



THE EFFECTS OF CORRUPTION ON PUBLIC SCHOOLS EXAMINATIONS IN CAMEROON

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ABSTRACT

This study highlights the various corrupt practices between the applicants and educational staff during examinations and competitive exams in order to succeed in the Cameroon educational system. An odds ratios Analysis from the supply side revealed that in most of the regions studied, the magnitude of the payment of bribes to school leaders for success (Director / Principal) as compared to that of their employees is about 2.62 times higher. In the same vein, our estimates show that in about 70.8% of cases, the leaders of these institutions are the most needed in recommending candidates for their success in various exams. We highlighted from the demand side the characteristics of examinees through a Bernoulli distribution; it appears that the non-poor, women, the youngest and workers are the categories of people who are most vulnerable to corrupt practices.

Keywords: Educational Evaluation, Odds Ratio, School Examination, Bernoulli Distribution, Cameroon.

1. INTRODUCTION

Education is a fundamental human right and an engine of development, both personal, economic and social. It is seen in many countries in the world as essential to a better future, and provides the tools people need to ensure the sustainability of their livelihoods, live in dignity and contribute to social progress (Transparency international, 2013). Education is based on meritocracy. Also, it offers equal opportunity to all candidates for key positions in the company, selecting those that best meet the evaluation criteria. Unfortunately, in many countries of the world, especially the poorest where corruption is a norm, the evaluation criteria are no longer taken into account, to the extent that individuals without merit are able to succeed dishonestly.

According to the World Report on Corruption in Education (Transparency International 2013), "Corruption is a disease that causes lasting damages to all members of the society; it is one of the most important hindrances to the achievement

of the Millennium Development Goals (MDGs) and, therefore, should be strongly resisted." Gupta and al. (2002) found that corruption always leads to higher costs and lower quality of education, including examinations.

To address this issue, several studies have been conducted over the past two decades by various institutions (Transparency International, World Bank, International Monetary Fund, universities). These researchers used the general analysis of corruption practices in the public sector, based on the popular definition that "corruption is the use of public resources for private purposes." In this context, some authors like Mauro (1998), Tanzi and Davoodi (1997) examined the practices of high corruption involving senior policy makers as well as huge financial amounts. For instance, Mauro (1998) found that corruption reduces expenditure on education, including those related to the organization of exams, because they do not easily give themselves in corrupt practices which are profitable to officials in charge of the allocation of the overall amount of the budget to the various sectors of the economy. Other authors such as Karim (2004) and Chaudury *et al.* (2003) studied the practices of little corruption with small amounts that involve officials at all levels of the educational system. For example, in the case of Bangladesh, Karim (2004) found that more than 96% of students paid illegal fees in order to succeed in their first term examinations. These works are important because they have contributed in improving the strategies to fight against corruption. In particular, they have helped to know that by institutionalizing people's right to information on the activities of civil servants in the educational sector, they will be forced to improve their behaviors. But they are limited because of lack of knowledge related to factors behind this phenomenon, especially small corruption. If the theoretical literature offers a detailed reading grid (Mocan, 2004; Lui, 1985; Kaufman and Wei, 1999) of specific situations, the empirical literature, nevertheless, remains limited.

An inquiry on corruption conducted by the National Institute of Statistics in Cameroon (INS) focused on households and individuals¹ (2007). The Institute used only the part on households to determine the regions of Cameroon where they pay non-regulatory fees or ask for the intervention of VIPs to pass exams (2011). This study is important because it shows that the percentage of people who wrote an exam during the last 12 months before the survey was 3.1%. Referring to the last examination successfully accomplished, 3.3% of candidates said they gave money or received the intervention of an authority to succeed. This practice is present in 50% of the 12 regions of the country. However, it is more declared in the Littoral (except Douala), the Far North and in Yaounde, where the ratios are 16%, 9% and 6.4% respectively. The study also revealed that this practice affects only the rich. One of the shortcomings of this investigation is that it did not inform us, from the supply side, about the agents who receive non-regulatory fees. Are they school principals or their employees? Moreover, from the demand side, there is no information related to the characteristics of households that paid bribes. It is true we know they are not poor. But we would have also liked to know if they were women or men. This article aims to fill this gap, by exploring the micro-economic mechanisms at the origin of small

¹ 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 and PETS2 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.

corruption in the Cameroon educational sector. Contrary to the National Institute of Statistics (INS) who used part of the investigation on households, we will rather use the part relating to individuals. So, we will focus on individuals that collect non-regulatory fees for candidates to pass their exams in public schools. The theoretical literature distinguishes the public servant who enjoys a monopoly situation, and the one who does not (Shleifer and Vishny, 1993). In contrast to the latter, the former can easily collect bribes because he or she is unavoidable.

