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**Multiple jobs holding and management of  
lecturers in Cameroonian state universities**

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**Abstract.** This article is a continuation of our previous works on the determinants of multiple jobs of lecturers in Cameroonian State universities. It lays particular emphasis on human resource management used in these universities. The methodology makes use of the logit analysis on survey data. The results obtained show that contrary to the theoretical and empirical literature, time constraint in the main job does not appear to be an important explanatory factor for the multiple jobs phenomenon. However, gender, the universities' location, salary earned from secondary jobs and the holding of an administrative position in a university play a major role in explaining the phenomenon. This paper thus presents a certain interest linked to the specificity of these jobs (lack of monitoring, opportunism in behaviors, social pressures related to them) on the one hand, and the coaching of the human resource used on the other. Governmental incentive measures are proposed to limit this dual employment phenomenon which tends to deteriorate the quality of lectures provided.

**Keywords.** Moonlighting, State University, Odds ratios, Logit model, Monitoring and Coaching tools, Cameroon.

**JEL.** J50, J24, J31, J81, C35.

## 1. Introduction

Multiple job-holding<sup>1</sup> is a major characteristic of the labour markets of contemporary economies. It refers to a situation where an individual holds a main job, along with one or more secondary ones. This phenomenon has also been termed moonlighting in the literature. The study of moonlighting is important since it captures the behaviour of rational economic agents that aim to improve their material welfare or develop survival strategies.

Since the pioneer work of Shishko & Rostker (1976), economic literature considers the hours of work in the main job as the major determinant of moonlighting (O'Connell, 1979; Krishnan, 1990; Conway & Kimmel, 1995; 1998; Theizen, 2005). To this major determinant, other determining factors such as the pay in the main job and in the secondary job can be added. This

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study is in line with these pioneering works but however goes beyond the classical determinants to consider, in the case of dual job-holding of lecturers of State universities in Cameroon, other explanatory variables such as gender, localisation, administrative function occupied, highest certificate, rank, speciality, age, marital status and child burden.

During the 80s and 90s, Cameroon went through an economic crisis that touched all sectors of activity. Until 1990, the state ensured the growth of the budget of higher education that reached 2,1% of the state budget in 1990. Thereafter, the university system could not be protected from the effects of this crisis; drastic reductions in the working budget plunged the system into a deep crisis. Within a period of five years, the higher education budget was divided by eight. The 1994 devaluation of the CFA franc came to worsen the situation. It is therefore not a surprise that the university can no longer perform its duty of training and research, in this context where lectures are demotivated (suppression of benefits, drastic salary cuts, deplorable working conditions). It is in this difficult context that the law of 1993 which restructured higher education and opened new university structures and is still being enforced today was adopted. Despite the growth in their budget allocation observed since 1998, the budget remains at a low level and does not enable a proper functioning of these institutions; moreover, the growth in enrolment in universities between 2000 and 2004 remains higher than that of the university budgets. The working budget of higher education represented only 0.8% of the state budget in 1999, as against 2.1% in 1990 (Yamb, & Bikoue, 2016).

These difficult living and working conditions of lecturers of State universities<sup>2</sup> pushed them to explore and perform other activities out of these universities. These lecturers, because of their numerous activities tend to give less time and interest to their primary job, a phenomenon that still exists today and is increasing in spite of a relative increase in the salary level in the civil service<sup>3</sup> and a special quarterly research benefit granted by the head of state to lecturers of State universities (Yamb, & Bikoue, 2016).

This study makes use of a logistic regression model to analyse and explain the moonlighting phenomenon. Our model predicts the effect of one or more explanatory variables on a qualitative choice variable with two responses using a logit model. This model enables us to determine the probability of an event given the values of a set of quantitative and/or qualitative variables. In other words, we seek to predict the probability that a lecturer participates or not in moonlighting as a function of explanatory variables like the pay in the primary job, the pay in the secondary job, gender, the situation of the university, the administrative function occupied, the highest certificate, the rank, the domain of specialisation, the number of working hours in the principal job (average number of teaching hours per week and/or average number of courses taught per week), age, matrimonial status and the child burden. The main objective of this study is therefore to analyse and explain the moonlighting phenomenon by lecturers of State universities in Cameroon and establish the relationship

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between moonlighting and a number of variables that affect it. The case of two modalities is explored in this study. In fact, the use of a logistic regression model enabled us to model the probability of the occurrence of an event given a set of quantitative and/or qualitative variables. To our knowledge in Africa, studies on moonlighting in the educational sector and higher education in particular are few. This is really surprising given the importance of the sector.

The second section of this study presents a brief review of the literature on the determinants of moonlighting in general and in the higher education sector in particular. The survey data as well as some descriptive statistics are presented in the third section. The econometric estimation and the results obtained are analysed and discussed in section four. Section five discusses and highlights the managerial aspects in Cameroonian State universities, while advocating recommendations for better use of the human resource employed. Section six concludes the study and proposes some managerial actions that could help the State reduce the level of this phenomenon that could have negative effects on the quality of teaching.

## 2. Theoretical foundations and literature review

This section first presents the theoretical foundations of moonlighting followed by a brief literature review on the phenomenon.

