAM3 of 2007), focused on the profile of poverty and living conditions of populations in Cameroon and PETS2 Education 2010 (Survey on the monitoring of public expenditure and the level of beneficiary satisfaction in the Education and health sectors), with sample sizes of about 12,000 households provided for ECAM3 and PETS2, and 4500 households for the specific section on corruption. Apart from the inquiry on households, ECAM3 andPETS2 also interviewed people on corrupt practices that have benefited from similar techniques. It`s on individuals' sample that this study is carried out and not on households. Thus, compared to ECAM3, approximately 16,514 individuals were interviewed and almost 2,000 for PETS2.

[5]The Director of the institution as compared to his employees is generally in a monopoly situation in making the final decision. His view always prevails on others. However, the position of the Head of an institution as compared to other schools Directors may instead run as a competitive situation. We consider the first case only.

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regulatory fees. Indeed, the question related to the payment of these fees helps to know, as suggested by the theoretical models (Kaufman and Wei, 1999; Lui, 1985), whether civil servants target their victims based on their ability to pay. Such an argument implies that the richest people, those who have a job or those who have the highest tolerance to corruption should be those that are asked bribes the most.

In Cameroon, the National Commission against Corruption (CONAC) obtained mitigated results in the fight against this scourge in education as a whole, and especially during students' registration in public schools, partly because they ignore the actors' identity. The purpose of this study is twofold.

First of all, it will help to identify people who, on the side of school institutions, receive more bribes during registration. Then, it will seek to highlight from the demand side, the characteristics of applicants who are most vulnerable to this phenomenon. In both cases, we will highlight areas where the phenomenon is most widely practiced.

Secondly, this study will propose appropriate measures against this scourge because education is seen in every country in the world not only as a key to a better future, but also as a way to transfer moral habits and behaviors ; actually, to fight against corruption in education implies to fight against this scourge in all sectors of active life.

The second section proposes a review of the literature on the mechanisms and factors causing corruption in the educational sector. Section 3 presents how school registrations are conducted in Cameroon and factors that expose this practice to corruption. Section 4 highlights on the conceptual model as well as the implemented methodology. Statistical estimates obtained are discussed in section 5. Section 6 concludes the study and discusses the recommendations on the fight against this phenomenon.

LITERATURE REVIEW

In the economic analysis of crime, the individual weights the costs and benefits of a loyal act, and compare them to those of a disloyal act, and then chooses the one that maximizes his own interests (Becker, 1968). According to this analysis, an agent will be corrupt when in his mind; the advantages he hopes to gain from such behavior are above the expected costs. Similarly, a user will not engage in bribery or other forms of illegal behavior if for him the benefits outweigh the potential costs (Klitgaart 1989). In this perspective, it is likely that the economic agent chooses to engage in a corrupt action when it is advantageous to him. The initiative of this act can come from either the agent or the user or even the both.

However, the ability of the State Agent to take initiative for the corrupt act would be more important than that of the user if we refer to Klitgaard's equation (1989) which states that corruption is equal to monopoly plus discretion power minus responsibility.

Indeed, the monopoly creates opportunities for corruption by limiting the ability of students and parents to choose other providers of educational services. For example, in the only government school of the village, the parent may be forced to pay bribes to register his child because there is no other alternative.

Discretion refers to the autonomy of power that can be enjoyed by agents of the educational system in decision making, regarding for instance the choice of allowance methods of resources to schools. Das *et* al. (2004) showed that in Zambia, the fixed allowance reached more primary schools than the discretionary subsidy to schools by local authorities (90% against less than 20%). A high level of discretion power without adequate control creates opportunities for corruption.

Responsibility can be considered as the requirement that educational managers are accountable for the results they get. Lack of accountability creates opportunities for corruption. Ultimately, Klitgaard's equation (1989) reinforces the idea that corruption is essentially passive (Dommel, 2003).

For other authors, the corrupt act comes essentially from social facts (Bissessar, 2009; Andvig and Moene, 1990) and not from the agent or the user. These facts therefore instigate them to take initiative for corrupt acts. So, Andvig and Moene (1990) suggest that the more there is corruption, the less it is costly for the briber and the civil servant to initiate corrupt relationships, and this for two reasons. First and foremost, it is conceivable that the guilt engendered by corruption decreases as the practice is being spread. Secondly, the spread of corruption would reduce the initiation costs of the corrupt relationship. Indeed, as the number of corrupt bureaucrats grows, it is easier for an individual to find a corrupt civil servant (Lavallée*et* al, 2010). The increase in the number of civil servants reduced the entry cost (loss of reputation or risk of punishment) of new entrants (as well as the amount of the bribe), and leads to a contagion of the entire administration (Andvig, 1991). In this logic, if all civil servants are upright, it brings nothing to be corrupt; if all civil servants are corrupt, honesty does not pay (Cartier Bresson, 1998). Gatti, Paternostro and Rigolini (2003) show on a sample of 35 countries that these social effects play an important role in determining individual attitudes towards corruption.

Besides that, companies which social norms are not based on meritocracy often face academic corruption (Meier, 2004). In comparative studies of different models of formulas for allowing resources to schools, Levacic and Downes (2004) showed that a very readable formula or having "negative incitations" for those who implement it, or misunderstood by the general public, was likely to encourage the development of fraud practices–insofar as only a few specialists can verify that the funds have been allocated properly.

According to Meier (2004), there is clear relationship between corruption and economic factors such as inadequate wages. These factors can push agents to initiate corrupt acts. Indeed, the low wages in the Public Service, including in the educational system, largely explains the trivialization of small corruption (Klitgaard 1989; Beley and McLaren, 1993). The more the level of salaries in the Public service is less than those of the private sector, the greater the temptation of illegal cash up will be powerful (Cartier Bresson, 1998).