In Cameroon, the National Commission for the Fight against Corruption (CONAC) gave mitigated results as far the fight against corruption in official examinations and competitive exams is concerned. This is partly due to the fact that they ignore the identity of the actors behind this issue. The purpose of this study is twofold: first and foremost, it helps to identify people who, on the side of the educational institutions, receive more bribes for success during examinations or competitive exams. Secondly, it will seek to identify from the demand side, the characteristics of examinees that are most vulnerable to this phenomenon. In both cases, we will highlight areas where the phenomenon is most widely practiced.

The following part of this study is organized as follows: the second section provides a brief review of the literature on corruption in examinations. The third section presents how examinations/competitive exams are practiced in Cameroon, and factors that expose this practice to corruption. Section four models the behavior of those who receive bribes, as well as that of those who pay them. Section five presents the results of estimates and discusses them and section six concludes.

2. LITERATURE REVIEW

According to the economic theory, an individual weighs the costs and benefits of acting dishonestly, and compared them with the costs and benefits of acting honestly, and then, chooses the path that maximizes his own interests (Jaen and Paravisini, 2001). Also, the economic agent chooses to corrupt when this act is advantageous to him. The initiative for such an action can either come from the agent, the user or the both.

However, in the field of education, the ability of the agent to take initiative for corrupt action would be more important than that of the user in so far as the State agent simultaneously has the monopoly and discretion power on applicants and on decisions he takes, and less responsibility for results obtained (Klitgaard, 1989).

Monopoly creates opportunities for corruption by limiting the ability of citizens to choose other providers of educational services. If the government is the only provider of educational services, students and their parents may be forced to pay bribes for access.

Discretion refers to the autonomy enjoyed by a State official in decision making. Teachers or lecturers can abuse their power by selling information on examinations, soliciting bribes in exchange of good grades (Bettina Meier, 2013). Having a discretion power without adequate control can create opportunities for corruption. Responsibility can be considered as the requirement that the educational system managers are accountable for the results they get, and failure to do it creates opportunities for corruption. Klitgaard's (1989) equation thus reinforces the idea that corruption would be passive (Dommel, 2003).

The close links between social and academic corruption can promote initiative taking. Companies whose meritocratic standards are low generally favor the practices of academic corruption. For example, in these societies, a person can obtain a diploma or a promotion simply because he /she belongs to a certain family without this causing any protest (Michelsen Institute, 2006): that's the case in Cameroon where the success

in some competitive exams namely those related to the public service obeys at 90% to the intervention of an authority (INS, 2011). Good students who are not fathered fail.

Cultural aspects can also favor the taking of initiative for corrupt actions. In fact, in many countries, parents and students make gifts for teachers as a token of their gratitude. This poses any problem as long as no benefit is expected in return. But this practice can turn into extortion and parents who are not rich may feel that their children do not receive proper education or fail their exams because they cannot afford to make gifts or to pay bribes to teachers or lecturers (Bettina Meier, 2013).

Inadequate and irregular wages or accumulated debts often pushed teachers to seek additional income. The teacher can collect bribes to give a good grade because his salary alone does not allow him to make ends meet (Vian 2006). Salary increase is often used as a strategy aim at reducing the financial pressure that leads to corruption. Unfortunately, it is not enough to increase salary to end corruption. Increase of wages reduces the attraction to bribes without deleting them. As a matter of fact, a high salary may lead to the cancellation or reduction of bribes requested by a teacher who was in need; however, greed could push the teacher to collect more (Rose Ackerman, 1998).

Corruption adversely affects the principles of merit, fairness and impartiality where education is grounded because some tax payers or consumers of educational services will receive preferential treatment. Those in power and owners of resources try to capture the benefits of education for themselves and their families. Elites tend to reproduce existing power relations through education, often using corrupt practices (Transparency International, 2013).

According to multiple equilibria Models, the expected gain of an agent depends on the number of agents he believed to be corrupt. In other words, if all teachers are upright, it brings nothing to be corrupt. However, if all teachers are corrupt, honesty does not pay (Cartier Bresson, 1998). In systems where rents seeking offers better opportunities, allocation of talents namely for well-trained individuals who have provided significant efforts to pass their exams, will experience an infection, and members of the elite will turn to non-productive activities, thus determining a reduction of social surplus and growth (Shleifer and Vishny, 1993).

