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The Effects of Remittances from International Migrants on Labor Supply in Cameroon

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Abstract: The purpose of this paper is to first determine the effect of remittances from international migrants on the labor supply in Cameroon. On the other hand, we analyze the effect of receiving these funds on the labor supply of members of beneficiary households according to gender and standard of living. We apply the IV-2SLS method on data from the fourth Cameroonian Household Survey carried out in 2014 (ECAM 4), through the consumer choice model of Becker (1965) adapted to the family economy. From this analysis, it follows that in general, there is a negative effect of remittances from international migrants on the labor supply in Cameroon. The funds received lead to a decrease in labor hours for women while a slight increase is observed for men. Looking at household living standards, the results show that the reduction in working hours is localized only in poor and middle households, while no influence is observed in very poor, rich and very rich households.

Keywords: migrant remittances; labor supply; gender; standard of living

JEL Classification: O15; D11; F22; J16; J21; J22

1. Introduction

For several decades, there has been growing interest in the effects of remittances from international migrants on countries of origin. Now higher than official development assistance, these funds, according to forecasts by the Global Knowledge Partnership on Migration and Development (KNOMAD), tend to be higher than the combined amount of Official Development Assistance and Foreign Direct Investment in a few years (Barne & Pirlea, 2019).

These flows, mainly due to increasingly intense international migration, have become an important private financial resource for the countries of origin of migrants. The amount of these transfers reaches very high figures and increases over time.In 1990 for example, the total amount was $ 31.1 billion. In 2017, it was 613 billion, or about 20 times the amount in 1990.

Also in Cameroon, as in most developing countries, transfers from foreign countries are significant. In fact, they were $ 30 million in 2000, $ 103 million in 2004, 167 million in 2007 and 115 million in 2010. In 2013, we went to about $ 244 million to reach $ 345 million in 2018. On During the period 2010-

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2018, transfers from migrants to Cameroon amounted to approximately 2.13 billion dollars[1], thus placing it in second position in the ECCAS[2] zone according to the report entitled "Panorama of remittances in ECCAS countries" carried out by the African, Caribbean and Pacific Group of States and the European Commission.

These huge amounts received have led several authors to study their impact on different aspects of the economy of this country.These studies thus make the link between remittances from international migrants and poverty (Mbouyou, 2014), household spending (Meka'a, 2015), farmers' production decisions (Molua, 2009), economic growth (Kevin & Fabien, 2021; Adarkwa, 2015); the living conditions of households (Nouetagni & Hamadou, 2015).

However, the consequences of remittances on the labor market, in particular on the labor supply, which is an essential lever for development, have so far not received real attention in Cameroon. Indeed, classical economists such as Ricardo, Karl Marx already considered the labor supply as the main source of production by the labor offered to companies. It is also the basis of consumption which itself stimulates investment.

It turns out that the effect of remittances on the labor supply is very decisive for development. On this subject, two schools resulting from the theories of the "balanced growth" and of the "asymmetric development" clash. De Haas qualify them as optimistic and pessimistic.

For optimists[3], remittances can increase the supply of labor through investment. Indeed, these funds can be used for the creation of income-generating activities within the household with its various members as main employees (Rodriguez & Tiongson, 2001). These funds can also be used for starting or expanding a business.

For the pessimistic[4] school, remittances tend to reduce the supply of labor. Indeed, these funds, constituting an increase in income, increase the level of reservation salary understood as the amount of additional earnings that an individual would need to give up a unit of free time while he is not working (Kalaj, 2009). Rather, the beneficiaries of these funds increase their leisure consumption (Cox-Edwards & Rodriguez-Oreggia, 2009).

However, for heterogeneous people like De Haas (2008), there is no established sense of the effect of transfers on labor supply. This heterogeneity is based not only on the absence of an automatic mechanism by which transfers have positive effects on the economy of the countries of departure (Papademetriou & Martin, 1991), but also on the contradiction that exists between the results of the different empirical work. This heterogeneity also arise from the different characteristics of the countries studied, the large difference in the amounts received, the characteristics of the migrant, his motivations, the reasons for his displacement, the type of migration, the context and the community in which the migrant's family lives.