### 2.1. Definitions and theoretical foundations

Moonlighting can be defined as the holding of one or more jobs by an individual besides his main job. Two types of secondary jobs can be identified (Foley, 1997): formal secondary jobs and informal secondary jobs (for example if an individual is engaged in an individual economic activity (self employment)). The formal economic activity is considered as a main job. This is generally the case when lecturers of State universities who besides their activity of lecturing in their main university also lecture in other private universities. A third type of secondary activity can be considered when an individual besides his main job engages himself in agricultural income generating or domestic consumption activities. Given that moonlighting is generally a short run phenomenon, the proportion of workers who exercise moonlighting at a given moment of their working life is high. Many studies on moonlighting do not highlight the characteristics of moonlighters and ignore the reasons for and effects of moonlighting. The majority of studies on moonlighting (Shisko & Roster, 1976; O'Connell, 1979; Krishnan, 1990; Paxson & Sicherman, 1996) note the existence of many reasons for moonlighting, the main one being work hour constraints in the main job that not only limits the possibilities of secondary income but also generates income instability. Another possibility according to Kimmel & Conway (2001) is that exercising a secondary job may have a non-monetary benefit that is absent in the main job. The main job may therefore give many credentials to the worker to have a higher income in

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the secondary job: this is the case when a law lecturer works as a consultant in a law firm, or someone who lectures in the daytime and sings in a cabaret at night. The secondary job can therefore offer the worker a satisfaction he can't get from the main job.

Kimmel & Conway (2001) identify two categories of moonlighters with different labour supply characteristics: the first group is made up of workers who exercise different activities or have heterogeneous job motives while the second is consists of workers who exercise the same activity in the secondary job (job packaging motive). It should be noted that the reasons for the practice of any of these activities are different. Heterogeneous activities in the secondary job are specific in that they are conditioned by the work hour constraints in the main job. This has as effect a lower income in the secondary job relative to the main job for shorter periods than in homogeneous activities. This is explained by the fact that time constraints in the supply of labour are generally perceived as a short run phenomenon that can have different effects depending on the type of secondary job. Thus, a lecturer can have different types of secondary activities (consultancy, management of production or sales companies, senior employee in a ministry, provider of varied services, farmer, etc...), or the same secondary activities in line with the main job (lecturer or researcher in another private or state university).

According to Kimmel & Conway (2001), the majority of moonlighters are into services and sales but also occupy technical and professional positions. In 37% of cases, the positions occupied by moonlighters are the same as those in the main job. The study by Foley (1997) on moonlighting in Russia during the economic transition period shows that about 87% of moonlighters have secondary jobs that are different from their main job unlike in the United States where these percentages are 83% and 77% respectively for men and women (Paxson & Sicherman, 1996). The same study shows that secondary jobs in the health, education, sales and mines are more likely to be the same as the main job. The most practiced secondary jobs are in the domains of teaching, petit trading and services like cleaning.

According to Foley (1997), the reasons for exercising a secondary job in a sector different from that of the main job lie in the fact that workers can plan to change their profession without necessarily quitting their main job and that a secondary job is some sort of insurance against fluctuations in income in the main job. Also, work hour constraints in the main job can incite workers to seek for secondary jobs that give them the possibility of working in the evenings or during week-ends. The majority of secondary jobs are informal, suggesting that an easy accessibility and the control of the time worked are factors that affect the choice of the individual.

The determinants of moonlighting differ according to the sector considered. However, the literature identifies on the one hand the common socioeconomic determinants that don't depend on the sector studied. These determinants are age, sex, matrimonial status, number of children at the

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care of the worker, level of education, professional qualifications or dexterity, etc... on the one hand and budgetary determinants, particularly salary and non salary incomes and work hour constraints on the main job on the other. Some of these determinants are discussed in the rest of the study.

### 2.2. Literature review

Pioneers research on moonlighting recognised the possible existence of many reasons, but empirical studies make the hypothesis that all moonlighters have hour constraints in their principal job (Shishko & Rostker, 1976; O'Connell, 1979; Krishnan, 1990, 1993).

The literature before the study by Shishko & Rostker (1976) treated moonlighting following a demand and supply approach. Certain supply based studies (Moses, 1962 and Perlman, 1969) explain the individual labour supply of a moonlighter while others based on demand (Guthrie, 1965, 1969; Grossman, 1974; Hamel, 1967) highlight the demographic characteristics of a typical moonlighter. Shishko & Rostker (1976) have the merit of combining these two approaches to estimate the supply curve of a moonlighter thanks to the tobit model.

However, more recent studies highlight the reasons of moonlighting and answer questions on the implications of these reasons for economic moonlighting models. As example, Conway & Kimmel (1994) estimate a moonlighter labour supply model for men in their youth using data from the Income and Programme Participation survey (ERPP). In their model, they identify many reasons for moonlighting. They particularly find that the number of hours spent in the principal job become endogenous if the labourer is moonlighting for reasons other than hour constraints in the principal job.

In line with these studies, Conway & Kimmel (1995) use ERPP data to estimate a duration model of moonlighting. They make the hypothesis that the moonlighter with a work hour constraint in the principal job will hold many jobs for a lesser period than those who exercise moonlighting because both jobs are heterogeneous. Levenson (1995) provides an indirect proof of moonlighting. He notes that during the 25 years preceding his study, moonlighting led to salary and employment benefits by men but that the participation of women in moonlighting is increasing faster than that of men. This may be an indication that female participation in moonlighting is for non-economic reasons. However, Levenson does not test this hypothesis formally. Paxson & Sicherman (1994) study the dynamics of moonlighting in the United States by jointly using data from the current population survey (ECP) and the Panel Dynamic Income Survey (EPRD). They find that moonlighting is a dynamic process – most workers surveyed practiced moonlighting during their working life. The EPRD data reveals that between 1979 and 1989, almost 65% of men and 43% of women had a second job. They also note that traditional moonlighting models suppose that workers practice moonlighting because

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of hour constraints in the main job, ignoring the fact that with time, workers can evade these hour constraints and look for new jobs. The focus of their study is on the reasons why workers join or quit secondary jobs. They specify and estimate a joint decision: to look for a secondary job or to quit the primary one for another that has no hour constraints. Abdukadir (1992) examines the possibilities of moonlighting being the outcome of short run financial constraints.