3. EXAMINATION PRACTICE AND CORRUPTION IN CAMEROON

Exam is a test or series of tests to determine the ability to enter a school, get a degree or title. When there is competition among various candidates examined, it is called competitive exam. In Cameroon, several exams are held each year at the primary, secondary and tertiary level. In the first case, it is the First School Living Certificate (CEPE), in the second case, the GCE Ordinary Level (BEPC) and the GCE Advanced Level, and in the third case, the Higher National Diploma (BTS), the Bachelor's Degree, Master's and Doctorate. Competitive exams are primarily organized for entry into high institutions like the National School of Administration and Magistracy (ENAM), the Cameroon Military Academy (EMIA), the Higher National School of Education (ENS), just to name the few. The problem that arises is whether these exams are conducted to ensure meritocracy. To answer this question, we will first present the modes of conducting these exams, and their ability to promote meritocracy. Then, we will try to find out how these modes are applied.

3.1 How Exams Are Conducted

There are mainly three ways through which exams are conducted in Cameroun: the written, the oral and the study of candidates' credentials. Whatever the mode selected, the institution that organizes the examination requires that each candidate submits an application which includes among others, a photocopy of the birth certificate, a photocopy of the National Identity Card and transcripts obtained during the academic curriculum. These credentials reveal previous academic performances of the candidate. All these files must be legalized by the competent authorities. During examinations, examiners use these documents to make sure that the person competing is actually the real candidate.

The written exam is a series of tests that the candidate faces in texts. Candidates write exams on anonymous sheets. The anonymity system is such that the examiner that marks the scripts cannot identify candidates that are objectively graded. The oral exam is a series of tests that the candidate addresses in front of the examiner. Therefore, the candidate is identified. The encounter between him and the candidate introduces a subjective dimension because the applicant may be graded not according to his or her performances, but to his or her identity.

The files review is to examine the main elements therein, and classify candidates according to their past performances. For example, based on the Bachelor's Degree transcripts, candidates can be classified according to grades obtained: very good, good, fair and average. Such a classification is based on merit. But, it's still quite biased because the examiner can identify the names of candidates. From that point, they can be classified not according to their performances, but their identity. The problem is how these modes are practiced in Cameroon?

3.2 Corruption Forms And Evolution Of Modes Of Examinations Conduct

Before the 1990s, oral and written examinations were the most practiced modes of exams in the Cameroon educational system. In those days, to pass an examination or competitive exam (ORDINARY LEVEL, ADVANCED LEVEL, BACHELOR'S DEGREE, MASTER'S, National School of Administration and Magistracy, etc.), the candidate must first pass the written part and then the oral phase. Since the early 1990s, someone who simply succeeds in writing exam is declared to be definitely admitted (ORDINARY LEVEL, ADVANCED LEVEL and BACHELOR'S DEGREE). Oral no longer exists in ORDINARY LEVEL, ADVANCED LEVEL and BACHELOR'S DEGREE.

As a matter of fact, in the early 1990s, successive corruption scandals in the form of bribes or recommendations that have marked recent examinations have prompted the governmental authorities to remove the oral part². The removal of this phase in these exams calls at least for two reflections. First, we find that corruption also affects the written part. Indeed, in some recruitments, the phenomenon of recommendation or fathering of candidates (INS, 2011) continues to be practiced. Examiners take into account these recommendations to publish the results. Also, the admitted are not always the best. The removal of the oral part of exams as a control measure against corruption has nevertheless reduced power abuses in the organization

²However, the size of bribes is not the same everywhere. A distinction should be made between examinations or competitive exams that lead to training with guaranteed employment (ENAM (National School of Administration and Magistracy), EMIA (Cameroon Military Academy), ENS (High National School of Education), and those where such a guarantee does not exist (ESSEC (Advanced School of Economics and Commerce), IUT (University Institute of Technology), etc). In the first case, the amounts of bribes are higher than the second.

of some official exams namely at the secondary level (ORDINARY, ADVANCED), but without canceling them. At the university level, notably for admission into high schools and in some academic programs (MASTER’S 1, MASTER’S 2, PHD), recommendation practice continues to prevent access to the best. Secondly, by eliminating the oral, governmental authorities thought eradicating the phenomenon. However, there is no change. Cancelling it did not have the desired effects because corruption continues to be practiced in exams; Instead, an evaluation method was removed, which in the absence of corruption, gave to the system an added value. It is therefore necessary to look for the root causes of this phenomenon and address them.