REGISTRATIONS PRATICE IN THE CAMEROON EDUCATIONAL SYSTEMAND THE ACTORS' BEHAVIOR

The registration of a student in a school is an administrative act by which the Head of that institution gives him permission to attend classes. In each institution, students who repeat or pass to the next level are allowed to register for the following year. However, new students from other institutions may register only if they meet the admission requirements. The problem that arises is what are the requirements for registration for new students? What are the actions that parents and school leaders take for the promotion of students' registrations in institutions? To answer these questions, we will present recruitment modes prevailing in Cameroon, parents' and Heads of Institutions' tasks respectively, and then highlight the different actors' behaviors in the registration process.

Registrations Practice and Recruitment Modes

The Cameroon educational system is generally divided into four modes of recruitment namely the competitive exam, the transfer, the study of credentials and finally the

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'negotiation'. The survey that the National Institute of Statistics has carried out in 2010 in the twelve regions of the country on the monitoring of public expenditures for education (INS, 2010) reveals that the recruitment based on the candidate status or on the study of files is the most used mode because 68.6% of recruitments are done through this channel. Competition mode ranks second, negotiation and transfer third and fourth respectively. However, this classification is constant when we go from one region to another. So, whatever the chosen method of recruitment, the registration process requires that the parties involved including parents and school leaders have the necessary resources for the implementation not only of registration, but also for the running of schools.

To promote registrations, students and public authorities represented by parents and school leaders respectively must assume some responsibilities.

Parents have to bear legal fees and sometimes illegal ones (rightly or wrongly) required by heads of institutions or their employees. Fees that parents must legally pay to the school include school and registration fees. However, it sometimes happens that they pay non-regulatory fees. According to INS2010, the phenomenon of non-regulatory fees is most practiced in the public sector than in the private sector, and the Yaoundé and South regions are those where the practice is the highest. The North-West and the Far North are regions where the phenomenon is less common. But it is unclear whether the initiative comes from parents or school principals.

Students' registration assumes that the school principal has a minimum of material and human resources to accommodate them. Lack of resources can be the source of corruption. Thus, investigations of INS 2004 and 2010 give us an overview of the status of available and non-available resources in the Cameroonian primary and secondary schools. The survey shows that there is lack of seating places in secondary schools and that each school in Cameroon would have an average of 885 seats for about 930 students. On average, there are fewer places than students in schools. This deficit is increased in the survey areas of Yaounde, Douala and in the Far North. However, in the Adamawa, Center, East, West and North-West, it's rather noted the existence of a potential of unexploited seats in the greatest number of schools. This finding is generally valid for rural areas of the survey zones except forthe West and the North-West where it's generalized to all environments. In urban areas, the regions of Yaounde, Douala, Center and Littoral present the most exceeded carrying capacities.

Since the introduction of free public education and therefore the removal of school fees in primary education, the State has established the "minimum package[6]" to alleviate the teaching material needs in primary schools. This is actually a providing teaching materials corresponding to the minimum needs of each school, and which is sent to the school at the beginning of the school year. In 2008/2009, despite the efforts of the authorities for the minimum packet to reach its destination, 4.5% of public primary schools across the country say they have not received it, including 5.6% in urban areas against 3.4% in rural areas. The survey also allows having an idea of the main difficulties encountered to remove the minimum package in a given region.

The first obstacle to the distribution of the minimum package is landlocked regions. 61.2% of school principals complain about that obstacle. The second obstacle is the delay in the arrival

[6]In its structure, the minimum package essentially consists of items such as (i) office supplies for teachers, (ii) teaching materials to be used by teachers, (iii) teachings monitoring and students' assessment equipment, (iv) sport and leisure equipment and finally, (v) a small drugstore.

of the minimum package and the fact that it is sometimes incomplete; 52.2% of the principals took note of it. The third obstacle is the lack of ferry fees to send it. 3.3% of principals complain that authorities who distribute the minimum package require bribes. All these obstacles act in such a way that school principals do not have the minimum allocation for the teaching materials corresponding to the minimum needs of each institution at the beginning of the school year. It is therefore possible that they ask parents wrongly or rightly to participate in the provision of this material for their children to be enrolled.

The Actors' Behavior

This is to describe the corrupt behavior of suppliers (School leaders) and applicants (users). In other words, to highlight a diagram explaining their corrupt behavior.

If the taking of initiative for the corrupt act comes from the suppliers, it is important to know from whom it actually emanates. From the Principal or his collaborators?

Given a model consists of three actors namely students (or their parents), the director / principal (Boss) assisted by a colleague[7] or employee (agent) in the provision of educational services like the recruitment of children in a school. After being provided with the required formal application for registration, the parent is, at first, received by the collaborator. The latter identifies the characteristics of the student's file, age, medical certificate, transcripts of the previous year, etc. Secondly, with the consent of the agent, the parent is received by the principal. Because of the asymmetric information and the difference of interests between the director and his collaborator, the initiative for corruption can come either from the first or the second, or from the both.

In the first case, unbeknownst to the boss, the colleague may require that the parent provides a bribe for privileged access (market corruption). But if the parent is a close relationship to the colleague, he/her can offer him/her privileged access without receiving bribe. In this case, Medard (1998) talks of social exchange corruption. In the second case, after identifying the characteristics of the file, the colleague authorizes the encounter between the parent and the principal. He can receive the parent and may also first and foremost require the payment of a bribe. It can also be an agreement between the director / principal (Boss) and his collaborator (agent). In this case, the latter collects bribes from the parent and gives them to the boss for share. In all these cases, the problem that arises is who between the colleague and the principal takes most the initiative for the corrupt act?

The initiative for the corrupt act may also come from the applicant insofar as they are generally many outside the office of principal / directors because the supply of services is almost always much lower than the demand. They must therefore be aligned to be received, each person waiting for his turn. However, the applicant who waits for his turn in the waiting line totally ignores the behavior of the applicant who has already being received by the principal. In fact, some parents do not hesitate to propose bribes to the teaching staff to enroll their children, especially in case of a delay to submit the application at the registration period (parents went about it too late) or because of a poor quality of the application of their offspring.

Motives for the Initiative Taking for the Corrupt Act: A Theoretical Discussion

The ECAM3 survey on parents reveals five reasons that are behind the initiative of corruption. These motives can be classified according to the malfunctions related to the

[7]The colleague or collaborator may be either the censor, the superintendent or a simple teacher

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supply or the demand. In the first case, it is about limited seats in classrooms, scarcity of benches and tables and the compulsory purchase of school items from schools. In the second case, it is about the delay at the time to apply for registration (the household went about it too late), and the poor quality of the application (see appendix A, table A_1).

