

Determinants of Young Urban Professionals Working Decision in Duala Cameroon : the Role of Capabilities.

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Introduction

Employment is at the core of social process and young urban individuals' behaviors. In order to study the determinants of access to the labor market, we will use a model of labor market participation. This model is transformed into a model of social insertion by introducing in the model of producer-consumer other determinant variables like investment in human capital, social interaction, production, consumption, time and by relating it to the classical model of participation to the labor market.

To formally model the working decision, I make two assumptions. First, the type of employment is essential to explain the degree of economic vulnerability and can be studied by a logit model. Then, I assume that there exists a link between monetary poverty, the level of living and capabilities. These relations are shown using variables determining these phenomena. The links between these variables are established by correlations analysis.

The logit model shows the existence of a substitution effect of human capital, social capital and financial capital for the determination of labor market access. It allows to define the explanatory variables of the labor market participation decision, of the choice of the labor market segment defined by the job status. There is an interaction between level of living, social links and human capital level. Working conditions, firm characteristics (premises, wage level, tax situation, etc.) on the labor demand side also have an effect on access to the labor market.

The model raises methodological questions. The main difficulty deals with the determining factors of the different possible choices of each individual. The multinomial logit model allows testing the probability of labor market access in different positions for each position. The different positions have been defined by factorial analysis: multiple correspondence analysis and hierarchic rising classification. It does not allow taking into account the joint nature of decision. Such a fact may bias coefficient estimates in addition to decreasing their efficiency.

To proceed with this analysis, I followed two steps. First, I identified the explanatory variables of the decision to work and then to enter the formal or the informal labor market, both with a logit and a probit model. In a second step, I globally model the pathway to labor market insertion with a nested logit model. It allows to selectively relax the assumption of independence of irrelevant alternatives. It is a way to improve the quality of interpretation of individuals' choices.

After having proved the existence of a segmented labor market, I try to identify the determinants of this segmentation. What are the determinants of the employment relationship within

the different segments? Are there components of an internal market built on specific abilities and a better productivity? Are these elements leading to a segmentation based on a generational difference?

Theoretical framework: towards a model of social insertion

We used, as others authors (Millimet, 2000), the classical theory of maximization of satisfaction under constraint of a consumer considered individually, who could be at the same time, in certain circumstances (independent job in the informal sector) a producer. We assume that the well being of young urban professionals can be expressed with a utility function defined by the consumption of goods and services and able to reproduce the preferences of individuals for substitutable sets of goods and services. This basic model is completed by the introduction of interrelations between these consumptions, time allocated to production and exchanges depending on social interactions. In this framework, we try to define the maximization of the satisfaction of young urban professionals under multiple constraints by determining the corresponding utility function.

The solution of this problem of maximization give the reduced equations of participation to the labor market. We assume that the labor market is segmented and that decisions made by young urban professionals are sequential. The model of insertion using a logit is a specific declension of a classical model of maximization under constraint : the young urban professional is supposed to make a selection among a set of choices of professional status. Formally, the maximum utility associated with each alternative can be represented as :

$$U_{ij} = U_{ij}(C_{ij}, T_{ij}, R_{ij}, E_{ij}, D_{ij}, F_{ij}, Q_{ij}) \quad (1)$$

where:

U_{ij} is the utility function of the i th individual in the j professional status.

C_{ij} is a composite consumption of goods and services in the j professional status.

T_{ij} is the available time divided into work, leisure and sociability.

R_{ij} is the income divided into labor income, rent and gifts.

E_{ij} is the human capital level and others individual factors.

D_{ij} is the social interactions composed of goods and services received by the young urban professional from his people.

F_{ij} is the social interactions composed of goods and services given by the young urban professional to his people.

Q_{ij} is the production conditions given by the production function.

\mathbf{e}_{ij} is the disturbance term.

The young urban professional maximizes utility by choosing the alternative with the highest conditional utility. Hence, the utility level of the young urban professional \mathbf{U}^* will be:

$$U^* = \max_j U_{ij} \quad (2)$$

where U_{ij} could be the utility function according to a specific status: no work, protected wage work, self-employment, exposed wage work and family helpers. To apply this model empirically, we need to specify the conditional utility functions in terms of observed variables. Our objective is to estimate the probability of choosing a given segment of the labor market. The dataset contains information on the individual and consumption, time allocation, income, social interactions factors. A simple linear functional form for the utility function, frequently used in the literature would be:

$$U_{ij} = \beta_0 + \beta_1 R_j + \beta_2 E_j + \beta_3 D_j + \beta_4 F_j + \beta_5 Q_j + \mathbf{e}_{ij} \quad (3)$$

The decision rule illustrated by equation (2) implies that the probability of choosing an option, say self-employment, equals the probability that utility from self-employment exceeds the utility from each of the other choices. The work decision involves a comparison of the utility obtained from each option. Hence:

$$P_{ij} = \text{prob}(U_{ij} > U_{ik}) \text{ for all } j > k \quad (4)$$

where P_{ij} is the probability of young urban professional i making choice j . The form that the probability expression takes depends on the assumption made about the distribution of the disturbance term \mathbf{e} in (3). One common assumption, that the disturbance terms are distributed independently and identically leads to probabilities of multinomial logit form. While easy to estimate, this imposes the assumption that the error terms for different alternatives are uncorrelated, meaning that unobserved factors affecting utility from one option are not related to unobserved factors influencing another option. This can be considered as an unrealistic assumption for alternatives that could be related such as professional status¹.