4. METHODOLOGY AND MODELISATION FOR CORRUPT CONTROL

We would like to tackle the taking of initiative for the corrupt action for success in the Cameroon educational system. This is to conceptualize the corrupt behavior of suppliers (Schools managers) and applicants (users). In other words, to propose an explanatory diagram of their behavior. The taking of initiative for the corrupt act from the supply side will be tackled through odds ratios but also, through the relative risk and differences in proportions. For each region, we built the following 2 x 2 contingency table:

Table N°1 : Joint And Conditional Distributions

| official who perceived Bribes (P) | Payment Initiative (I) | |
|--------------------------------------|-------------------------------|-------------------------------|
| | No | Yes |
| Head master/Director | π_{11} (π_{111}) | π_{12} (π_{211}) |
| Colleague/Collaborator | π_{21} (π_{112}) | π_{22} (π_{212}) |

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 :

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

The numerator and denominator of the first term of this equation represent the relative risk compared to the responses of the initiative for payment, that is, 'no' or 'yes'. Thus, 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, 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.

The payment of bribes by the applicant to succeed in his exam may be either a 'success' or a 'failure', provided that the act committed by the applicant i is independent to that committed by the applicant j . Thus, in noting these two

possibilities by 1 or 0 respectively, the corrupt behavior of applicants can be captured by a Bernoulli distribution (random binary variables) that will allow us to easily identify the probabilities $P(X = 1) = \pi$ and $P(X = 0) = 1 - \pi$ of the two events for which $\pi = E(X)$.

So, 'the payments of bribes by applicants to succeed' are therefore seen to be random and independent of each other, the various occurrences of how events appear could be captured through a Bernoulli distribution. If the taking of initiative for the corrupt action is a choice of the economic agent (which can be either a supplier or an applicant for service) being placed on the demand side, this initiative can be captured not only through the random component of a generalized linear model (GLM)³, this thanks to a Bernoulli distribution of the following probability density:

$$g(x_i; \pi_i) = \pi_i^{x_i} (1 - \pi_i)^{1-x_i} = (1 - \pi_i) \left[\frac{\pi_i}{(1 - \pi_i)} \right]^{x_i} = (1 - \pi_i) \exp \left[x_i \log \left(\frac{\pi_i}{1 - \pi_i} \right) \right]$$

The last expression of this equation is only the general expression of the probability distributions which belong to the family of the distributions of the exponential form for $x_i = 0$ and 1.

$$w(\pi) = \log \left[\frac{\pi}{(1 - \pi)} \right]$$

The natural parameter $w(\pi)$, the log of odds of answer 1 (success or has paid for success) is simply the logit of π . The response variable (payment of bribes by applicants for success) here follows a Bernoulli distribution, the mean of the parameter π of the distribution being related to the linear predictor by the following equation used in our estimates:

$$w(\pi_i) = \sum_j \beta_j x_{ij} \dots \dots \dots (2) \quad i = 1, \dots, N$$

4.1 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 variables on region, place of residence, gender, standard of living, age and employment status. Thus, for each observation, we have the following relationship:

$$\begin{aligned} & \log(m_i) \\ & = \beta_0 \\ & + \sum_j region_1(j) \beta_j + \sum_j milieu_1(j) \beta_j + \sum_j gender_1(j) \beta_j + \sum_j level_1(j) \beta_j + \sum_j age_1(j) \beta_j + \sum_j activity_1(j) \beta_j \dots (8) \end{aligned}$$

³ These components include: the linear component, the random component and the link describing 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 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)

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

$$X_{ij} = \begin{cases} 1 & \text{if } x = j \\ 0 & \text{if } x \neq j \end{cases}$$

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 and Lazlo, 2005; 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).

5. DISCUSSIONS

The results of the empirical analysis of payment of bribes to success in exams are presented in two stages: the supply side and the demand side. The corrupt act usually takes place between the corrupted and the corruptor. So, we will initially establish the relationship between the educational staff who request or not for non-regulatory fees for applicants to pass their exams, and the region in which the corrupt act takes place. Secondly, we will focus on the demand side (those who pay for success) to highlight some socio-demographic characteristics besides those of users who pay bribes to pass exams.

5.1 Why Do Some Managers Take More Initiatives Than Others As Far As Corrupt Acts Are Concerned?

The table below shows the frequencies and proportions from which the various odds ratios were estimated. It establishes the relationship between the educational staff who receives bribes (Head of a school or someone else), the perception of bribes by the staff for success or not, and the region in which the corrupt act occurs. We have two independent variables namely the region and the type of manager who receives bribes. The dependent variable here is the acceptance or rejection of the examinee's bribes for success; we can then analyze the various corrupt behaviors between different actors (educational staff and examinees) from each region, the latter variable being also seen as a control variable. The table also shows for each cell the proportion of the category of personnel to whom the bribe is paid for success or not. The last column gives the magnitude of the difference in proportion of the payment of bribes for success or not between applicants and the educational staff. Our first results show that in 30% of cases, examinees pay bribes to the educational staff to pass their exams.