In general, the "limited seats", according to most respondents are 38.82% the most important reason (this element was quoted 28,278 times by parents as a reason). Indeed, the scarcity of public facilities (seats in classrooms) generates waiting lines. The more they are significant and the greater they are indispensible; the better parents are willing to pay a premium for privileged access (Cartier Bresson, 1998).

However, when we go from one region to another, the reason for taking this initiative may change. Thus, in the Yaounde, Adamawa and Center regions, the most prominent reason is the limited seats, while in the Douala, Far North, Littoral, West, North-West regions, the most prominent reason is the inadequacy of school facilities and especially the benches (see appendix A, table A_1)two scenarios are possible, a real lack of equipment and an artificial shortage. In the first case, the requirement of irregular payments by the heads of institutions to purchase benches can be understood, but is not justified insofar as this role falls to the public authorities. Actually, these authorities send allocations to schools for their running, which unfortunately can be achieved with a delay or not at all (see appendix B, table B_1), what could justify the requirement of such payments by school leaders. In the second case where the shortage does not exist (benches are available), some principals artificially create scarcity and push parents to pay them bribes. In fact, for the student's parent, the payment is actually to buy a bench; yet, it has nothing to do with it insofar as that payment goes into the pockets of the principal.

Another alternative in this case can appear namely the availability of benches in classrooms according to the standard set by public authorities (for example, 50 students per classroom). However, School leaders do not respect the standard set by the government and go beyond it by requiring payments from parents for surplus of benches (which is illegal) for their children. In fact, if the standard set by public authorities is 50 students per classroom, the school leader can go beyond that standard and recruit more students, thus justifying the requirement for additional payments. Once again, public authorities do not fully play their role. Control missions which should occasionally inspect school facilities and ensure compliance with standards are absent. Even though some of these missions are present, they are sometimes corrupt by the school authorities (see appendix B, table B_1, and corruption among civil servants).

In the South, South-West and East regions, the poor quality of applications is the most prominent reason. Indeed, a parent whose child has been expelled from school for bad results can renegotiate his/her place to the leaders of the same school or another one for him/her to be readmitted or admitted. He will then pay bribe in exchange of a re-registration or a registration. One of the reasons that instigate parents to do so is the high school fee in private schools which are alternatives to public schools. By re-registering or registering a student expelled from school in the same school or in another school, the parent avoids paying high school fees in the private. In one case as in the other, the national decision taken by the governing board for poor performance is harmed. The school management is no longer based on the cult of merit, but rather on 'the power of money'.

Finally, in the western region, the most prominent reason and for which the initiative for corruption is taken is the compulsory purchase of school items (reams of paper, notebooks and sportswear) within these institutions at significantly higher prices than those on the

market: in fact, the sales function of school items namely sports clothing is not meant for the institutions, but rather for approved structures.

METHODOLOGY AND MODELIZATION OF THE TAKING OF INITIATIVE FOR

The initiative taking for the corrupt act in terms of supply will be tackled through odds ratios but also, through the relative risk and differences in proportions. For each region, we built the contingency table 2 x 2 as follows:

Table 1. Joint and Conditional Distributions

Official Who Perceived Bribes (P)	*No*	*Yes*
Head Master/Director	π_{11} $(\pi_{1\|1})$	π_{12} $(\pi_{2\|1})$
Colleague/Collaborator	π_{21} $(\pi_{1\|2})$	π_{22} $(\pi_{2\|2})$

Sources: Authors' Conception

Where π_{ij} represents the number of officials who received bribes and take the initiative or not for such payment, $\pi_{i/j}$ the number of officials who received bribes given the initiative taken to payment. π_{ij} and $\pi_{i/j}$ representing respectively the joint and conditional distributions used to calculate the following odds ratios .

$$\theta = \frac{\pi_{11} / \pi_{12}}{\pi_{21} / \pi_{22}} = \frac{\pi_{11}\pi_{22}}{\pi_{12}\pi_{21}} \quad \text{.....(1)}$$

The numerator and denominator of the first term of this equation represent respectively the relative risk compared to the responses of the payment initiative, that is, 'no' or 'yes'. When $1<\theta<\infty$, we will say that the Head of the school (Principal / Director) would tend not to take more initiatives concerning corrupt actions (or take less initiative) than his colleagues or collaborators. In this case, at the level of the numerator of the relative risk of the first term, we will have $\pi_{1/1} > \pi_{1/2}$ that will be rather interpreted in terms of probability, that the proportion of schools leaders not taking initiative for corrupt actions would be x times higher than that of those who are not leaders. At the contrary, if $0 <\theta< 1$, one will have the opposite effect at the level of interpretations with $\pi_{1/1} < \pi_{1/2.}$ It is worth turning now on the demand side to highlight the characteristics of users who initiate corrupt actions.

We can tackle the initiative taking for the corrupt act by applicants through a Poisson distribution, given that the behavior of the latter is materialized by long waiting lines in front of the Principal's office as formerly described in the previous section. In fact, the applicant i who waits for his turn completely ignores the behavior of the applicant j who was already received by the Principal/Headmaster. In view of the above, we can consider the initiatives for the corrupt act taken by users as being random and independent from each other in time and space, the different occurrences of events apparition in a contingency table being often identified as independent random variables that follow a Poisson distribution. The taking of initiative for the corrupt act being the choice of the applicant, it may be captured through the

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various components of a generalized linear model (GLM)[8], this thanks to a Poisson distribution of the following form.

$$f\left(n_i m_i\right) = \frac{e^{-m_i} m_i^{n_i}}{n_i} \qquad (2)$$

Where n_i represent the frequency of the occurrence of the event 'initiative taking for the corrupt act by users', considered as independent random variables constituting the contingency table cells, and $m=E(n_i)$ being the corresponding expected frequencies. This distribution can also be rewritten as.

$$f(n_{i;}m_i) = \exp\left[n_i \log(m_i) - m_i - \log(n!)\right] \quad \ldots\ldots\ldots\ldots (3)$$

$$= \exp\left[n_i\theta_i - \exp(\theta_i) - \log(n!)\right] \quad \ldots\ldots\ldots\ldots (4)$$

$$f(n_i; m_i) = \exp(-m_i)(\frac{1}{n_i!})\exp\left[n_i \log(m)\right] \quad \ldots\ldots\ldots\ldots (5)$$

This last expression is but the general expression of the probability distributions belonging to the family of exponential distributions. Using the various transformations and existing functional links between the GLM[9]components, the last expression above leads directly to the log-linear model used below in our estimates through contingency tables.

$$\log m = X\beta \qquad (6)$$

X is the matrix of the model containing the values of the independent variables for N observations and β the vector of the model parameters.