Instead, if we assume that the disturbance terms \mathbf{e} are distributed according to the extreme value distribution, then we estimate the choice probabilities as nested multinomial logit. This is a generalization of the multinomial logit model that allows error terms to be correlated across alternatives within a subgroup of related choices but not across subgroups. Hence, the nested logit model selectively relaxes the restrictive assumption of the independence of irrelevant alternatives (IIA). The IIA assumption imposes equal response elasticities across choices. This means that the introduction of an additional choice will decrease the predicted proportion of the sample that chooses each of the original alternatives in proportion to their size prior the introduction. The nested logit groups similar choices. In our case, the young urban professional decides to work and chooses a

status. He makes a decision between the existing choices. If a supplementary choice was offered, this would modify the probability to work in the other segments. As in the multinomial framework, the probability of the young urban professional choosing status j , given that he is working in one of the status is calculated according to the following equation:

$$P_i(\text{status } j | C) = \frac{\exp(U_{ij})}{\sum_{k=1}^n \exp(V_{ik})} \quad (5)$$

We assume that the F function of the disturbance terms distribution follows a Weibull distribution like in the logit multinomial model. Probabilities of status choice are given by the equation :

$$P_i(y = 1) = \frac{\exp(\beta_1)}{\exp(\beta_1) + \exp(\beta_2) + \exp(\beta_3)} \quad (6)$$

and :

$$P_i(y = 2 | y = 2) = \frac{\exp(\beta_2)}{\exp(\beta_2) + \exp(\beta_3)} \quad (7)$$

We deduce the two other probabilities from the first two ones.

However, the way in which the probability of not participating to the labor market as opposed to the choice of a professional status is calculated differs under the nested logit method. It is given by:

$$P_i(Y_i = 0) = \frac{\exp(U_{i0})}{\exp(U_{i0}) + I_i} \quad (8)$$

where:

$$I_i = \sum_{k=1}^5 \exp(\beta_k U_{ik}) = \sum_{k=1}^5 \exp(\beta_k u_{ik}) \quad (9)$$

I_i is the inclusive utility value for the choices of a professional status on a considered segment of the labor market. Vector u_i is a set of variables determining the choice of labor market participation. Note that the variables may vary depending on the alternative. The parameter β is used to test the IIA assumption. If, $\beta=1$ then the model corresponds to the standard multinomial logit. By allowing to differ from one, the nested logit relaxes the IIA assumption across nodes of the decision tree, which are the labor market segments (figure 1). The IIA assumption is imposed within the nested choices but is relaxed across them. The probability to choose whatever status is thus calculated as:

$$\text{Pr ob}(Y_i = j) = \text{Pr ob}(Y_i = j | p) (1 + \text{Pr ob}(Y_i = 0)) \quad (10)$$

These probabilities are fed into the likelihood function and the parameters estimated using standard maximum likelihood techniques. The parameter λ is a test of the suitability of the IIA assumption.

Considering figure 1, we establish that we have a three level choice. The young urban professional chooses first to participate to the labor market, then to work in the formal or the informal sector, third to occupy a determined status. This organization does not impose a sequential decision making process, but the grouping of error terms in such a way that the IIA assumption is selectively relaxed (McFadden, 1984).

There are two ways to estimate the parameters of the nested logit model. A first way is to compute a two step maximum likelihood model. The estimate of the asymptotic covariance matrix of the estimates at the second step must be correctedⁱ. Full information maximum likelihood is more efficient and can be computed by LIMDEP software. Considering the difficulty to estimate coefficients using the NLOGIT module of the LIMDEP software package, we proceed for two levels only excluding the step of the formal/informal sector choice. Actually, the complexity of the estimation is geometrically increasing with the number of levels. We assume that the error terms of the four status choices are correlated.

Hence, in our case, the IIA assumption is not relevant. The choice is done among a set of existing alternatives on the local labor market. In the hypothesis of the introduction of an additional choice, it will decrease the predicted proportion of sample choosing each of the original alternatives in different proportions.