Table n°2: Relationship between (P) and (I) given (R)

| Region ⁴ (R) | Manager who has received bribe (P) | Perception of bribe for success (I) | | Magnitude ⁵ difference (in%) |
|----------------------------|--|-------------------------------------|---------------|--|
| | | Yes | No | |
| Douala | Head Master/Director | 0,5 (50) | 0,5 (50) | |
| | Others | 0,5 (0,03) | 1616,5(99,97) | |
| Total | | 1 (0,06) | 1617(99,94) | 99,88 |
| Center | Head Master/Director | 0,5 (0,04) | 1360,5(99,96) | |
| | Others | 0,5 (50) | 0,5(50) | |
| Total | | 1(0,07) | 1361(99,93) | 99,86 |
| East | Head Master/Director | 0,5 (50) | 0,5 (50) | |
| | Others | 0,5(0,18) | 280,5(99,82) | |
| Total | | 1(0,35) | 281(99,65) | 99,3 |
| Far North | Head Master/Director | 606,5(52,33) | 552,5(47,67) | |
| | Others | 0,5(50) | 0,5(50) | |
| Total | | 607(53,32) | 553(47,68) | (5,64)* |
| Littoral | Head Master/Director | 378,5(99,87) | 0,5(0,13) | |
| | Others | 378,5(99,87) | 0,5(0,13) | |
| Total | | 757(99,86) | 1(0,14) | (99,72)* |
| North | Head Master/Director | 0,5(0,02) | 2457,5(99,98) | |
| | Others | 0,5(50) | 0,5(50) | |
| Total | | 1(0,04) | 2458(99,96) | (99,92) |
| North West | Head Master/Director | 207,5(99,76) | 0,5(0,24) | |
| | Others | 0,5(0,30) | 163,5(99,70) | |
| Total | | 208(60) | 164(40) | (20)* |
| West | Head Master/Director | 0,5(50) | 0,5(50) | |
| | Others | 0,5(0,16) | 315,5(99,84) | |
| Total | | 1(0,31) | 316(99,69) | 99,38 |
| South | Head Master/Director | 0,5(0,20) | 254,5(99,80) | |
| | Others | 213,5(33,36) | 426,5(66,64) | |
| Total | | 214(24) | 681(76) | 52 |
| South West | Head Master/Director | 0,5(50) | 0,5(50) | |
| | Others | 0,5(0,07) | 709,5(99,93) | |
| Total | | 1(0,14) | 710(99,86) | 99,72 |

Source: Our estimates based on ECAM3 Data

In view of this table, we find that in 50% of the regions studied, the extent of the payment of bribes to officials of institutions (Director or Principal) for success is greater. These are the Douala, East, Far North, North-West and West regions with a predominance in the North-West region where the payment of bribes for success is 99,46 (99.76 - 0.30) times higher among Heads of schools (Principal or Director) than among the rest of the staff for a relative risk of about 327. In other words, the proportion of school directors to whom bribes are paid for success is about 327 times higher in this region than in that of the personnel of the school. 30% of the regions have situations where the magnitude of bribes paid to the staff of the institution to succeed in exams is greater: there are the Central, Southern and Northern regions.

⁴ Certainly, the National Institute for Statistics' (INS) inquiry covers twelve regions namely the Center, South, Littoral, North-West, South-West, West, Far North, North, East, Douala, Yaounde and Adamawa. However, we have only worked on the first ten regions; the survey didn't provide us with information about the last two regions compared to the study.

⁵ A star means the greatest magnitude of the perception of the non-regulatory fees by the managers to give success to candidates during exams.

Two of the 10 regions studied namely the Littoral and the Far North have but situations where the extent of non-regulatory fees paid by applicants for success is virtually not different between the two categories of actors. The table below gives us the different relative risks by region. Thus, a relative risk superior to 1 indicates that the proportion of principals to whom bribes are paid is higher than that of the staff, and a relative risk inferior to 1 simply means the opposite. However, a relative risk of 1 just means that regardless of the type of personnel (Principal or someone else), bribes are paid by examinees for their success.