Ehrlich (1973), Shishko & Rostker (1976); Conway & Kimmel (1998) explain moonlighting using the salary differential between the formal and informal sector, the latter giving more profit opportunities for a given level of risk. Krishnan (1990), Paxson & Sicherman (1996), Ahn & Rica (1997) analyse moonlighting as the result of the degree of under-employment or hour constraints in the main job. From this last point of view, these authors adhere to the views of the empirical works of other economists on the same reasons (O'Connell, 1979; Krishnan, 1990, 1993; Shishko & Rostker, 1976).

Rose (1994), Kim (2005), Desai & Idson (2000), Braithwaite (1994), Foley (1997) and Kolev (1998) show that moonlighting is for two main reasons: survival and the spirit of enterprise, especially in transition economies, reference being made here to Eastern Europe. Guariglia & Kim (2004) note that the probability of moonlighting increases with the level of training. Commander & Tolstopiatenko (1997) explain moonlighting by individuals using the demand for factors, especially labour. According to them, firms have a choice between informal part time jobs (black market labour) and informal<sup>4</sup> fulltime ones.

In the teaching field, the causes and consequences of moonlighting by lecturers have been highlighted by many authors. These causes and consequences of the phenomenon have led some authors to bring out a typical moonlighter profile, financial need (Parham & Gordon, 2011; Winans, 2005) being one of the main reasons why lecturers engage in moonlighting and use it as to explore other career options (Winans, 2005).

A study carried out in the state of Texas in the United States (TSTA, 2006) reveals that 67% of lecturers questioned on the phenomenon are of the opinion that moonlighting has had a negative impact on their professional life and performance. Henderson, Darby & Maddux, (1982); McGinley, (1979); Wisniewski & Kleine (1984) show that moonlighting not only reduces the performance of lecturers but is also a threat to the professional status of this job.

Parham & Gordon (2011) analyse the negative effects of moonlighting on lecturers through the hour constraints in the secondary job. For these authors, moonlighting does not only affect the professional life of lecturers, but also their family life and their health. However, in the light of growing financial needs, lecturers cannot give up moonlighting in spite of its negative effects. These same authors hold that one of the causes of moonlighting by lecturers also lies in the fact that these lecturers have for some time developed a complex towards their profession, considering it as a profession at different degrees of their status of lecturer. Is it for this

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reason that lecturers have began engaging in moonlighting, or do they do this simply for economic survival?

Carolyn, *et al.*, (1994) rather lay emphasis on socio demographic characteristics of moonlighters in higher education (gender, highest certificate, wage, age, etc...) to bring out the profile of a typical moonlighter (young, mostly of male sex, and with many certificates). These lecturers are it appears not satisfied with their pay in the principal job. These authors finally reach the conclusion that these lecturers differ only slightly from their colleagues who are reticent as concerns moonlighting in the majority of factors associated to work (job satisfaction, quota and work hour constraint, stress at work) and attitudes (towards the job of lecturer, of students, of parents and the administration). Also, the moonlighter does not seem unsatisfied with his job.

However, although recent research has began studying moonlighting more rigorously, little is known on the reasons underlying this behaviour in Africa in general and Cameroon in particular. Nevertheless, Yamb & Bikoue (2016) used a log linear model to highlight the factors that explain the moonlight phenomenon among lecturers in Cameroonian State universities. This study is important because it shows, in addition to moonlighting classical determinants, (hours of work in the main job, pay in the primary job, pay in the secondary job) that gender and the university localization also play major roles. The present study that uses a logistic model can therefore be seen as a continuation of their work, by stressing on the phenomenon's managerial implications, as well as on the State universities' managers on the one hand, and on lecturers on the other.

### 3. Data and descriptive statistics

#### 3.1. Sample characteristics and description of study variables

This study analyzes the multiple job-holding phenomenon of lecturers of State universities in Cameroon by using data on two of the eight State universities in the country; an urban university (University of Douala) and a semi-urban university (University of Dschang) were selected for the study. The reasons of the choice of the universities of Douala and Dschang<sup>5</sup> lie in the fact that the first is representative of large metropolitan universities (universities of Yaoundé 1 and Yaoundé 2) whereas the second is representative of small metropolitan universities (universities of Buea, Bamenda, Ngaoundéré and Maroua). In fact, the economic and demographic characteristics of the large metropolis are almost similar, just as are those of the small metropolis (Yamb, & Bikoue, 2016).

In each university, a survey was carried out and a random sample stratified by zone, gender, income and hour constraint was constituted on the basis of approximately 240 administered questionnaires of which 169 were returned, giving a rate of return of almost 70%. On the 169 received questionnaires, 138 were administered on men and 31 on women, 94 respondents being of Douala and 75 of Dschang. The Table 1 in the

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appendix section summarises the distribution of the lecturers questioned by gender, rank and university of origin.

The first column of this table represents the variables rank and university of origin; the second column which represents gender is divided into two columns namely male and female; the last column presents the total number of lecturers surveyed by rank and this according to the university of origin and gender; the figures below the frequencies represent the corresponding proportions; for example, we will say that the sample comprises 52 senior lecturers (which accounts for approximately 30,8% of the total of the sample) distributed in an equitable way in the two universities (50% in each institution) that is to say 18 men (69,2%) and 8 women (30,8%) senior lecturers in Douala and 25 men (96,2%) and a woman (3,8%) senior lecturers in Dschang.