In this paper we therefore study the effects of remittances from international migrants on the labor supply in Cameroon. Beyond this objective, we propose to enrich the literature by carrying out a differentiated

[1] Data of World Developpement Indicator.
[2] Economic Community of Central African States.
[3] Migration optimists draw heavily on neo-classical theories of migration economics and developmentalist modernization, all of which are affiliated with the functionalist paradigm of social theory.
[4]Pessimists draw their inspiration from structuralist social theory, which encompasses theories of neo-Marxism, dependency, world systems, and, at least to some extent, cumulative causation.

analysis according to gender and standard of living. For the rest of the paper, section II is devoted to the literature review, section III to methodological considerations, section IV to the presentation and interpretation of the results. The paper ends with a conclusion.

2. Literature Review

a. Theoretical framework of the link between migrant remittances and labor supply

According to the neoclassical model of labor supply, remittances forming part of non-work-related income represent one of the main determinants of the budget constraint under which individuals maximize their utility through the allocation of time between market activities and non-market (Killingsworth, 1983). Remittances would then determine the distribution of time between the labor market and leisure activities (Kalaj, 2009). This supposes that an increase in the funds received act positively on the reservation wage of beneficiaries through an income effect allowing them to increase their level of leisure by reducing their labor supply (Amuedo-Dorantes & Pozo, 2006).

Thus, the regular obtaining of non-worked income such as remittance can lead to discouragement or even resignation from work of members of recipient households. This phenomenon is referred to as "discouraged participation" (Cox-Edwards & Rodríguez-Oreggia, 2009). On the other hand, remittances are simply a replacement for the contribution of the migrant worker if he had remained in his country (Naiditch & Vranceanu, 2008). We then speak of "neutral participation" to mean that the presence of remittances should not modify the participation decision of members who have remained in the labor market, unless the amount differs significantly from the household migration expenditure.

However, receiving remittances from migrants can boost the labor supply of household members. Indeed, the migration of a productive member increases the household dependency ratio given the subtraction of its contribution coupled with a drying up of the savings committed to finance its displacement. It is therefore compulsory to replace this work or this absent income, especially since the departure of the migrant is not synonymous with sending funds upon arrival in the host country (Amuedo-Dorantes & Pozo, 2006). This effect of distribution of tasks and contributions in the household is even more accentuated when the household consists of only two spouses (McElroy, 1981).

In effect, the migrant worker's wife assumes the role of both parents in raising the children during the spouse's absence. In addition, she plays a central role in establishing the family budget and, in cases where the family has a small business, she is in charge of it. Her involvement in the running of the household is increasing. Her labor supply then increases, especially if she and her husband had been complementary in the household's production before her departure.

Beyond the influence of the reception of remittances from migrants on the labor supply, the very decision to participate in the labor market depends first of all on the characteristics of the individual such as his education or age. These characteristics reflect the potential market wage of the individual, so older, more educated workers are expected to earn higher wages given their experience and training. Higher potential earnings should then increase the likelihood of participating in paid employment. Likewise, family attributes, while they may not affect potential market wages, do affect reservation wages. They are among others the number of dependents, their age structure, marital status, gender. standard of living.

But the fact remains that the main impact on the reservation wage is due to the size and regularity of remittances which can then produce a dependency effect. The presence and strength of this effect depends on the bonds and dynamics of the family. Thus, strong family ties imply large and stable remittance flows from the migrant worker. But since migration is seen as weakening family ties, the flow of remittances is not secure. In these circumstances, members of the migrant's household are obliged as time passes to offer labor as transfer amounts decrease (Johnson & Skinner, 1986).

For Azam and Gubert (2005), the amount of the remittance that influences the reservation wage, itself depends on the level of household income. For these authors, beyond a certain income threshold, migrant members no longer find it necessary to send funds. Two opposite effects are observed. Firstly, households are encouraged to reduce their level of effort in order to receive a transfer from migrants, thus taking advantage of a situation of information asymmetry. Secondly, it is not sure that the migrant can make the transfer even when the family income is below the critical threshold. In this case, households suffer a very significant welfare loss. The authors therefore highlight a problem of moral hazard. Households that rely on migrant income, on average experience lower production and loss of effort.

Finaly, it turns out that several parameters are likely to influence the effect of remittances on labor supply. In this paper we will focus on the gender and standard of living of households.

b. Empirical framework

Various empirical studies have been carried out to determine the effect of remittances on labor supply. The results differ according to geographic and temporal considerations, gender and even the standard of living of the beneficiaries.

Amuedo-Dorantes and Pozo (2006), for example for Mexico, using the per capita availability of Western Union outlets to instrument remittances, find that the overall supply of male labor does not vary depending on the evolution of remittances but modifies its composition by type of job. For men, there is a reduction in hours worked in the formal sector and an increase in the informal sector. For women, remittances are associated with a reduction in women's work in the informal sector.