Table n°3: Payment of bribes for success in terms of relative risk by region

| Region (R) | Taking non-regulatory fees for success ⁶ | |
|---------------|---|--------|
| | Relative risk | Sample |
| Douala | 1617 | 1616 |
| East | 281 | 280 |
| Far North | 1.0466 | 1158 |
| Littoral | 1 | 756 |
| North | 0.0004* | 2457 |
| West | 316 | 315 |
| South | 0.006* | 893 |
| Center | 0.0007* | 1360 |
| North West | 327.21 | 370 |
| South West | 710 | 709 |
| Total | | 9914 |

Source: Our estimates based on data in table n°2

Table 4 below shows the odds ratios ($\hat{\theta}_{PIIR}$) reflecting the relationship between the three variables. These odds ratios obtained from the data in Table 2 help to better define the extent of the corrupt act while highlighting previous analyzes: thus, an odd ratio $\hat{\theta}_{PIIR} > 1$ will simply implies that for a given region in the educational staff, the probability to perceive bribes from the examinees for their success will be higher for principals than for their collaborators; and an odds ratio $\hat{\theta}_{PIIR} < 1$ will have an opposite effect. Let's note that the more $\hat{\theta}_{PIIR}$ will be closer to zero, the higher the magnitude of the perception of bribes by the personnel as compared to that of the principals. Thus, we can make from the table above a typology of bribes payment for success by region, according to the different categories of the teaching staff. We notice a first class of regions where chances of collecting bribes by Head masters are the greatest. Most importantly, these are the North-West, Douala, South-West, West and East regions. On the other side, we rather observe regions where chances of the staff are the highest; and most importantly, the North, Center and South. Two regions namely the Littoral and the Far North are of the third class where applicants, regardless of their socio-professional category, pay bribes to pass exams.

The table 5 gives us through the Mantel-Haenszel statistic, a general estimate of the odds ratio of all observations. This ratio stipulates that in general, chances are about 2.62 times higher that applicants pay bribes to principals than to other people in the institution to pass exams, independently of the region. The Cochran-Mantel-Hansel's statistics on its part is used to test the hypothesis that the payment of bribes by examinees for success and the type of staff (managers or others) who received bribes 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 statistic that tests

⁶The presence of a star means that in the region concerned, the proportion of non-officials who take non-regulatory fees from students to make them succeed in exams is greater than that of officials (Director/ Head master) in schools.

the hypothesis of homogeneity of the various conditional odds ratios has a probability (p-value) <.0001; odds ratios are therefore different from one region to another as evidenced our estimates on partial odds ratios per region.

Table N°4 : Relationship between (P) and (I) given (R) : an estimate by the conditional odds ratios ($\hat{\theta}_{PI/R}$)

| Odds Ratio ($\hat{\theta}_{PI/R}$) and IC | |
|---|---|
| Odds Ratio ($\hat{\theta}_{PI/R}$) | 95% Confidence interval of the odds ratio ($\hat{\theta}_{PI/R}$) |
| $\hat{\theta}_{PI/Douala}$ =3233 | $\hat{\theta}_{PI/Douala}$ (26.57 ; 393299) |
| $\hat{\theta}_{PI/Center}$ =0.0004 | $\hat{\theta}_{PI/Center}$ (0 ; 0.0447) |
| $\hat{\theta}_{PI/East}$ =561 | $\hat{\theta}_{PI/East}$ (4.6 ; 68326.9) |
| $\hat{\theta}_{PI/Far North}$ =1.0977 | $\hat{\theta}_{PI/Far North}$ (0.0217 ; 55.4163) |
| $\hat{\theta}_{PI/Littoral}$ =1 | $\hat{\theta}_{PI/Littoral}$ (0.02 ; 50.52) |
| $\hat{\theta}_{PI/North}$ =0.0002 | $\hat{\theta}_{PI/North}$ (0 ; 0.0247) |
| $\hat{\theta}_{North West}$ =135705 | $\hat{\theta}_{North West}$ (2678.35 ; 6875819) |
| $\hat{\theta}_{PI/West}$ =631 | $\hat{\theta}_{PI/West}$ (5.18 ; 76840.37) |
| $\hat{\theta}_{PI/South}$ =0.004 | $\hat{\theta}_{PI/South}$ (0.0002 ; 0.0632) |
| $\hat{\theta}_{PI/South West}$ =1419 | $\hat{\theta}_{PI/South West}$ (11.66 ; 172678) |

Sources: Our estimates based on data in table n°2

This table 4 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. Thus, the analysis of type 3 shows that with the exception of the variable milieu, all other main effects are highly significant in the acceptance or rejection of bribes for success by the staff of institutions. At the applicants' level, we have only considered the areas where the magnitude of the taking of bribes by the educational staff for success is more important than the perception (see Table 2), namely the Far North, Littoral and North-West, this to highlight some of their features.