### 3.2. Dependent and independent variables

The explanatory variables used within the framework of this study are those resulting from the traditional literature on moonlighting. The majority of them enable us to capture the socio-economic characteristics of the lecturers and to simplify the analysis were each classified in two categories: the current wage condition (adequate, inadequate) taken as a proxy for the wages in principal employment, the weekly workload of courses (less than 10 hours, greater than 10 hours) taken as proxy for time constraint in principal employment, the income earned in the secondary employment (consistent, inconsistent), the gender (male, female), the zone of localisation of the University (Douala, Dschang), the occupation of an administrative office (yes, no), the highest diploma (no doctorate, doctorate and more), the rank (master, non master), the speciality (social/human sciences, sciences/technology), age (42 years and below, more than 42 years), the matrimonial status (married, single), the child burden (less than five, five and more). Lastly, for the explained variable we asked the surveyed a question to which it was necessary to answer by yes or no: *Do you exercise other activities apart from your activities of teaching and research at the university?* This was retained as a proxy of the variable multiple job-holding.

### 3.3. Some descriptive statistics

Firstly, when we ask the university lecturers surveyed their point of view concerning their present wage situation, whatever their gender or university of origin, a high proportion answers that it is *inadequate* (see tables 2 and 3 in the appendix section).

From table 2, we see that among the 169 surveyed lecturers, 102 find their current wage situation is inadequate, giving approximately 60% of the sample size and of the 138 questioned men, 90 are of the same opinion, giving a percentage of approximately 65%. 38,7% of the 31 women are of the same opinion. However, we note that a rather considerable percentage (nearly 22% of the sample) of surveyed had no opinion about the question.

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When we set aside this percentage in our estimates and even when we incorporate the first two columns, we note a high increase in the proportion of the people who believe that their current wage condition is inadequate at the global level (approximately 77%) and at the level of the gender (approximately 78% of the men and 70% of the women). This same reasoning holds when we consider table 3 as far as the university localisation's zone is concerned. In fact, by ignoring the last column and incorporating the first two, 77% of lecturers surveyed find their current wage situation inadequate and at the level of the universities, we obtain the same result for almost 70% of the lecturers of the University of Dschang and 83% for those of Douala. From these statistics, can one conclude that wages in main employment are one of the key factors in the explanation of multiple job-holding by lecturers of state universities in Cameroon?

#### 4. Econometric estimation of the determinants of multiple job-holding: analysis of results and discussion

##### 4.1. Econometric model

To highlight the moonlighting phenomenon of lecturers of state universities in Cameroon, we make the hypothesis that each lecturer can be confronted or not to multiple job-holding and that the propensity to be confronted with multiple job-holding is related to the characteristics of the individual and the administration. The dependent variable here is multiple job-holding, measured by a nominal variable. This enables us to capture the characteristics of the individuals and the administration through a logistic regression model of the form:

$$\text{Moonlighting} = \mu + \sum \beta_k X_i + \sum \theta_n Z_j + \varepsilon_{i,j} = 1 \text{ If Moonlighting} \quad (1) \\ = 0 \text{ Otherwise}$$

With:

$X_i$ : a vector of K characteristics of the individual i (age, gender, matrimonial status, child burden, highest diploma, speciality, rank, wages resulting from the secondary employment)

$Z_j$ : a vector of N characteristics of the administration (function occupied by the individual i, wage in the principal job, hour constraints in the principal job, localisation of the university)

$\varepsilon_{i,j}$ : a random error term which follows a white noise

Table 4 in the appendix section presents the variables used and their coding. Likelihood ratio tests are also performed on the variables to determine those that have a significant effect on moonlighting (see table 5 in the appendix section).

##### 4.2. Analysis of results and discussion

Table 6 in the appendix section presents estimates of a non parsimonial version of equation 1 for the set of variables above and information on the

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quality of the adjustment of the model which show that the model retained for the analysis is correctly specified. This is confirmed by the likelihood ratio test on the chi-square statistic.

Work hour constraints in the main job appear in the literature as the main determinant of moonlighting. It is captured in this study by the variables number of lecture hours and number of courses taught per week. The coefficients of these variables are negative and non significant showing that work hour constraints are not determinants of moonlighting. The odd ratios obtained for the two variables are less than 1, showing that lecturers with a lower work load (a lower working hour constraint) are more prepared to practice moonlighting than those with a higher work load (a higher working hour constraint) in the main job. However, the literature holds that the main reason for the search of a secondary job is the lower working hour constraint in the main job. University lecturers generally have many possibilities of exercising a secondary job because of their time tables. They therefore view secondary jobs as a means of gaining income during their spare time offered them by their main employer, the state. Another justification of the result obtained lies in the fact that work hour constraints are almost absent in the case of lecturers of state universities since they have a fixed salary that does not depend on the number of hours lectured. They are not paid per hour as supposed by the work hour constraint hypothesis. The income in the main job is not conditioned by the number of hours worked. It is instead in the secondary job that the hypothesis of work hour constraint is strong since the lecturer is paid according to the number of hours worked. Given the salary conditions in the main job, we see that unlike the predictions of most studies in the literature, the variable work hour constraint in the main job does not determine multiple job holding. The hypothesis of work hour constraint does not therefore hold in the case of lecturers of state universities in Cameroon.

According to Kimmel & Conway (2001), budgetary factors impact on the holding of a second job. In fact, when salary and non-salary incomes are high, the probability of holding a second job reduces, a result that is in line with work hour constraint in the main job hypothesis (Shisko & Rostker, 1976). Our results, although being non-significant rather show that lecturers who declare having an adequate salary income have 19% more chances of holding a secondary job than those who declare their income is inadequate, thus contradicting theory. In fact, the odd ratio here is 1.19 is not significantly different from 1 and an odd ratio of 1 would imply that whatever the level of income in the main job, the probability of holding a secondary job remains the same. This is justified by the low levels of salaries and difficult working conditions faced by these lecturers daily. The income from a secondary job is therefore perceived as an additional income to improve their living conditions since without this secondary job, their level of poverty will be higher (Kimmel & Conway, 2001).