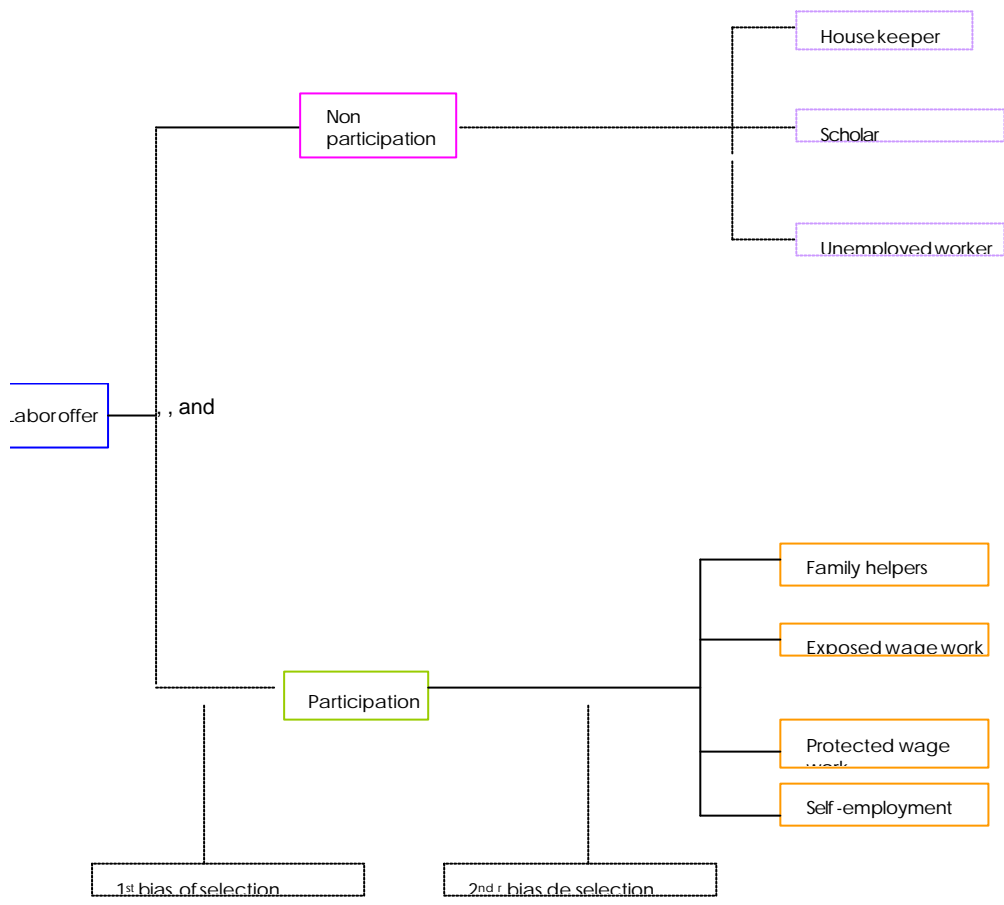
Different specifications are tried (binary and multinomial logit, Heckman probit) in order to establish the most suitable model of the studied phenomenon of insertion according to our assumptions, our findings about young urban professionals in Dualaⁱⁱⁱ and the characteristics of the urban labor market. Hence, the segments of the labor market are distinguished by different labor market characteristics, like different working conditions, different wages, different market institutions and different promotional opportunities, and behavioral rules. We assume that young urban professionals' vulnerability is correlated to their professional status. We also assume that the occupational choice is the result of a sequential decision-making process, resulting of a set of arbitrations made after considering the utility of different alternatives.

Ultimately, to explain young urban professionals' decision of work, we must use a model associating sequential decisions with multiple, conditional and singular choices. Young urban professionals confronted to the difficulty to enter the labor market develop different strategies implemented one by one or according to the opportunities that occur.

For instance, a young man with a bachelor degree will go on with college studies only if he fails to find a job as a wage worker. He will then follow a cycle of college study to improve his possibilities of finding a decent job. This is a common behavior that we find at the different levels of superior education. For instance, a young man having done two years of university and unemployed will try to enter the ENSET (National Superior School of technical Learning) or the Normal Superior

School of Yaoundé. Another example of sequential decision of work is the case of a young apprentice who is not engaged by his master or in another workshop and who will try to obtain a financial help from a contact in order to open his own workshop or a trade. Hence, the decision making process can be represented by a hierarchical framework. Nodes represent the steps of the decision making and branches make links between groups of choices of work. We estimate the parameters of the sequential decision making process.

Figure 1. Hierarchical framework of nested logit model



The nested logit model of labor participation gives an estimate of the reduced labor participation equation. The estimates are given step by step by the maximum likelihood method. Because of normalization, the estimates in the model are to be interpreted as showing the effect of the explanatory variables on the utility from a particular labor choice alternative relative to the utility from the base option, no work at all, and the other possible alternatives of work.

The wage equation specification establishes the fact to work. It allows to test the assumption of the different behaviors of young people who do not work. The question of the labor market participation and of the conditions of this participation is equivalent to considering the level of earnings.

To estimate the level of earnings, we use the Mincer model^{iv} of professional income determined by the own characteristics of the young urban professional, his human capital K_e , his

social capital S_i , the characteristics of his employment and by an error term. The earnings function can be stated as:

$$\ln(W_a) = \beta_0 + \beta_1 X_i + \beta_2 S_i + \beta_3 CW_i + u_i \quad (11)$$

with :

W_a , the monthly earnings from work;

X_i , a vector of individual characteristics like age, sex, ethnic group, level of education and the attendance of a professional training ;

S_i a vector of individual characteristics dealing with the young urban professional's social capital ;

CW_i a vector of variables relative to the professional experience measured by the length of service, the type of workshop, the way of payment and the type of work contract.

A difficulty is raised by the existence of two selection biases. The first one is due to the selection of young urban professionals who decide to work. The decision of work is the result of a decision of individuals maximizing their utility. It is not the result of a random process. The existence of the bias is enforced if the selection of working individuals itself affects the results of the earnings function.