Also, in Mexico, Cox-Edwards and Rodriguez-Oreggia (2009) instead use propensity score matching to separate persistent remittances from sporadic remittances. Using data from the 2002 National Employment Survey, they find that regular remittances have no effect on labor force participation. However, they observe a positive effect of remittances on women's labor supply through the creation of family businesses and a negative effect on men's labor supply in Mexican states with a weak tradition of emigration.

In Albania, Konica and Filer (2009), using the Living Standards Measurement Survey for 1996, suggest that remittances have a negative effect on women's participation in the labor market due to higher income from abroad. However, they find that neither the existence of emigrants in the household nor the amount of remittances received affected the participation of Albanian men in the labor force.

Funkhouser (1992) for Nicaragua shows that remittances stimulate entrepreneurial activities (self-employment) of men and reduce the labor supply of women.

Azizi (2018) examines the effects of workers' remittances on labor supply using data from 122 developing countries from 1990 to 2015. To address the endogeneity of remittances, it estimates bilateral

remittances and uses them to create weighted indicators of remittance countries. These weighted indicators are used as instruments for remittances in recipient countries. The results obtained in this study indicate that remittances decrease the participation rate of women but does not affect the participation rate of men.

Rodriguez and Tiongson (2001) for the Philippines, shows that remittances reduce the labor supply of non-migrants. This income effect is small, but relatively larger for men than for women.

Acosta et al. (2008) find for 10 Latin American and Caribbean countries that remittances reduce the number of hours worked per week. This negative effect is present in both urban and rural areas. They use as an instrument the share of households in the country that receive remittances, interacting with household characteristics that affect their likelihood of migrating. They also find that reductions in labor supply caused by remittances tend to be much smaller among those with more education.

David and Claire (2017), for Haiti use data from the survey on living conditions after the earthquake carried out at the end of 2012. The results show a significantly lower propensity to work for members of beneficiary households and a negative effect of transfers on total hours worked in households. They also suggest that the effect depends on the nature of the transfers (external, internal, in cash, in kind and frequency) and on the position of the individual in the household (primary or secondary members).

In Jamaica, Kim (2007) found that remittances had a negative effect on labor market participation, but not on weekly working hours. The author concluded that household members who receive funds have higher reserve wages and reduce labor supply by leaving the labor force or showing less eagerness to seek employment.

Guha (2013) for Bangladesh, having applied the Dynamic Stochastic General Equilibrium (DSGE) model argues that a sudden increase in foreign remittances translates into a decline in labor supply and production.

Vadean et al. (2017), using data from the 2007 Living Standards Survey, after controlling for endogeneity by the IV approach, found no effect of remittances on reducing labor supply, on unpaid and remunerated family work. Conversely, there is a positive effect on self-employment without pay. In addition, the results show that remittances mainly help poor households in rural areas to acquire their own land.

Posso (2012), using aggregate panel data from 66 countries in the Middle East and Africa, Asia and the Pacific, Latin America and the Caribbean for the period 1985-2005, highlighted a positive and significant relationship between remittances and the overall labor supply. This relationship is even more meaningful for men.

Murakami et al. (2021) estimate the effect of international migration and receipt of remittances on the labor supply decisions and employment of left-behind family members in Tajikistan by applying a control function using single high frequency household panel data. They find that the receipt of funds reduces the labor supply of members left behind.

3. Methodological Approach

In this section, we present the model used (a), its econometric specification (b), the description of its variables (c), the data source and the estimation method (d).

a. theoretical basis and empirical model

In the labor market, each individual's labor supply is represented by the number of hours they are willing to provide for different wage levels (Cahuc & Zylberberg, 2001). Neoclassical theory relies on the consumer choice model to analyze this relationship. Indeed, this function stems from the allocation of time between market work and leisure. If the individual decides to work, the time he will devote to market activities will be obtained by maximizing a utility function under constraints. Starting from a collective type model, each individual maximizes a noted utility function:

$$U = U(C; L; \theta) \quad (1)$$

with C the individual's consumption of goods, L his leisure consumption and θ the vector of his personal characteristics. Three hypotheses are posed. First, the function U is assumed to be twice differentiable, increasing with respect to its arguments and almost concave. The second assumption implies that the marginal utilities are positive, and the last that the indifference curve is convex at the origin (Cahuc & Zylberberg, 2001). We can express these conditions as follows:

$$U_C = \frac{\partial U}{\partial C} > 0,\ U_L = \frac{\partial U}{\partial L} > 0,\ U_{CC} = \frac{\partial^2 U}{\partial^2 C^2} > 0,\ U_{LL} = \frac{\partial^2 U}{\partial^2 L^2} > 0 \quad (2)$$