The response variable (the frequency of the occurrence of the event taking initiative by users) here follows a Poisson's distribution and the function of the chosen link being the log, the average parameter m of the Poisson distribution will be therefore linked to the linear predictor through the following relationship,

$$\log(m_i) = \sum_j \beta_j x_{ij} \quad i = 1,\ldots., N \ldots\ldots\ldots\ldots\ldots\ldots (7)$$

Independent Variables Used and Signs Expected

The independent variables used in this study are mostly from the classic literature on the determinants of corruption in developing countries. These are the region, place of residence, gender, standard of living, age and activity status variables. Thus, for each observation i we have the following relationship.

[8]These components include: the linear component, the random component and the link describes the functional relationship between the above two components. The systematic or linear component, as in traditional linear models (the traditional linear model of the form $y_i = x_i'\beta + \varepsilon_i$ and the mathematical expectation of the form y_i noted $E(y_i)$ is $\mu_i = x_i'\beta$ specifies a linear function as predictor of the independent variables namely $\eta_i = x_i'\beta$. The canonical link is a Log link of the form $\eta_i = \log(m_i)$ (Agresti. A. 1990, PP 80-82)

[9]Agresti, Alan: Categorical Data Analysis, 1990, John Wiley &Sons, Chapter 13, PP 445-55

$$log(m_i) = \theta_0 + \sum_j region_i(j)\,\beta_{j+} \sum_j milieu_i(j)\,\beta_{j+} \sum_j gender_i(j)\,\beta_{j+} \sum_j level_i(j)\,\beta_{j+} \sum_j age_i(j)\,\beta_{j+} \sum_j activity_i(j)\,\beta_j \quad \ldots(8)$$

Each of the above mentioned variables being associated with the j^{th} level of independent variables for the observation i namely

$$x_i(j) = \begin{cases} 1 & If\ x = j \\ 0 & If x \# j \end{cases}$$

Gender appears to be causing the behavior towards corruption. Numerous studies carried out at the individual level emphasize that women are less tolerant than men with regard to corruption (Dollar, Fisman and Gatti, 2001; Swamy *et* al, 2001). Also, at the macroeconomic level, Dollar, Fisman and Gatti (2001) showed that countries where women's representation in politics is high are also those having the lowest levels of corruption.

Age also appears to be a factor in reducing exposure to corruption (Hunt, 2004; Seligson, 2006). According to Seligson (2006), young people are more often victims of corruption as they have to settle in life and thus, be more in touch with the administration. Hunt (2004) believes that older people are less victims of corruption as they have had time to create a "trust network". Gradually as life progresses, reciprocal exchanges (social capital) would replace corruption.

Residential environment equally appears to be a factor that exposes people to corruption. For Seligson (2006), corruption is an urban phenomenon. Urban people are more likely to seek services from State officials than rural people who have little contact with them.

The functionalist sees corruption as a way to lubricate a system confronting a pervasive bureaucracy and regulation stifling private initiative (Bhagwati, 1982). In such an environment, those in a waiting line, having higher incomes and giving more value to a fast service, tend to take the initiative to pay bribes for a privileged access. Corruption is an auction mechanism for a user to own something he values most (Cartier Bresson, 1998).

STATISTICAL ESTIMATESANDEMPIRICAL DISCUSSION

Why Do Some Managers Take More Initiatives Than Others As Far As Corrupt Acts Are Concerned? An Odds Ratio Approach Estimation

Table 2 below shows that school leaders are those who at the forefront, initiate acts of corruption in 50% of the Cameroonian regions (Douala, Adamawa, Center, North, North-West and South-West). Other school officials rank second because they initiate corruption acts in 33.33% of the regions (Yaounde, Far North, West and South). Our results do not allow us to talk in favor of the first or the second in 16.66% of the regions (East and Littoral).

Two reasons help to explain why school leaders rank first. Firstly, within an institution, there is a single leader. Other officials namely, supervisors, censors, teachers are subordinated to him. For example, a parent cannot enroll his child in a school without the consent of the Principal. Monopoly creates opportunities for corruption enjoyed by the boss by limiting the ability of parents to contact other officials. The State being the only provider of educational services, a student's parents can be forced to pay bribes. However, the private sector also offers similar services. But they are more expensive and therefore inaccessible to most parents. Secondly, school leaders are holders of a discretion power insofar as they have considerable autonomy in decision-making. Certainly, there is a statutory text in secondary

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education that establishes a committee for students' enrollment chaired by the Principal. This committee consists of the censor, the general superintendent, a representative of the mayor and a sub-divisional officer. Yet, such a committee is expected to control the discretion power of the leader.

Two reasons help to explain why other officials rank second in the taking of initiative for the corrupt actions in four areas: Yaounde, Far North, West and South. Firstly, in these regions, other officials are involved in the students' Registration Committee. They decide for the quality and quantity of students to enroll. Their presence in the Registration Committee grants to other officials a certain discretion power. Precisely, a strong discretion power without adequate control creates opportunities for corruption. These managers can use this discretion power to enroll students in exchange of a bribe. Secondly, in many schools, the leaders give each teacher the possibility to register a number of students. Some teachers use this delegation of responsibility to enroll students in exchange of bribes.