A second identical bias exists in the selection of the segment of the labor market. The process of allocation of workers to a segment is determined by the decisions of young urban professionals who choose the segment supposed to maximize their earnings or by the employers' practice of recruitment. A selection correction term is added in the different models. These selection correction terms are computed using the probit model of the participation equations maximum likelihood estimates. We used the Heckman two-step method^v. The selection correction terms are introduced in the different earnings equations. We have found that the bias due to the allocation to a specific segment is not significant due to the reality of the segmented labor market.^{vi}. Hence, we believe in the random allocation of individuals in the different segments of the labor market.

We will present in this paper only the results of the multinomial logit and nested multinomial logit models. I refer to my previous work for a global overview of the estimates of the participation of the probit model and the semi-logarithmic earnings equations. We notice that the correcting bias variables are not globally significant in the participation model. The decision of work of a young urban professional is not correlated to the error term of the earnings function.

Comparison of the simple multinomial logit and the nested multinomial logit models

We present these estimates of the labor force participation and of the status choice using a sample data of 627 young urban professionals selected in a first degree sample of 3602 young urban professionals of the young urban employment survey in Duala that we made in 1995 .

The estimations of the two models, the simple multinomial logit model and the multinomial nested logit model are computed on the LIMDEP software. We use different reduced utility functions of labor force participation and of the labor market segment choice. The results show that the most significant specifications of the utility functions are different from a function to another. This confirms the idea of a sequential decision process.

The dependant variable is the professional status given for each labor market segment. Four labor market segments are identified: protected wage work, self-employment, exposed wage work and family helpers. We try to show that the labor market segmentation in different types of professional status prevent young urban professionals from freely changing of status. The access to these segments is not free: employers decide of the recruitment and young urban professionals, despite their capabilities (human capital, professional experience, social capital, etc.), can't easily choose the sector of work they want. The survey demonstrates that the most appreciated professional status is the protected wage work because it offers stability of earnings across time.

Before testing the model, we test the whole set of variables and the final specification is the result of numerous estimations. The robustness of the model is the result of a long work of detection of distribution of the explanatory variables, like dissymmetry, suspect values or correlated variables. We use OLS for estimating an attributed income for all young peoples reintroduced in the structural participation equation of the different labor market segments. We control for violations of the assumptions made for the classical linear model like homoscedasticity, linearity and normality of residuals. Like in other quadratic methods, the estimation is sensitive to existing outlier values. Existing important residuals are also alarming. We control for the respect of the hypothesis of linearity, homoscedasticity and eventually normality of residuals.

We retain demographic characteristics like age and sex. The first one is a mean to measure the variation of income function of the duration in the labor market. We also notice a sex discrimination in the level of income.

Human capital is given by the fact of working and keeping on going to school has an effect on income level. Young people who work while going to school earn less than those who have quit the education system. But they might increase future earnings.

Social origin is given by the professional status of the head of the household. The kind of work of the head of the household, especially when he is wage worker or self-employed, results in higher earnings for the young. The positive effect of this parameter on the earnings shows the effect of familial social capital on the labor market professional status of the young. The young's earnings

increase with the size of the household. This positive link shows two effects. First of all, an important number of people in the household indicates the financial capacity of the head of the household to sustain them. This is an indicator of a relatively good social position. Second, these people could be of great help for a job search. It is a way to multiply professional contacts.

Besides the household, the amount of social capital appears through other parameters. Money received from relatives is another way to improve professional insertion: with a capital, the young urban professional can begin a self-employment activity. The capacity of savings is also a way to improve job search and facilitate the access to protected wage work. The young urban professional has more time and resources to look for an adequate job. The amount of social capital that they own can be used to find a job.

The selection of parameters of the variables and of the standard deviation was done avoiding the risk of multicollinearity between the explanatory variables. We exclude the excessively correlated variables to keep only those characterized by low crossed correlations. Hence, the multinomial nested logit presents difficulties, especially when it uses revealed preferences and that one refers to it for predictions^{vi} : high collinearity and weak variation among attributes, difficulty to define the tree structure and the set of branches. Considering these difficulties, the nested logit model can give unsettled, biases estimates and with unexpected signs (i.e. opposite signs in comparison of what we theoretically expect).

To obtain a robust and significant specification, we proceed to the significant variables' selection using binomial logit models to test the probability of working on a given labor market's segment instead of making another choice. We have also forced the start of iterations from the values of simple multinomial logit parameter estimates. We obtain using these two means a good convergence of the algorithm and a general stability of our specifications.

Hence, a certain number of factors have been dropped because of weak significance tested by a chi2 Pearson test or because of high autocorrelation. For the first reason, labor situation of the chief of the household, duration of education, number of working relatives, judgment of how one becomes an adult, reasons of being involved in politics, all variables that indirectly influence on the young's professional choices were dismissed. The type of diploma was preferred to the level of education because diploma is required for most protected wage works. For instance, diploma is a critical criteria for firm's hiring. For the second reason, we exclude introducing in the same utility function autocorrelated variables. Hence, factors reflecting labor demand are introduced in different utility functions: type of wage payment, type of labor contract, type of workshop or labor place. Given and received cash donations have been instrumented. Level of autocorrelation of labor demand parameters increase with the explained variable when comparing the labor market segment choices with the non participation labor forces choice for which these variables characterizing the labor demand are not taken into consideration. Hence, we excluded these variables from the first level of the nested logit model.