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The traditional literature on multiple job holding considers socio-demographic variables like age, education, child burden and domain of specialisation as important determinants of moonlighting through the use of discrete choice models (Kimmel & Conway, 2001). These variables significantly affect the choice of an individual to take a second job or not. Why does this study contradict some of these results? The answer lies in the fact that we are working in a different environment and on a 'homogeneous' population-that of university lecturers. The 'heterogeneous' nature of the population in previous studies is the main reason behind these different results. In fact, in this 'homogeneous' population made up of lecturers of state universities, all the individuals have a high level of education. Is this high level of education a determinant of multiple jobs holding as suggested by the literature? At first sight yes. But given the current state of university lecturers in Cameroon, this is not the case. Given that the level of education is measured using the certificates obtained (Masters, Ph.D., Post Doctorate degrees) and the rank (ATER, assistant lecturer, senior lecturer, associate professor and professor), each showing a minimum of 17 years of study for the different categories. According to the literature those with a higher level of education are more inclined to holding multiple jobs than those with a lower level. Our results show that the estimates of these two variables are not significant, showing that the level of education is not a significant determinant in the search and exercise of a secondary job. In fact, the certificate and/or grade does not affect the holding of a secondary job. This can be explained by the fact that the activities performed at the level of the main job (lecturing) are the same or almost the same in the secondary job. Another reason is the shortage of lecturers in higher education, given the ever growing number of state (08) and private universities (close to 200). However, despite the non significance of the variable level of education measured using the certificate and grade, we obtain negative coefficients and odd ratios less than 1 which is in line with certain theoretical contributions according to which lecturers with a higher level of education are more inclined to moonlighting than the others. (Guariglia & Kim 2004; Kimmel & Conway, 2001; Foley, 1997). Still in line with these authors, a higher level of education (in this case measured by the grade) leads to a higher hourly wage in the secondary job. For example, a professor will have a higher hourly wage than an assistant lecturer, thus confirming the result according to which a professor has about 2.71 times more chances than the assistant lecturer. But this does not mean that the professor or assistant lecturer will be more inclined to hold a secondary job given the non significant nature of the variable grade. In line with Foley (1997), our results show that age does not significantly influence moonlighting on the one hand, and that age is negatively correlated with moonlighting in line with Kimmel & Conway (2001) on the other (for the latter, age is a significant factor, unlike for the former). According to our estimates, younger lecturers have about 66% more chances of holding a secondary job than older ones. In fact, the youngest lecturers (considered

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the most energetic) have a propensity to better cope with moonlighting. Older lecturers will also moonlight, but to a lesser extent in view of ensuring a better retirement for themselves. In fact, as suggested by Kimmel & Conway (2001) through their model on the duration of moonlighting, moonlighting is an inter-temporal phenomenon that reduces or even disappears with time and whose income has a significant impact on the level of poverty.

The majority of studies on multiple job holding attach a certain importance to the speciality of individual and the sector activity in the exercise of a secondary employment. The technical and professional sectors are often the most requested. Foley (1997), Kimmel & Conway (2001) hold that not only are these sectors among the most requested for *Moonlighting*, but also that the majority of those that find themselves in these sectors undertake the same activity in the main job. They conclude that the probability of exercising a secondary employment when one has a technical/professional qualification is higher. Our estimates, in spite of their non significance confirm these results. In fact, the lecturers of the technical or technological fields have approximately 28% more chances of exercising a secondary employment than those of other sectors. This is explained by the fact that the state universities and institutes private higher education establishments put more and more emphasis on the creation and management of technical and technological trainings than tertiary ones. Since lecturers of the technological fields are fewer, they are more demanded than the others (social and human sciences) who constitute a large share of lecturers and thus have more chances of exercising one or more jobs in addition to their main employment.

In the literature, having children has an ambiguous effect on moonlighting: thus, a high number of children increases the probability of having a secondary employment whereas to having children of a very tender age (corresponding to the nursery school children) reduces this probability (Kimmel & Conway, 2001). Our estimates show that the number of children does not affect the moonlighting. However, the positive coefficient of the variable number of children and its odd ratio close to 1 simply shows that people with a higher number of children have the same propensity to moonlight as those with a lower number. This can be explained on the one hand by the relatively low level of wages compared to other lecturers in countries at the same level of development (Ivory Coast, Senegal, Congo, Kenya...) and on the other hand by the low difference in wages between the various ranks of the teaching corps. The non significance of the majority of our estimates compared to results in the empirical literature on multiple job holding is due to the homogeneous nature of the population on which we work as previously indicated. However, in spite of this non significance, the signs of the majority as of these coefficients are in line with the majority of studies in the empirical literature on the relationship between moonlighting and its determinants.

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The results of the estimation of the parsimonious model are presented in table 7. At the level of the characteristics of the individual, we find that only two variables explain moonlighting to a significant level: These are the income resulting from the secondary employment and gender. Two variables are also significant at the level of the characteristics of the administration: These are the variables University of origin and the holding of an administrative office. The parsimonious model is thus given on the basis of these four variables.

In the light of these results, we see that *lecturers of university of Douala, lecturers who have an administrative office, lecturers whose incomes resulting from the secondary employment are not consistent and male lecturers* have a greater tendency to practice moonlighting.