Table 2(Part-I). Relationship between managers who received non-regulatory fees (P) and the payment initiative (I) given the region (R)

Region (R)	*Manager who Received Bribe (P)*	*Payment Initiative (I)*		*Magnitude Difference (%)*
		The Applicant	*The Official*	
Douala	Head Master/Director	729.5 (4.63)	15036(95.37)	72.4
	Other Officials	3302.5 (24.5)	10162 (75.5)	
	Total	4032 (13.8)	25197 (86.2)	
Yaounde	Head Master/Director	784.5 (4.74)	15754 (95.26)	94.96
	Other Officials	0.5 (0.00)	14551 (100)	
	Total	785 (2.52)	30304 (97.48)	
Adamaoua	Head Master/Director	210.5 (13.42)	1358.5 (86.58)	29.74
	Other Officials	525.5 (99.90)	0.5 (0.10)	
	Total	736 (35.13)	1359(64.87)	
Center	Head Master/Director	1249.5 (21.3)	4609.5 (78.7)	41.1
	Other Officials	674.5 (99.93)	0.5 (0.07)	
	Total	1924 (29.45)	4610 (70.55)	
East	Head Master/Director	0.5 (0.02)	2117.5 (99.98)	99.94
	Other Officials	0.5 (0.04)	1261.5 (99.96)	
	Total	1 (0.03)	3379 (99.97)	
Far North	Head Master/Director	304.5 (6.0)	4738.5 (94)	92.24
	Other Officials	0.5 (0.02)	2804.5 (99.98)	
	Total	305 (3.88)	7543 (96.12)	
Littoral	Head Master/Director	0.5 (0.01)	5213.5 (99.99)	99.95
	Other Officials	0.5 (0.02)	2414.5 (99.98)	
	Total	1 (0.013)	7628 (99.97)	

Table 2 (Part-II). Relationship between managers who received non-regulatory fees (P) and the payment initiative (I) given the region (R)

Region (R)	*Manager who Received Bribe (P)*	*Payment Initiative (I)*		*Magnitude Difference (%)*
		The Applicant	*The Official*	
North	Head Master/Director	2761.5 (26.5)	7662.5 (73.5)	43.54
	Other Officials	562.5 (41.67)	787.5 (58.33)	
	Total	3324 (28.23)	8450 (71.77)	
North-West	Head Master/Director	214.5 (4.54)	4506.5 (95.46)	85.48
	Other Officials	349.5 (11.49)	2692.5 (88.51)	
	Total	564 (7.26)	7199 (92.74)	
West	Head Master/Director	2299.5 (33.4)	4598.5 (66.6)	43.4
	Other Officials	1775.5 (23.7)	5727.5 (76.3)	
	Total	4075 (28.3)	10326 (71.7)	
South	Head Master/Director	693.5 (23.47)	2261.5 (76.53)	72.52
	Other Officials	573.5 (9.10)	5727.5 (90.90)	
	Total	1267 (13.68)	7989 (86.32)	
South-West	Head Master/Director	0.5 (0.03)	1904.5 (99.97)	65.3
	Other Officials	1047.5 (25.4)	3084.5 (74.6)	
	Total	1048 (17.35)	4989 (82.65)	

Sources: Authors' calculations based on survey data of ECAM3 2007

The above table sets out the relationship between the Head of the institution who collects non-regulatory fees, the payment initiative that can come either from the applicant or an authority of this school (the Principal or someone else), and the region in which the corrupt act takes place. We have two independent variables namely the region (R) and the type of manager who collects non-regulatory fees (P). The dependent variable here is the origin of the payment initiative (I) either from the applicant or from an authority of the institution; This allows us to analyze the various corrupt behaviors between the different actors (Principals and applicants) in each region, this latter variable also being seen as a control variable.

The table shows the proportions (figures in parentheses) of those who initiate the payment, that is to say, that of the corrupt act; it is clear that whatever the region, the proportion of school officials responsible for the corrupt act, that is, who ask the applicant to pay bribes to be served, is significantly greater than that of the users who take more initiative to do so; we say for example that in the Douala region and its surroundings, the payment initiative (or the corrupt act) is usually about 72% (86.2% - 13.8%) higher among Heads of institutions (The school leader or someone else) than among applicants requesting for service. This table (see in column ‘magnitude of the difference in %) therefore traces the extent of the corrupt act of schools managers as compared to applicants for each region.

The magnitude of the corrupt act being greater among school leaders than among applicants, we will once again from the table above determine which category of school authorities (Principal or other) is more at the origin of the corrupt act; This will help us to make a typology of the different categories of the most corrupt leaders and this by region, since this

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magnitude varies from one category to another as the data of the table indicate. In Douala for instance, estimates of the table show that among schools managers, the payment initiative is usually about 20% (95.37% - 75.5%) higher among leaders (High school Principal or Primary school Director) than among other officials, this with a relative risk of about 1.26 (95.37 / 75.5). In other words, the proportion of officials subject to corrupt act is about 1.26 times higher (26% or higher) for Heads of schools than for other officials. The same patterns with different magnitudes and relative risks are found in the Adamawa, Center, North, North-West and South-West regions.

However, some regions in this table show opposite tendencies to those observed earlier. As a matter of fact, the magnitude of the taking of initiative for the corrupt act is rather lower with the Head of the school than with his collaborators in these regions. It is the Yaounde region and its surroundings (a payment initiative higher for about 5% for other officials for a relative risk of almost near 1.05), the Far North, West and South regions.

Finally, we observe two regions, namely the East and Littoral where the magnitude of the taking of initiative for the corrupt act between school leaders and their colleagues is almost the same, the relative risk in both case being equal to 1. Table 3 below thus shows for each region, the magnitude of the taking of initiative for the corrupt act by different categories of leaders.