The inclusive values are significantly different from 1 at the level of 5% considering the non participation to the labor force in comparison with the other choices, and at the level of 1% considering

the decision to work in a definite segment with regard to the non participation. Hence, we conclude that in this case the simple multinomial logit is not an appropriate modeling tool. This expected result is consistent with others obtained with binomial logit models which use different factors to explain labor force participation and labor segment choice.

Variables that significantly affect the probability of the labor market segments choices are different from a function to another. But there are not the same variables that significantly affect the probability that a young urban professional would participate to the labor force. Hence, gender matrimonial status is only significant for labor market participation. Other demographic characteristics of the young urban professional at the exception of age, don't affect significantly the probability of working in a segment or another. Age is significantly linked, however, to the choice of the protected wage worker, the self -employment and family helpers segments. In the first two cases, probability of the segment participation increases, in the other, it reduces the participation probability. Ethnic group belonging does not have a significant effect on both choices, labor market and segment participation.

Human capital factors affect in various ways the labor market participation. Education level given by the diploma is not anymore an insurance for protected wage work. Paradoxically, the lack of diploma increases the probability to work. Young urban professionals in possession of secondary school diploma, which are the most numerous, enter massively on the self employment segment. There are two reasons explaining this effect. These young people do not have the resources to pursue high school education. But they already possess the minimum knowledge to create their own work. Young people of Duala are in need of working when they have failed at school's exams. Young people who keep on going to school after the "probatoire" diploma often give a hand to a relative in his activity. This is a way not to be only a burden for the household or the community. Also, professional school or training affects the probability to enter the exposed wage work segment.

Social capital factors, community network and household context, also affect differently the labor market participation. These variables representing the community insertion affect the labor market participation: the status of the chief of the household, exchanges statement, number of household's unemployed and occupied workers. The number of protected wage workers in the household affects considerably the probability of access to the protected wage work segment. Direct help to find a job is not significant for the choice of a segment. Actually, direct aid is globally useful to find a job.

The characteristics of labor demand, like the type of workshop, workweek duration and the number of jobs affect the probability to work in the labor market segments, except for family helpers.

The relevant chi-square test statistic is statistically significant at the five percent level for each of the estimated function and for all variables, except in a few cases. The exceptions are constituted of the same factors of discrimination that were already excluded because of their lack of significativity in the binomial model. We tested again for confirmation : education level, help for job search, professional preference. Lack of professional preference has no effect on the labor market segment

choice. Workweek duration and duration in the job are significantly little above the five percent level. The Wald test statistics of the constraint that the probability to choose a labor market segment is equal for every segment is statistically significant at 0.1%. This confirms that labor market segmentation assumption is consistent.

The results interpretation of the model is complex. The significance of the parameter estimates is complicated by the multiple equations in the model. Nevertheless, the results are as expected and in line with what we observe during the survey on the field. Young urban professionals working as independent workers exhibit a moderate human capital level. They are older than others, they belong more frequently to independent workers' households. They benefit less than young protected wage workers of the help of the community. Hence, the fact that the head of the household is a protected worker or self employed increase self employment among young urban professional. This is reasonable considering that self-employment requires a starting capital. Self-employment is frequently carried out by different people in the same household. For instance, in the Haoussa community^{viii} present on New Bell's market, it is frequent to provide "young brothers" of the community with a certain quantity of products to start their activity. Young Haoussa learns from a relative how to organize his trade to make it flourish. He benefits from common infrastructure like warehouse or a stall on the market. He trades at the side of his relatives but with a wide independence and with the responsibility of a possible failure. Usually, trade and other self-employment activities do not benefit from such good conditions. Often, young urban self-employed do not have the essential equipment, they work strolling, in front of the house or on a market as stallkeeper. These young urban professionals working in the street trade are often keen to become real entrepreneurs with a big store, or a workshop with wage workers and a certain volume of business.

Young urban professionals confined to precarious jobs (20.7% of the total) cumulate handicaps. Mostly younger than protected wage workers, they lack professional training. Sometimes, their work is a part time activity while still going to school. Because of the high level of unemployment, there is a lot of underemployment: work duration is limited to a few hours a day. They work in coffee and doughnuts sales in the morning, they replace a relative at mealtimes in his shop, they help to cook for a street restaurant, they carry shopping bags on the markets, they help on building sites to remove rubble, etc. Because of this precarious situation, they receive an important help from their household and community. This peculiar situation is also linked with the need to work. Usually, they left school because the head of the household lost his job, making indispensable that everybody find a job to raise resources. The money earned is given to the woman of the household who manage the house. They multiply jobs to bring additional income to the household. Some of the young urban professionals go to work outside the community, others with a relative: a few cumulate a job with school (10.4% of the total) and some don't go to school anymore (8.1%). Only 8.8% of young scholars don't work at all. Family helpers are not remunerated, but exposed wage workers pay back their earnings to the household. There are mainly young girls who help their mother on the market. Like exposed wage workers, family helpers usually work only a few hours a day helping a relative. Because of increasing unemployment, families' earnings have been reduced and young people have

to raise family income. Some must leave school and they are found on the exposed wage workers segment. Others follow an apprenticeship or keep going to school but help at the same time a relative.