According to Foley (1997), men and those who reside in urban environments are more inclined to multiple job holding, thus confirming our results: multiple job holding is therefore more justified in Douala than in Dschang since Douala is the economic capital of Cameroon and has more private university institutions (more than 40% of the private university institutions of the country are found in Douala) and more companies. Approximately 80% of the economic activity of the country is concentrated in this city. According to our estimates, a lecturer in Douala has approximately 4,95 times more chances ( $e^{1,6} = 4,95$ )<sup>6</sup> than his counterpart of Dschang to exercise one or more jobs in addition to his main employment.

For Levenson (1995), women practice moonlighting more than men. Our results rather show the contrary and are in line with those of Carolyn *et al.*, (1994) and Foley (1997) on the "Typical Moonlighter" as concerns gender: in fact, the socio-cultural context makes of the woman the manager of domestic activities and the education of the children. This reduces the time she can devote to auxiliary activities, apart from the main job, thus confirming our results on gender which show that men have approximately 2.86 times more chances to devote themselves to auxiliary activities than women.

The holding of an administrative office, according to our estimates has a positive effect on moonlighting. The holding of an administrative office in the university by a lecturer does not eliminate his aversion for risk. The administrative position can get him functional allowances whose payment is random. The lecturer will thus prefer a sure income resulting from another employment to the hope of an uncertain income which the administrative office procures him, even if the incomes resulting from these allowances are higher than those from the secondary employment. This secondary employment allows him, as the theory of the implicit contracts (Azariadis & Stiglitz, 1983) suggests, to absorb uncertainty. The estimate of the characteristic administrative office consolidates this theory of contracts since we find that the lecturers who occupy an administrative office have approximately 3 times more chances to find themselves in moonlighting than those who do not occupy such offices.

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When the incomes resulting from the secondary employment are not consistent, the tendency to exercise other jobs is higher than when these incomes are consistent. In fact, in State universities, lecturers generally enjoy a particular status. They benefit from an ensured employment which generally makes difficult their dismissal. This employment insurance gives them an appreciable margin of freedom to undertake secondary activities besides their job in the state universities. This state of mind is more reinforced when the incomes resulting from the secondary activities are not consistent. Thus, lecturers finding themselves in this situation will have a higher tendency hold multiple jobs in order to reach the levels of income considered as consistent. The results on the variable income from the secondary job show that those whose incomes resulting from the secondary activities are not consistent have approximately 5,17 times more chances to continue to exercise more secondary jobs than those whose incomes resulting from the secondary employment are considered to be consistent.

We finally note that the majority of the results obtained on the variables retained for this study confirm the hypothesis according to which financial need is the main reason why lecturers of State universities of Douala and Dschang to exercise multiple job holding (Parham & Gordon, 2011; Winan, 2005). This is due particularly to the strong social or Community pressures which are exerted on the university lecturer in the African context. The lecturer is generally perceived as a person having important material and financial means that should be put at the disposal of the community. To meet these requirements from the community, the lecturer is obliged to exercise moonlighting (Yamb & Bikoue 2016).

After applying the logit approach to a sample of 169 lecturers from two state universities, the results show that *the localization of the university, the holding of an administrative office, incomes resulting from the secondary employment, and gender are the significant factors of moonlighting by lecturers of the state universities of Douala and Dschang.*

### 5. Management of lecturers in state universities

Lecturers' management in Cameroonian State universities has certain shortcomings, at least at three levels: first, in the control of teachers' behavior, secondly in the setting up of an efficiency wage or remuneration per hour of work, and finally at the level of the mobilization of the human resource employed.

#### 5.1. On the control of the behavior of lecturers

If a payment system has as aim to influence the behaviour of the employee, the particular goal is to encourage him to work, or to dissuade him from "cheating", i.e. from adopting an "immoral" behaviour (Stankiewicz, & Lene, 2011). Summarily, it is a question for a company of controlling not only the risk or the moral risk (moral hazard) but also the risk of adverse selection. In fact, it is desirable that the management device

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serves to attract and preserve the best elements (Lazear, 2004). Obviously, the system of remuneration set up by the State does not seem to play this role. This system does not encourage the lecturers to give best of themselves in their main employment or dissuade them from cheating or developing opportunistic or free rider behaviours. The control of the allocation of lecturing periods by rank is far from systematic. Some State lecturers suffer under the weight of a workload high work load in the universities whereas others don't do their job. This situation opens the way to *moonlighting* for the latter category of lecturers.

### 5.2. The implementation of efficiency wages or remuneration per hour of work

It is a question of knowing if there is a level of wages that allows the lecturers to concentrate only on their main employment? We can partially say yes. We would then qualify these wages as efficiency wages ( $w^*$ ) i.e. wages higher than the income the lecturers could obtain elsewhere ( $a$ ). In other words, it is a question of granting the lecturer a rent equal to ( $w^* - a$ ). The wage  $w^*$  is described as "efficient" because it is that which generates the highest productivity (effort per FCFA spent): it is thus the most "mobilizing" level of wages as termed by Stankiewicz & Léné (2011). However the payment of efficiency wages to the lecturer does not guarantee his non participation in secondary activities. In fact, since a lecturer normally offers his annual time allocation of lectures in addition to the time devoted to research, the remaining time can be allocated to income generating activities. An hourly remuneration of the lecturers in the State universities at a substantial rate followed by an effective monitoring (for example setting-up a biometric check of the hours lectured) would reduce the propensity to exercise a secondary employment. The time constraint would then fully play its role and would better explain the tendency for the latter in to engage in *Moonlighting*

### 5.3. Problem of the mobilisation of human resources

In the management of human resources, managers of State Universities should show a particular interest on points such as the mobilization, organisation and training of the human resources employed from the point of view of action and the understanding of the operation of the university system as a whole. Not only should the lecturers have aptitudes and abilities, still it is necessary for them to use these well and apply them for the benefit of the universities. This is only possible by motivating them and/or by involving them in the operation and the management of the university institutions and in decision-making at all levels.