Table 3. Identity of those who take initiatives for the corrupt act in a given region

Regions in which the initiative taken by the Head of the Institution is the highest as compared to others		
Region (R)	*Taking initiative for the corrupt act*	
	Relative Risk	*Magnitude (in %)*
Douala	1.26	20
Adamaoua	910	86,5
Center	1062	79
North	1.26	15
North-West	1.07	7
South-West	1.33	25
Regions in which the initiative taken by others is the highest as compared to that of the Head of the Institution		
Region (R)	*Taking initiative for the corrupt act*	
	Relative Risk	*Magnitude (in %)*
Yaounde	1.05	5
Far-North	1.06	6
West	1.14	10
South	1.18	14

Regions where the magnitude of the initiative taken by the two groups is essentially the same		
Region (R)	*Taking initiative for the corrupt act*	
	Relative Risk	*Magnitude (in %)*
East	1	0.02
Littoral	1	0.01

Sources: Authors' calculations based on survey data of ECAM3 2007

The table below shows the estimated odds ratios reflecting the relationship between the three variables; these odds ratios were obtained from the data in Table 2; these odds ratios will allow us to better understand the extent of the corrupt act by highlighting previous analyzes. thus, an odds ratio of $\hat{\theta}_{PI/R}$ <1 will simply imply that in the teaching staff of a given region, the opportunities of taking initiative for the corrupt act will be higher for school leaders than for others, and an odds ratio of $\hat{\theta}_{PI/R}$ > 1 will have the opposite effect. Let's note that the more $\hat{\theta}_{PI/R}$ will be loser to zero, the magnitude of the initiative taken by Heads of institutions will be higher than that of their colleagues.

Table 4 (Part-I). Typology of corrupt Regions and Relationship between (P) an (I) given (R) in the Cameroon Educational System.

Region	*Odds Ratio ($\hat{\theta}_{PI/R}$)*	*Confidence interval of 95% of the odds ratio* $_{(\hat{\theta}_{PI/R})}$	*Rang*
Douala	$\hat{\theta}_{PI/Douala}$ =0.15	$\hat{\theta}_{PI/Douala}$ (0.1373, 0.1624)	6
Yaounde	$\hat{\theta}_{PIYaounde}$ =1449.18	$\hat{\theta}_{PIYaounde}$ (90.55, 23191.44)	3
Adamaoua	$\hat{\theta}_{PI/Adamaoua}$ = 0.0001	$\hat{\theta}_{PI/Adamaoua}$ (0.000, 0.0024)	1
Center	$\hat{\theta}_{PICenter}$ = 0.0002	$\hat{\theta}_{PICenter}$ (0.0000, 0.0032)	2
East	$\hat{\theta}_{PIEast}$ = 0.5957	$\hat{\theta}_{PIEast}$ (0.0118, 30.0425)	11
Far North	$\hat{\theta}_{PI/Far\ North}$ =360.4391	$\hat{\theta}_{PI\ Far\ North}$ (22.4, 5777.9)	5
Littoral	$\hat{\theta}_{PI/Littoral}$ =0.4631	$\hat{\theta}_{PI/Littoral}$ (0.0092, 23.3469)	9
North	$\hat{\theta}_{PI/North}$ = 0.5045	$\hat{\theta}_{PI\ North}$ (0.4490, 0.5670)	10
North-West	$\hat{\theta}_{PI/North-West}$ = 0.3667	$\hat{\theta}_{North-West}$ (0.3073, 0.4375)	8
West	$\hat{\theta}_{PI/West}$ =1.6131	$\hat{\theta}_{PI\ West}$ (1.4994, 1.7354)	12

Sources: Authors' calculations based on survey data of ECAM3 2007

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Table 4(Part-II). Typology of corrupt Regions and Relationship between (P) an (I) given (R) in the Cameroon Educational System.

Region	*Odds Ratio ($\hat{\theta}_{PI/R}$)*	*Confidence interval of 95% of the odds ratio $(\hat{\theta}_{PI/R})$*	*Rang*
South	$\hat{\theta}_{PISouth}$ = 3.0625	$\hat{\theta}_{PI\ South}$ (2.7139, 3.4560)	7
South-West	$\hat{\theta}_{PI\ South\text{-}West}$ = 0.0008	$\hat{\theta}_{PI\ South\text{-}West}$ (0.000, 0.0124)	4

Sources: Authors' calculations based on survey data of ECAM3 2007

Thus, in the Adamawa region, there are 10,000 times more chances that the corrupt act being initiated by the Head of the school than by his colleagues; the chance is 5000 times higher in the Central region and 1,250 times higher in the South-West. In other regions, the extent of this initiative is much lower for about 6.67, 2.77, 2.17, 2 and 1.67 for the Douala, North-West, Littoral, North, and East regions respectively. Let's note however that in the calculation of the relative risks, there was virtually no difference between the East and Littoral regions for the taking of initiative for the corrupt act by the different categories of the teaching staff. The odds ratios which allow us to highlight this difference (in favor of school leaders) quite show that in these regions, the chances are 2.17 times higher in the Littoral where as they are only 1.67 more higher in the East whether the corrupt act being initiated by the Head of the school or by his colleagues. At the contrary, in the Yaounde, Far North, South and West regions, the corrupt act is more initiated by colleagues with odds ratios of 1449.8, 360.43, 3, and 1.61 respectively.

The table below shows some basic statistics; the Mantel-Haenszel statistics shows the marginal odds ratio which in its estimate ignores the control variable which is the region. It provides a general estimate of the odds ratio of all observations. This ratio stipulates that in general, the corrupt act is more initiated by the educational staff than by applicants (which corroborates with the analysis of the conditional odds ratios); however, as some conditional odds ratios have revealed, the initiative for the corrupt act is higher (1.78 times) for school leaders than for their colleagues. The Cochran-Mantel-Haenszel statistics on its part is used to test the hypothesis that the taking of initiative for the corrupt act and the leader who received the non-regulatory fees are conditionally independent given the region. Through the probability column (p-value <.0001), we reject the hypothesis of independence to conclude that whatever the region, these two variables are related. Finally, the Breslow-Day statistics that tests the hypothesis of homogeneity of the various conditional odds ratios has a probability (p-value) <.0001; thus, odds ratios are different from one region to another.