Table n° 5: Some basic statistics

| Statistics | Value | Probability |
|-------------------------|----------------------------|-----------------------------------|
| Cochran-Mantel-Haenszel | CMH = 17.87 | <.0001 |
| Mantel-Haenszel | $\hat{\theta}_{PI}$ = 2.62 | $\hat{\theta}_{PI}$ (0.70 ; 9.69) |
| Breslow-Day | Chisquare = 2379.54 | <.0001 |

Source: Our estimates based on data in table n°2

5.2 Characteristics Of Applicants Who Pay Bribes To Succeed

The results in Table 6 below derived from data in Appendix 1 which conceptualizes the request of corrupt act by the applicants.

Table N°6: Estimate of equation 8

| The GENMOD Procedure: Binomial Distribution, Logit Model (Dependent variable: have paid to succeed) | | | | | | |
|--|--------------------|----|-------------|----------------|----------------------------|-----------------------|
| Analysis Of Parameter Estimates | | | | | | |
| Parameter | | DF | Estimate | Standard Error | Wald 95% Confidence Limits | Chi-Square Pr > ChiSq |
| Intercept | | 1 | -7.0175 | 0.5818 | -8.1578 -5.8771 | 145.47 |
| <.0001 | region | | | | | |
| | Far North | 1 | 3.2687 | 0.0897 | 3.0928 3.4446 | 1326.77 |
| <.0001 | region | | | | | |
| | Littoral | 1 | 2.2676 | 0.0836 | 2.1038 2.4314 | 736.21 |
| <.0001 | milieu | | | | | |
| | urban | 1 | 0.0998 | 0.0671 | -0.0316 0.2313 | 2.21 |
| 0.1367 | sexe | | | | | |
| | male | 1 | -5.9341 | 0.5066 | -6.9271 -4.9411 | 137.18 |
| <.0001 | level | | | | | |
| | non Poor | 1 | 1.1998 | 0.0565 | 1.0890 1.3106 | 450.43 |
| <.0001 | age | | | | | |
| | less than 39 years | 1 | 2.3363 | 0.5848 | 1.1901 3.4824 | 15.96 |
| <.0001 | activity | | | | | |
| | active | 1 | 0.5553 | 0.0743 | 0.4097 0.7009 | 55.89 |
| <.0001 | | | | | | |
| Model Information | | | | | | |
| LR Statistics For Type 3 Analysis | | | | | | |
| Source | | DF | Chi-Square | Pr > ChiSq | | |
| region | | 2 | 1909.97 | <.0001 | | |
| milieu | | 1 | 2.22 | 0.1359 | | |
| sexe | | 1 | 1069.11 | <.0001 | | |
| level | | 1 | 451.59 | <.0001 | | |
| age | | 1 | 36.50 | <.0001 | | |
| activity | | 1 | 57.77 | <.0001 | | |
| Criteria For Assessing Goodness Of Fit | | | | | | |
| Criterion | | DF | Value | Value/DF | | |
| Deviance | | 40 | 10656.5112 | 266.4128 | | |
| Scaled Deviance | | 40 | 10656.5112 | 266.4128 | | |
| Pearson Chi-Square | | 40 | 350407.0795 | 8760.1770 | | |
| Scaled Pearson X2 | | 40 | 350407.0795 | 8760.1770 | | |
| Log Likelihood | | | -5328.2556 | | | |

Source: Our estimates based on data in Appendix 1

Indeed, we find that socio-demographic characteristics play an important role on the payment of bribes or not by examinees in order to succeed. Thus, in the regions, whether in the Far North or Littoral, signs assigned to the coefficients are all positive, reflecting the high magnitude of the payment of bribes by applicants to different staffs of the institutions of the two regions to pass exams, the reference region being the North-West. Despite the non-significance of the main effect milieu, we still find that the theory is true for this variable, given that the estimated parameter presents a positive sign for the urban partial effect, reflecting the fact that those who reside in agglomerations tend to pay more bribes to pass exams than those living in rural areas. In other words, the chances would be about 10% higher for those living in urban areas to pay bribes to succeed than the rural people ($e^{(0.0998)} = 1,10$), despite the non-significance of this difference. The theory is also verified here for the non-poor,

the younger and the workers whose coefficients are all positive, just showing enthusiasm for corruption for these socio-demographic categories.

5.3 Bribe As Unique Channel For Success?

During the investigation on corruption in the educational system, parents were asked if they have benefited from the support of a high authority for their children to succeed.