## 6. Conclusion and future research avenues

The main objective of this study is to analyse and explain the moonlighting phenomenon by lecturers of State Universities in Cameroon

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by highlighting the managerial aspects in these universities, for a better use of the human resource employed. We used a logistic regression model which enabled us to predict the probability that a lecturer engages himself or not into moonlighting. Our analysis shows that the localisation of the university, the holding of an administrative office, incomes resulting from the secondary activities and gender better explain the moonlighting phenomenon of lecturers of State universities in Cameroon. The study data shows that multiple jobs holding by lecturers of State universities deteriorate the quality of the lessons delivered (Henderson, Darby & Maddux, 1982; Mc Ginley, 1979; Wisniewski & Kleine, 1984), this because of the absence of efficiency wages i.e. wages higher than the income the lecturer could obtain elsewhere.

To try to reduce the size of this phenomenon, the State should set up a system of incentives centred on three main points: firstly, create a working environment that allows the lecturers to largely devote themselves to their activities of teaching and research. In fact, in the majority of the Cameroonian State Universities, only a minority of lecturers having administrative responsibilities have offices in the university campus. The consequence is that most of the lecturers are bored in the campus at the end of a course or between two courses, and tend to go to sell their know-how elsewhere in the private sector. Secondly, the government should revise the hourly remuneration rates dating from the beginning of the 70s or more than four decades. The rates currently used do not take account of the trend of the cost of living, certain goods of first necessity having seen their prices multiplied by ten in four decades. It is therefore urgent to adapt this rate to the current cost of the life. Lastly, a substantial revalorisation of the basic wages of the lecturers which could be brought closer to those of other African countries of a comparable level of development.

This study opens new prospects for research: the study should be extended to all State Universities in Cameroon to confirm or reject some of the results obtained in the traditional literature on multiple jobs holding. It will be also question of highlighting the duration of the phenomenon by lecturers of State Universities and factors which affect this duration. This will require the construction of a duration model of moonlighting like those of Paxson & Sicherman (1996) or of Kimmel & Conway (2001).



Notes

- <sup>1</sup> This notion is better known in the university of Douala as the theory of 'souzism' according to which lecturers of State Universities should improve their living standards by seeking for secondary sources of income through income generating activities like teaching in private institutions of Higher Education
- <sup>2</sup> There are eight State Universities in Cameroon: Yaoundé 1, Yaoundé 2, Douala, Dschang, N'Gaoundéré, Buea, Maroua, Bamenda.
- <sup>3</sup> In April 2008, there was a riot against hunger in Cameroon. This pushed the government to increase the level of salaries in the civil service by about 20%.
- <sup>4</sup> Any activity that is not controlled by the state is classified under the informal sector (The black labour-market for example)
- <sup>5</sup> The limited financial means was also one of the reasons for choosing two universities only. We however will gradually extend the study to the other state universities.
- <sup>6</sup> We use odd ratios to facilitate the interpretation of the results by taking just the exponential of the coefficient of each variable of the model i.e.  $e^{\beta_j}$

Appendix

**Table 1. Gender and rank according to the University of Origin**

University of origin	Rank	Gender		Total
		Male	Female	
Douala	Ater <sup>6</sup>	2 (40%)	3 (60%)	5 (33,33%)
	Assistant lecturer	52 (88%)	7 (12%)	59 (65,56%)
	Senior lecturer	18 (69,2%)	8 (30,8%)	26 (50%)
	Associate professor	4 (100%)	0	4 (36,36%)
	Professor	0	0	0
	Sub Total 1	76 (80,85%)	18 (19,15%)	94 (55%)
Dschang	Ater	6 (60%)	4 (40%)	10 (63,67%)
	Assistant lecturer	24 (77,4%)	7 (22,6%)	31 (35,44%)
	Senior lecturer	25 (96,2%)	1 (3,8%)	26 (50%)
	Associate professor	6 (85,7%)	1 (14,3%)	7 (63,64%)
	Professor	1 (100%)	0	1 (100%)
	Sub Total 2	62 (82,6%)	13 (17,4%)	75 (45%)
TOTAL		138 (81,65%)	31 (19,35%)	169 (100%)

Source: adapted from Yamb & Bikoue (2016).

**Table 2. Current wage condition according to gender**

Gender		frequency	Your current wage condition seems to you			Total
			Adequate	Inadequate	Without opinion	
			Male	25 18,1%	90 65,2%	
Female	5 16,1%	12 38,7%	14 45,2%	31 19,35%		
Total	married	102 60,4%	37 21,9%	169 100,0%		

Source: Adapted from Yamb & Bikoue (2016).

**Table 3. Current wage condition according to University of Origin**

University of origin		frequency	Your current wage condition seems			Total
			Adequate	Inadequate	Without opinion	
			Douala	13 13,8%	63 67,0%	
Dschang	17 22,7%	39 52,0%	19 25,3%	75 54,38%		
Total	30 17,8%	102 60,4%	37 21,9%	169 100,0%		

Source: Adapted from Yamb & Bikoue (2016).