Table 5. Basic statistics on the general odds ratios estimate

Statistics	*Value*	*Probability / IC*
Cochran-Mantel-Haenszel	CMH = 1120.9635	<.0001
Mantel-Haenszel	$\hat{\theta}_{PI}$ = 0.5659	$\hat{\theta}_{PI}$ (0.5462, 0.5862)
Breslow-Day	CHISQUARE = 6664.4448	<.0001

Sources: Authors' calculations based on survey data of ECAM3 2007

The Taking of Initiative by Applicants

The table below conceptualizes the initiative taken for the corrupt act by applicants

Table 6. Explanatory Factors for the taking of initiative for the corrupt act by applicants

										Payment of These Fees is a Proper Initiative	
										Yes	*No*
Place of residence	Urban	Gender of household Head	Male	Living standard	Poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees during registration	Yes	616	6172
								Total		616	6172
							40 years and above	Have paid non-regulatory fees	Yes		703
								Total			703
					Non poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	10024	66217
								Total		10024	66217
							40 years and above	Have paid non-regulatory fees	Yes	848	2319
								Total		848	2319
			Female	Living standard	Poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes		293
								Total			293
							40 years and above	Have paid non-regulatory fees	Yes		1418
								Total			1418

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				Non poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	3252	15173
							Total		3252	15173
						40 years and above	Have paid non-regulatory fees	Yes	892	3145
							Total		892	3145
Rural	Gender of household Head	Male	Living standard	Poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	850	5861
							Total		850	5861
				Non poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	1881	9052
							Total		1881	9052
						40 years and above	Have paid non-regulatory fees	Yes	254	3620
							Total		254	3620
		Female	Living standard	Poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	219	552
							Total		219	552
				Non poor	Age of household Head	Less than 39 years	Have paid non-regulatory fees	Yes	439	4622
							Total		439	4622
						40 years and above	Have paid non-regulatory fees	Yes		591
							Total			591

Sources: Authors' conception based on survey data of ECAM3 2007

It is based on this table that equation 8 was estimated and which results are presented in the table below.

Table 7. Estimate results of equation (8)*

The GENMOD Procedure: Poisson Regression
(Response Variable: Initiative taking)

Model Information

Criteria For Assessing Goodness Of Fit

Criterion	DF	Value	Value/DF
Deviance	30	75735.5171	2524.5172
Scaled Deviance	30	75735.5171	2524.5172
Pearson Chi-Square	30	119749.0295	3991.6343
Scaled Pearson X2	30	119749.0295	3991.6343
Log Likelihood		-57139.7585	

LR Statistics For Type 3 Analysis

Source	DF	Chi-Square	Pr > ChiSq
milieu	1	22.39	<.0001
sex	1	35.60	<.0001
level	1	48.57	<.0001
age	1	306.63	<.0001
activity	1	0.95	0.3289

Analysis Of Parameter Estimates

Parameter		DF	Estimate	Standard Error	Wald 95% Confidence Limits		Chi-Square	Pr > ChiSq
Intercept		1	-1.6342	0.0288	-1.6907	-1.5778	3216.79	<.0001
milieu	urban	1	0.1081	0.0230	0.0630	0.1531	22.12	<.0001
sex	male	1	-0.1046	0.0174	-0.1387	-0.0705	36.17	<.0001
level	poor	1	-0.1714	0.0249	-0.2202	-0.1226	47.39	<.0001
age	less than 39 years	1	-0.3829	0.0214	-0.4247	-0.3410	321.32	<.0001
activity	inactive	1	0.0208	0.0213	-0.0209	0.0625	0.96	0.3277

Sources: Authors' calculations based on data in Table No. 6

This table gives us information on the reliability of the model, the importance of the main effects through likelihood maximum ratios statistics of type 3, and the coefficients of the model. The analysis of type 3 shows that accept the main effect activity which is not significant, all other variables is highly significant. In other words, the place of residence of the individual, his sex, his living standard and age play an important role in the taking of initiative for the corrupt act. Thus, the estimated parameters of the model reveal that the taking of initiative for the corrupt act is more pronounced in urban than rural areas, weaker for men than for women, also weaker among the poor than among the non-poor as well as among the younger people.

* The variable region was not included in the estimate of Equation 8 because the results in Table 7 show that whatever the region, applicants would take less initiative than leaders. An estimate including all regions has thus been made to replace an estimate containing only regions where the magnitude of the initiative taken by applicants would have been the greatest.

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Socio-demographic characteristics play an important role in the taking of initiative for corrupt acts. Indeed, our results show that urban people are 1.114 times (approximately 11%) more likely to initiate corrupt acts than rural people, and the Poor 0.682 times more likely than the Rich (that is, the rich are about 1.46 times more likely to initiate the corrupt act than the Poor). These two results confirm the theoretical analyses. In the first case, city dwellers are more likely to pay bribes because they are more in touch with the administration than the rural people, and in the second case, a person is even more faced to corruption when he is rich because not only he has income to pay bribes, but in addition, he may for this reason be chosen by the official. In contrast, there are two results: the fact that young people are less likely to take initiative for the corrupt act than the old and men less than women, reject the theoretical analyzes. But, they are explained by the fact that comparing to young people and women, leaders and other school Principals take more initiative for corrupt acts than when they faced with the old and men. We cannot conclude as indicated by the theory that workers are more corrupt than the jobless because the former have almost the same opportunities to initiate corrupt acts than the second.

CONCLUSION AND RECOMMENDATIONS

The purpose of this study was to identify the persons who take the initiative for corrupt acts during students 'registrations in public institutions of the twelve Cameroonian regions and why? We started from the idea that among suppliers, the behavior of the initiative taken can be understood through odds ratios, but also through the relative risk and differences in proportions and that, among applicants, it can be understood by a Poisson distribution through a log-linear model.