Introducing the monthly earnings estimate as a semi-logarithmic equations on each labor market segment strengthen the model's results. We have only one earnings equation but tested in the different segments. The statistic tests of chi-square indicate the same results as before. Earnings are positively and significantly correlated to the labor market segment choice. The chi-square test of model appropriateness is significant at the one percent level. Pearson chi-square test for each variable is also significant at one percent level. When we introduce the other variables in the segments' functions, the earnings' parameter estimates are still positive but no more significant. This result suggests that earnings don't constitute the main explanatory factor of the decision to choose to work in a given labor market segment. Estimates of distinct earnings functions don't give different results. Heterogeneous of inferred incomes is not as important as to deduce, at least for newcomers on the labor market, that incomes are the main cause of labor market participation in given segment.

Incomes are not significantly different between protected wage workers and self-employed. Respectively 38.3% and 32.5% of the first one and of the last one belong to the upper income class. This result must be nuanced. Earnings of young protected wage workers are similar and concentrated around an income of 20.000 Fcfa, when difference in earnings are much more important for self-employed. 75.8% of the protected wage workers earn more than 10.000 Fcfa a month when only 61.5% of self-employed earn this amount. But another difference is that 25% of self-employed earn less than 4500 Fcfa a month. These self-employed have little earnings and find it difficult to replace tools, equipment, supply or raw material. The remaining benefit is used to struggle along. Family help is therefore essential. Hence, earnings keep on converging but most of all because of decrease in wage earnings.

However, income is on the other hand a discriminating factor between protected wage workers and exposed wage workers. Incomes can double from one segment to the other. Only 26% of young exposed wage workers earn more than 10.000 Fcfa and 45.5% earn almost nothing: this is due to apprentices that earn essentially tips. When they begin to have practical experience, they manage to have their own customers in the neighborhood, or they divert a part of their master's customers by offering better prices. The weakness of earnings explain that young exposed wage workers can't leave the paternal home to start their own.

The situation of young family helpers is similar. The earnings are derisory in this segment: 78.8% do not earn anything and the rest of them must cumulate numerous activities to earn something. Their income comes from gifts of the relative they help.

Even if earnings do not significantly determine the choice of a segment, segmentation does exist and depends on other factors: stability of work, stability of wage, work conditions (existence of a contract, duration of work, place of work) and capacity of help of the community network. However, young urban professionals do not choose freely the segment of work and even less a job. The allocation of workers is also determined by employers. Young urban professionals plan complicate

strategies seeking for help in their social network, proceed by steps, to obtain the desired employment. Employers hire first members of their own family or community, before choosing among all the unemployed workers. Community constraint is a major factor of segmentation. Employers do not choose totally freely neither the level of employment, nor the hiring criteria. They are constrained with community constraint. The community they belong to requires from them to favour recruiting members of the community. Hence, social capital factors increase professional and social insertion on stable jobs.

Estimations of simple and nested multinomial logit model of labor market participation and segment choice.

| Segments Variables | Logit multinomial | | Nested Logit multinomial | |
|---|-------------------|--------------------|--------------------------|--------------------|
| | Coefficient | Standard deviation | Coefficient | Standard deviation |
| <i>Non participation to the labor market</i> | | | | |
| Sex | | | | |
| Man | Ref. 1 | | Ref. | |
| Woman | 1,448 * 2 | 0,793 | 8,458 | 14,500 |
| Number of non working in the household | 0,300 *** | 0,070 | 2,252 *** | 0,788 |
| Head of Household status | | | | |
| Other status | Ref. | | Ref. | |
| Self employed | 1,019 ** | 0,461 | 5,998 | 5,167 |
| Diploma | | | | |
| Diploma | Ref. | | Ref. | |
| No diploma | -0,744 ** | 0,369 | -2,025 | 2,005 |
| Matrimonial status | | | | |
| Alone | Ref. | | Ref. | |
| Married or in couple | 0,850 ** | 0,402 | 1,615 | 2,042 |
| Balance of exchanges | | | | |
| Favourable or well-balanced | Ref. | | Ref. | |
| Unfavourable | -0,256 | 0,509 | 5,942 | 10,488 |
| Duration of apprenticeship | -0,643 ** | 0,275 | -2,023 | 2,558 |
| Patrimony | | | | |
| Nothing | Ref. | | Ref. | |
| Patrimony | -0,573 | 0,448 | -7,452 * | 4,242 |
| Number of unemployed people in the household | 0,357 ** | 0,162 | 3,502 ** | 1,662 |
| Number of people in the network | -0,053 | 0,051 | -0,041 | 0,297 |
| Number of self-employed people in the household | -0,493 ** | 0,213 | 3,401 * | 1,994 |
| <i>Protected wage workers</i> | | | | |
| Constant | -15,689 | 9,933 | -8,855 | 7,962 |
| Logarithme of wage | 0,610 | 1,042 | 0,105 | 0,833 |
| Age | 0,268 *** | 0,089 | 0,154 ** | 0,066 |
| Workweek duration | 0,042 *** | 0,009 | 0,045 *** | 0,008 |
| Help to find a job by network | | | | |
| No help | Ref. | | Ref. | |
| Help | 0,138 | 0,393 | 0,265 | 0,334 |
| Work contract | | | | |
| No contrat | Ref. | | Ref. | |
| Contrat | 7,295 *** | 1,312 | 6,172 *** | 1,111 |
| Mode of payment | | | | |
| Payment by day or by the piece | Ref. | | Ref. | |
| Other mode | 0,026 | 0,544 | 0,078 | 0,471 |
| Savings | | | | |
| No savings | Ref. | | Ref. | |
| Savings | 0,928 ** | 0,414 | 0,809 ** | 0,363 |
| Number of wage workers in the household | 1,447 *** | 0,350 | 0,943 *** | 0,175 |