Table N°7: The percentage of beneficiaries who receive assistance from an authority to succeed.

| Answers | Frequence of respondants |
|---------|--------------------------|
| Yes | 26966 (4,67%) |
| No | 549574 (95,37%) |
| Total | 576560 (100%) |

Source: Our estimates based on Ecam3 data

The parents of the students answers to this question show that 4.67% of them have benefited, which equals to 26966 parents. Therefore, bribe is not the only corruption channel through which candidates pass to succeed in examinations and competitive exams. The recommendation of candidates is the second channel. The problem that arises is to identify the actor, whom from the supply side, most intervenes in this latter channel. If we share them into two groups namely the institutional leaders and the staff of these institutions, the following table indicates, from the supply side, the most important actor through the frequency of supports.

Table n°8: Authority who has given his/her support for success

| Type Of Personality | Frequency |
|--|-------------|
| Officer of the institution organizing the competitive exam / recruitment | 867 (70,8%) |
| Personnel of the institution organizing the competitive exam / recruitment | 357(29,2) |
| Total | 1224 (100%) |

Source: Our estimates from Ecam3 data

Table 8 shows that the personnel acts less than the leaders. As a matter of fact, according to the survey, officers intervene in 70.8% of cases and employees in 29.2%. This result is close to what we found with respect to bribes channel. Generally, it appeared that chances are about 2.62 times higher for applicants to pay bribes to schools authorities and not to other people in the institution to pass their exams, irrespective of the region.

It is true the amount of bribe paid is not known. However, it is likely that it depends on the type of competitive exam or examination. In this respect, one can first consider the most popular competitive exams. They are those which allow candidates not only to be admitted into a school, but in addition, to automatically get a job at the end of their training. For instance, we can mention the competitive exams into the National School of Administration and Magistracy, the Cameroon Military Academy and the Higher National School of Education. Then, there are the less attractive competitive exams that offer training, but do not guarantee employment. For example, the admission into the University Institute of Technology, the Advanced School of Economics and Commerce, just to name the few. Here, the student himself seeks for a

job opportunity at the end of his training. In the first case, bribes are higher than in the second. Despite this, parents agreed to invest to acquire a position in competitive exams which guarantee employment. They know that after training and once appointed to a position of responsibility, the graduate will have multiple opportunities to collect bribes that eventually will help 'capitalize' the former investment. The promoted could also at the appointed time intervene to favor his relatives in their success to exams, thereby perpetuating the system. Therefore, access to an employment position through corruption perpetuates corrupt practices.

Of course, turning to invest through bribes is not sure, given that corruption contracts are without any guarantee. Consequently, many corruptors pay bribes to succeed but to no avail. However, the assurance for success that the parent may have after paying bribes depends on the position held by the corrupt and therefore to his discretion power. The directors of institutions have more discretion power than their employees. Table 8 above shows that success in competitive exams through the recommendation channel is done at 70.8% thanks to officials of the organizing institutions, and at 29.2% through the staff of these institutions. Therefore, to ensure success to exams through the recommendation channel, it is better to get the support of the head of the institution that organizes the competitive exam.

6. CONCLUSION

The purpose of this study was to identify individuals who receive bribes to allow candidates to pass examinations (or competitive exams) as well as the characteristics of applicants who pay them. The empirical analysis reveals that from the supply side, in 50% of the regions studied, the magnitude of the payment of bribes to heads of institutions (Director or Principal) for success is greater. These regions are Douala, East, Far North, North-West and West. This phenomenon is prevalent in the North-West where the payment of bribes for success is 99.46 times higher among Heads of schools (Principal or Director) than among the other staff, for a relative risk of about 327. In other words, the proportion of schools authorities to whom bribes are paid for success is about 327 times higher in this region than that of the school staff. 30% of regions namely the Center, the South and the North have situations where the magnitude of bribes paid to the staff of the institution to pass exams is greater. Two of the 10 regions studied namely the Littoral and the Far North show but situations where the magnitude of non-regulatory fees paid by applicants for success is not virtually different between the two socio-personal categories.

From the demand side, we have only considered regions where the magnitude of the perception of bribes for success is greater than that of the non-perception (see Table 2), namely the Far North, Littoral and North-West. In each of these regions, it appears that socio-demographic characteristics play an important role on the payment of bribes or not by applicants for success. In particular, those living in urban areas tend to pay more bribes to pass exams than those living in rural areas. Similarly, young people are more likely to pay bribes for success than the old, and for the same cause, the rich than the poor, and the workers than the jobless.

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