**Table 4. Summary of the variables and their coding**

		N	Pourcentage marginal
Do you regularly practice other activities besides lecturing and research in the university (Dependent variable (q7))	Yes (1)	68	40,2%
	No (0)	101	59,8%
University of origin (q1)	Douala (1)	94	55,6%
	Dschang (0)	75	44,4%
Administrative function (q3)	Yes (1)	30	17,8%
	No (0)	139	82,2%
sex (q32)	male (1)	138	81,7%
	Female (0)	31	18,3%
Your pay for activities out of the university is (q30)	not consistent (1)	27	16,0%
	Consistent (0)	142	84,0%
Highest university qualification (q6)	Less than Ph.D.(1)	107	63,3%
	Ph.D. or more (0)	62	36,7%
Grade (q7)	non magistral (1)	157	92,9%
	Magistral (0)	12	7,1%
Field of the certificate (q10)	social/human sciences (1)	125	74,0%
	sciences/technology (0)	44	26,0%
Your current salary condition is (q12)	Inadequate (1)	139	82,2%
	Adequate (0)	30	17,8%
Your weekly lecture load (number of hours) is: (q20)	6h or less (1)	40	23,7%
	More than 6h (0)	129	76,3%
Number of courses taught per week (q21)	less than 3 (1)	83	49,1%
	3 or more (0)	86	50,9%
Age (q31)	42 years or less (1)	102	60,4%
	More than 42 years (0)	67	39,6%
matrimonial status q(33)	Single (1)	68	40,2%
	married (0)	101	59,8%
Number of children taken care of (q34)	Less than 5 (1)	134	79,3%
	5 or more (0)	35	20,7%
Valid		169	100,0%
missing		0	
Total		169	
Sub-sample		125 <sup>a</sup>	

**Source :** obtained from survey data results.

**Notes:** a. The dependent variable has only the observed value in 114 (91,2%) sub-populations.

**Table 5. Likelihood ratio tests on the variables**

Effect	Criteria of adjustment			
	of the model	Likelihood ratio tests		
		-2 log-likelihood ratio of the reduced model	Khi-squared	degrees of freedom
Constant	158,323 <sup>A</sup>	,000	0	.
Q1= University	171,083	12,760	1	,000
q3= administrative function	162,097	3,774	1	,052
q6=diploma	158,516	,193	1	,660
q7=rank	160,050	1,727	1	,189
q10=speciality	159,111	,789	1	,375
q12=wage in the principal job	158,452	,129	1	,719
q20 = weekly teaching hours	158,828	,506	1	,477
q21 = weekly course load	159,924	1,601	1	,206
q30=wage in secondary employment	168,241	9,918	1	,002
q31=age	159,489	1,166	1	,280
q32=gender	161,257	2,934	1	,087
q33= matrimonial status	158,836	,514	1	,474
q34- child burden	158,346	,023	1	,880

**Notes:** The Khi-squared statistic is the difference between 2 log-likelihoods- the final model and a reduced model. The reduced model is formed by omitting a variable of the final model. The hypothesis is zero if all the parameters of this effect are equal to zero; a. The reduced model is equivalent to the final model because the omission of an effect does not increase the degrees of freedom.

**Table 6.** Estimation of the parameters of the non parsimonious model

Do you regularly perform other activities apart from your activities of lecturing and research at the university		95% Confidence interval for Exp(B)								
		B	std. error	Wald	Degrees of freedom	Signif.	Exp(B)	Upper boundary	Lower boundary	
dimension0	Yes	Constante	-1,895	1,129	2,819	1	,093			
		[q1=1,00]	1,521	,445	11,656	1	,001	4,575	1,911	10,953
		[q3=1,00]	1,179	,622	3,590	1	,058	3,251	,960	11,011
		[q32=1,00]	,901	,547	2,712	1	,100	2,463	,842	7,202
		[q30=,00]	1,599	,533	8,988	1	,003	4,946	1,739	14,066
		[q6=,00]	-,185	,421	,194	1	,660	,831	,364	1,895
		[q7=,00]	-,996	,766	1,692	1	,193	,369	,082	1,656
		[q10=,00]	,428	,485	,779	1	,378	1,535	,593	3,974
		[q12=,00]	,177	,493	,128	1	,720	1,193	,454	3,134
		[q20=,00]	-,338	,476	,502	1	,479	,713	,280	1,815
		[q21=,00]	-,557	,441	1,596	1	,207	,573	,242	1,359
		[q31=,00]	,507	,474	1,142	1	,285	1,660	,655	4,203
		[q33=,00]	-,320	,446	,514	1	,473	,726	,303	1,740
		[q34=,00]	,088	,578	,023	1	,880	1,091	,352	3,387
		b	.	.	0	.	.	.	.	

Source : Results obtained from survey data

Notes: a. The reference modality is No; b. This parameter is set to zero because it is superfluous.

**Table 7:** Estimates of the parameters of the parsimonious model

Do you regularly perform other activities apart from your activities of lecturing and research at the university		Confidence interval 95% for Exp(B)								
		B	Std error.	Wald	degrees of freedom	Signif.	Exp(B)	Lower boundary	Upper boundary	
dimension0	<sup>a</sup> Yes	Constant	-2,707	,584	21,495	1	,000			
		Douala University	1,600	,387	17,049	1	,000	4,953	2,318	10,585
		Administrative office	1,110	,468	5,616	1	,018	3,033	1,212	7,592
		Secondary income not consistent	1,643	,520	9,971	1	,002	5,172	1,865	14,343
		Male gender	1,051	,525	4,001	1	,045	2,860	1,021	8,008

Source: Results obtained from the data

Notes: a. The reference modality is No

**Table 8.** Information on the adjustment of the model

Model	Model adjustment criteria Likelihood ratio tests			
	-2 log likelihood	Chi-square	Degrees of freedom	Signif.
Constant	207,579			
Final	158,323	49,257	13	,000

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