Size of the household

| -0,130 * | 0,071 | -0,032 | 0,052 |

| | | | | |
|---|-----------|-------|------------|-------|
| Self -workers | | | | |
| Constant | -13,628 * | 7,897 | -3,405 | 2,964 |
| Income's logarithm | 0,653 | 0,801 | 0,038 | 0,304 |
| Sex | | | | |
| Man | Ref. | | Ref. | |
| Woman | 0,524 | 0,799 | 0,221 | 0,631 |
| Age | 0,285 *** | 0,067 | 0,098 *** | 0,024 |
| Head of Household status | | | | |
| Other status | Ref. | | Ref. | |
| Protected wage worker | 0,806 | 0,496 | 0,352 * | 0,193 |
| Exposed wage worker | -0,574 | 0,961 | -0,448 | 0,345 |
| Place of work | | | | |
| Professional place, office... | Ref. | | Ref. | |
| Strolling | 3,088 *** | 0,576 | 2,017 *** | 0,491 |
| Home or workshop | 0,865 ** | 0,416 | 0,573 ** | 0,246 |
| Balance of exchanges | | | | |
| Well-balanced | Ref. | | Ref. | |
| Favourable | -0,157 | 0,496 | 0,020 | 0,171 |
| Unfavourable | -0,112 | 0,566 | 0,483 | 0,426 |
| Number of self -employed in the household | 0,833 *** | 0,197 | 0,500 *** | 0,173 |
| Number of protected wage workers in the household | -0,628 * | 0,358 | -0,441 *** | 0,148 |
| Diplôma | | | | |
| Other diplôma | Ref. | | Ref. | |
| BEPC/GCEL | 0,558 | 0,395 | 0,215 * | 0,129 |
| Exposed wage workers | | | | |
| Constant | -4,496 | 9,109 | -2,708 | 6,527 |
| Income's logarithm | -0,095 | 1,018 | -0,113 | 0,722 |
| Professional training | | | | |
| Professional training | Ref. | | Ref. | |
| No professional training | 0,925 *** | 0,358 | 0,790 *** | 0,285 |
| Sex | | | | |
| Man | Ref. | | Ref. | |
| Woman | 0,497 | 0,701 | 0,046 | 0,648 |
| Age | 0,056 | 0,077 | -0,029 | 0,047 |
| Duration in work | 0,004 | 0,007 | -0,002 | 0,006 |
| Number of men in the household | 0,173 | 0,110 | 0,176 * | 0,091 |
| Balance of exchanges | | | | |
| Favourable or well-balanced | Ref. | | Ref. | |
| Unfavourable | 1,437 *** | 0,421 | 1,280 *** | 0,309 |
| Ethnic group | | | | |
| Other ethnic group | Ref. | | Ref. | |
| Littoral | -0,176 | 0,362 | -0,072 | 0,277 |
| Head of Household status | | | | |
| Other status | Ref. | | Ref. | |
| Self -employed worker | 0,298 | 0,390 | 0,367 | 0,307 |
| Exposed wage worker | 0,644 | 0,727 | 0,553 | 0,512 |
| Work contract | | | | |
| On his own | Ref. | | Ref. | |
| Contract | 8,138 *** | 1,336 | 7,212 *** | 1,134 |
| No contract | 2,629 *** | 0,463 | 2,417 *** | 0,388 |
| Place of work | | | | |
| Other place | Ref. | | Ref. | |
| Home, workshop | 1,359 *** | 0,356 | 1,228 *** | 0,301 |
| Situation with school | | | | |
| Other : school or school and work | Ref. | | Ref. | |
| Work without school | 1,753 *** | 0,571 | 0,937 * | 0,512 |
| Number of exposed wage workers in the household | 1,115 ** | 0,434 | 0,853 *** | 0,324 |
| Number of protected wage workers in the household | -0,317 | 0,338 | -0,263 | 0,215 |