The empirical analysis revealed that across the country, school leaders are those who take the initiative for more corrupt acts than applicants. But the category of these leaders is not the same from one region to another. In fact, school leaders take more initiative for corrupt acts in six of the twelve regions namely Douala, Adamawa, Center, South, North, North-West and South-West. In Douala for example, estimates show that among school authorities, the initiative for corrupt acts is about 20% higher among Principals than among their collaborators. Although providers are usually the first to take the initiative, it happens that applicants take too. In particular, it happens that the poor take less initiative than the rich as far as corrupt acts are concerned. The reasons given indirectly by the providers to justify the requirement of improper payments include; the lack of benches in classrooms, the late arrival of the "minimum package" (provision of didactic materials), the limited number of seats. To overcome these shortcomings, school leaders require that parents fulfill irregular payments. The empirical analysis reveals that the above-mentioned shortages are often artificial because even in areas where such deficits are absent (Center, Adamawa, East, North-West and West), school officials collect bribes from students' parents.

To deal with corruption during students' registration, it is imperative that control measures are taken both by the providers of registration services and by the applicants (Rose Ackerman, 1998).In fact, these measures aim at reducing the discretionary and monopoly powers enjoyed by schools Principals as well as information asymmetries that allows others leaders to abuse students' parents. From the supply side, one of the measures would be the multiplication of public schools by the State: in fact, the proliferation of these institutions might have some bearing patterns concerning the taking of initiative for corrupt actions such as the increase of classrooms and therefore benches, or the decrease of the number of students per classroom. The ability to choose between several institutions may also reduce the monopoly power of school leaders. But this measure can be limited by budgetary constraints.

Because of the lack of financial resources, it would be difficult to create and build other public institutions. In the absence of public schools, profit-making private schools may be an alternative for parents. But these schools are expensive and are usually beyond the reach of some less wealthy parents. On the contrary, although few in number, private religious schools often offer more affordable prices. Public authorities should encourage the multiplication of these schools so that they are alternatives to public schools. From the demand side, parents and students should be sensitized about the evils of corruption in the educational field. But this awareness should primarily target the users who often take the initiative to pay bribes. It is important to go beyond this awareness in some cases by taking repressive measures for actors who initiate corrupt actions.

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Appendix-A

Table A_1. Motives for initiative taking

Motives / *Cameroonian Regions*	*School Supplies Required*	*School Equipment Required*	*Limited Seats*	*Parents Came Late*	*The Student has a Bad File*	*Total*
Douala		7547 (50.58%)	4346 (29.13%)	1149 (7.70%)	1878 (12.59%)	14920
Yaounde			10666 (93.45%)		747 (6.55%)	11413
Adamaoua		309 (19.69%)	829 (52.83%)		431 (27.47%)	1569
Center		2199 (41.60%)	2760 (52.21%)		327 (6%)	5286
East			322 (21.77%)	280 (18.93%)	877 (59.30%)	1479
Far North		2340 (51.26%)			2225 (48.74%)	4565
Littoral	695 (16.48%)	1522 (36.10%)	1134 (26.90%)		865 (20.52%)	4216
North		4109 (52.74%)	3682 (47.26%)			7791
North-West	214 (4.74%)	1983 (43.88%)	1522 (33.68%)	406 (8.98%)	394 (8.72%)	4519
West	3541 (33.56%)	987 (9.36%)	1593 (15.10%)	2013 (19.08%)	2416 (22.90%)	10550
South			1170 (30.64%)	778 (20.37%)	1871 (48.99%)	3819
South-West			1170 (30.64%)	778 (20.37%)	1871 (48.99%)	3819
Total	*5302 (7.28%)*	*21250 (29.17%)*	*28278 (38.82%)*	*4731 (6.49%)*	*13289 (18.24%)*	*72850 (100%)*

Sources: Authors' calculations based on survey data of ECAM3

Appendix-B

Table B_1. Main difficulties faced in removing the minimum package following the survey area *(%)*

Difficulties	*Yaounde*	*Douala*	*Adamawa*	*Center*	*East*	*Far North*	*Littoral*	*North*	*North-West*	*West*	*South*	*South-West*	*Urban*	*All Rural*	*Total*
Transportation problem or isolation	21,1	46,2	70,4	64,1	69,4	75,9	52,2	80,6	72,2	4,2	85,7	63,6	32,7	66,1	61,2
Late and incomplete arrival	68,4	69,2	44,4	69,2	50,0	37,9	52,2	45,2	38,9	87,5	50,0	38,6	75,5	48,3	52,2
Insufficiency of conveying fees	10,5	0,0	0,0	0,0	16,7	0,0	0,0	6,5	16,7	8,3	0,0	27,3	4,1	9,8	9,0
Insecurity	5,3	0,0	0,0	7,7	0,0	0,0	0,0	0,0	0,0	0,0	0,0	2,3	2,0	1,4	1,5
Corruption	0,0	0,0	18,5	0,0	0,0	0,0	0,0	0,0	5,6	0,0	0,0	9,1	4,1	3,1	3,3
In adaptation of some elements	0,0	15,4	3,7	0,0	8,3	6,9	8,7	3,2	0,0	8,3	0,0	13,6	4,1	5,9	5,7

Source: PETS 2004/2010

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Appendix-C

Table C_1. Average number of seats per secondary school in the twelve regions

Survey Zone	*Urban*		*Rural*		*Total*	
	Total No. of Students Registered	*No. of Seats on Benches*	*Total No. of Students Registered*	*No. of Seats on Benches*	*Total No. of Students Registered*	*No. of Seats on Benches*
Yaounde	1816,3	1387,0			1816,3	1387,0
Douala	2109,8	1860,7			2109,8	1860,7
Center	966,0	964,1	411,6	648,1	616,9	761,8
Adamawa	612,0	314,7	587,3	765,5	589,4	726,9
East	1246,6	1240,1	447,0	549,3	713,5	779,6
Far North	948,1	881,0	563,3	415,9	705,8	588,2
Littoral	1125,1	1018,2	471,0	479,4	713,9	679,5
North	995,3	1050,8	546,6	481,5	795,9	788,0
North-West	1114,8	1425,6	620,7	584,2	747,8	782,1
West	1833,9	1855,6	625,2	648,3	1174,6	1197,1
Sud	779,1	761,9	390,2	380,9	597,6	577,5
South-West	886,8	844,4	520,9	502,6	615,0	585,4
All	1407,9	1286,6	531,6	566,6	929	885,0

Sources: PETS 2004/2010