| | | | | |
|---|------------|------------------|------------|------------------|
| Family helpers | | | | |
| Constant | 2,779 * | 1,507 | 1,603 ** | 0,720 |
| Age | -0,181 *** | 0,066 | -0,134 *** | 0,036 |
| Situation with school | | | | |
| Other : school or school and work | Ref. | | Ref. | |
| Work without school | 2,680 *** | 0,507 | 2,075 *** | 0,477 |
| Duration in work | 0,033 *** | 0,007 | 0,023 *** | 0,005 |
| Balance of exchanges | | | | |
| Unfavorable or well-balanced | Ref. | | Ref. | |
| Favorable | -0,559 | 0,439 | -0,284 | 0,233 |
| Number of exposed wage workers in the household | 0,103 | 0,515 | -0,062 | 0,296 |
| Number of protected wage workers in the household | -0,023 | 0,301 | 0,123 | 0,129 |
| Head of Household status | | | | |
| Other status | Ref. | | Ref. | |
| Self-employed worker | 0,009 | 0,460 | 0,207 | 0,270 |
| Sex | | | | |
| Man | Ref. | | Ref. | |
| Woman | 1,188 | 0,808 | 0,710 | 0,612 |
| Duration of apprenticeship | -0,220 | 0,239 | -0,253 | 0,199 |
| Diploma | | | | |
| Other diploma | Ref. | | Ref. | |
| Probatoire or higher | 1,053 * | 0,587 | 0,179 | 0,341 |
| Patrimony | | | | |
| Nothing | Ref. | | Ref. | |
| Patrimony | | 0,461 | -0,433 | 0,346 |
| Savings | | | | |
| Savings | | | Ref. | |
| No savings | | 0,442 | -0,285 | 0,250 |
| Number of women in the household | 0,249 *** | 0,091 | 0,130 ** | 0,065 |
| Inclusive values | | | | |
| No labor market participation | NC 1 | | 0,615 ** | 0,276 |
| Labor market participation | NC | | 16,625 *** | 4,332 |
| Sample size | 627 | | 627 | |
| -2 Log Likelihood 3 | -1118,060 | 1189,941 (0,000) | -1118,060 | 1594,398 (0,000) |
| R ² | 0,635 | | 0,713 | |
| adjusted R ² 4 | 0,625 | | 0,705 | |

Notes : (1) Ref. reference NC= not concerned ; (2) *** : significant at 1% ; ** : significant at 5% ; * : significant at 10% ; (3) Likelihood test calculated according to the difference $RV = 2(L_1 - L_0)$ where L_1 corresponds to -2 Log Likelihood of no constraint model and L_0 a -2 Log Likelihood of constraint model , it follows a χ^2 at $N(2k-1)$ degrees of freedom, k being the number of parameters;(4) Pseudo R² equal to $1 - (L_1/L_0)$

Conclusion

The nested logit model is well-suited to identify the steps in the process of young urban professionals' social insertion. Unlike the simple multinomial logit it allows for the selective relaxation of the assumption of the irrelevance of independent alternatives and allows to test the appropriateness of the assumption, thus to conclude in our case to a sequential decision process. The decision is the result of different attempts to enter the labor market. The failures of their attempts lead the young urban professionals to try to enter by a different way . Hence, the decision to engage in work is not identical to the decision to engage in wage work or in self-employment, in apprenticeship or in family help.

Results show that a successful social insertion relies not only on individual strategy but also on the situation of the labor market, hence of its segmentation. Young urban professionals do not choose to go to a definite segment where the earnings are the highest. The allocation of workers between segments is not the result of a free process but rely on a queue phenomenon. Assets owned by young urban professionals exert a significant positive effect on social insertion. That is why social capital constitutes such a determinant factor: in a period of economic difficulties, community support is decisively critical to obtain some help for self-employment or wage work.

The results also show the way economic policy could improve labor market entrance. One policy currently under consideration that would improve self-employment is to provide easier access to loans for young urban professionals lacking assets : a program of loans with a low rate of interest and a strict calendar of repayment coupled with a help in management. As stressed above, human capital, especially when we consider professional training, is a determinant factor for social insertion. Targeted actions toward apprenticeship are a first possible step. A more ambitious policy would be to improve education efficiency. Improving the capabilities of young urban professional supposes policy enforcement facilitating access to education and improve the level of education, especially for vocational training. Another important way to strengthen capacities is to improve financial capacity by creating credit facilities.

Estimates of labor market participation and labor market segment choices must be considered with caution. One limit to the nested logit model is the consequence of its definition itself: at each additional level in the hierarchical framework, the sample size decreases and so does inertia, and variances of estimators are higher in proportion. However, because we test many specifications, we believe that the one considered here is particularly robust. Although determining what could be a complete insertion process is outside the scope of this paper, the results suggest that young urban professionals proceed by different steps towards a stable situation. It would be interesting to examine what these young urban professionals will become through a multiround survey.

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NOTES

i The assumption that all errors terms are independent imposes equal response elasticities across alternatives. That is the effect (in percentage terms) of a change in the price of one alternative on the probability of choosing another alternative is identical for all pairs of alternatives. ??????????

ii See MCFADDEN D.L., «Chapter 24 : Econometric Analysis of Qualitative Response Models » in GRILICHES Z. and INTRILIGATOR M.D., *Handbook of Econometrics*, vol. II, Elsevier Science Publisher, 1984, pp. 1396-1446.

iii See TRANI J. F. (2001), « Etre jeune et survivre à Douala : activité, revenu et position sociale », Thèse pour le doctorat d'économie, 2001, Institut d'Etudes Politiques, Paris, 1020p.

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vi For a demonstration of labor market segmentation in Dual see TRANI J.F., 2001 op. cit. For other african market segmentation demonstration, see LACHAUD J. P., (sous la direction de), *Pauvreté et marché du travail urbain en Afrique subsaharienne : analyse comparative*, 1994, Publications du BIT, Genève, 270p.

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vii See BROWNSTONE D. and TRAIN K. (1999). « Forecasting new product penetration with flexible substitution patterns », *Journal of Econometrics*, 89, 109-129.

viii Ethnic group of North Cameroon, belonging to Islam, specialised in food trade and in cattle-breeding. They specialize in Duala in the trade of some food products like onions, beans, tubercles, etc.