The level of utility along an indifference curve is constant, and its slope represents the amount of goods an individual is willing to give up for an extra hour of leisure. The total consumption (C) is given by the consumption of market goods (CM) to which is added the consumption of domestic goods (CD) which is represented by an increasing and concave function of the hours of domestic work (HD):

$$CD = F(HD),\ F'>0 \text{ et } F''<0 \quad (3)$$

The goal of the individual is to achieve an optimal level of satisfaction by proceeding by trade-off between consumption and leisure. But time and budget constraints are imposed on him. Indeed, the number of hours per day (T) is limited and must be shared between market work (HM), domestic work (HD) and leisure (L). Assuming that the individual spends all of his income, the saturated budget constraint and the time constraint can therefore be represented by:

$$C + wL = [F(HD) - wHD] + wT + RF + RM \quad (4)$$

Where w is the hourly wage, HD the number of hours for household production, RF the woman's non-wage income and RM the other household income. This constraint establishes that the consumption of goods and leisure must be equal to the profit obtained from domestic activities.RD= F(HD) - wHDplus the potential incomeM = wT+ RF+ RM.

The optimum amount of hours for household chores is achieved by maximizing R&D. The first order condition of this problem is given by F '(H * D) = w. This shows that the allocation of working time between domestic and salaried activities is determined by the relative productivities of the two types of

activity. Thus, having chosen H * D the individual follows the usual utility maximization process, and the first order condition implies that equilibrium is reached at the point where:

$$\frac{U_L(C^*, L^*, \theta)}{U_C(C^*, L^*, \theta)} = TMS_{CL} = w = F'(H^*_D) \text{ et } C^* = \left[F(H_D) - wH_D\right] + w(T - L^*) + R \quad (5)$$

we obtain Marshallian demands for consumption C * = C (w; M; θ), leisure L * = C (w; M; θ) and hours intended for the labor market H * M = C (w; M; θ). The solution is obtained by equalizing the marginal rate of substitution between consumption, leisure and real wages.

With a higher salary, the individual could achieve a higher level of utility or satisfaction with the same number of hours of work offered.

However, there is not always an offer of a positive number of working hours. Indeed, the minimum income that an individual would ask to reduce the amount of leisure time consumed may be higher than that which the market is willing to pay (w). Therefore, the number of hours destined for the labor market will be zero.

Finally, the individual labor supply curve is given by the relationship between the hours of labor provided on the market (HM) and the hourly wage (w) once the participation condition is satisfied:

HM>0 iff w > w* (reservation wage)

HM= 0 otherwise

Now we have to consider that a wage increase can have two effects on the hours intended for the labor market. Higher wages increasing the opportunity cost of leisure and substitution can push individuals to increase their labor supply. The income effect on the other hand causes a renunciation of work and a maximization of leisure, especially when non-wage income such as remittances increase and make it possible to maintain the same level of consumption (Paul, 2018).

b. Econometric specification of the model

The model used to identify the effects of remittances on labor supply is that of Wooldridge (2003) derived from the consumer choice model whose equation is as follows:

$$LogH_M = \alpha_1 + \alpha_2 logW + \alpha_3 logR + \alpha_4 logR_F + M'\theta + \epsilon \quad (6)$$

Where $logH_M$ is the logarithm of annual hours worked, "lnW" is the logarithm of hourly wages, logR is the logarithm of other individual income, "$logR_M$" is the log of household non-wage income. The vector "M" represents the characteristics or control variables influencing the marginal value of time outside the labor market, "α" are parameters to be estimated. Finally, "ϵ" is the error term. In this work, we therefore take as "non-wage income" the remittances of international migrants received by Cameroonian households. Other control variables are introduced. The model therefore becomes

Log Hwi= α + β1 log sali+ β2 log remi+ βZi+ ui (7)

Where "Hw" represents the total weekly hours worked by household members, "sal" represents the actual hourly wages calculated as total monthly labor income, rem represents international remittances received by the household, and Z is a vector of individual and household characteristics.

c. Description of variable model

Dependent variable: the number of hours worked per week (Hw) is recognized in the literature as one of the main measures of labor supply (Chiappori & al. 2002; Vadean & al. 2017), following of these authors we use it to measure the labor supply.

Explanatory variables

The probability of being in the labor market is determined by several other characteristics that we divide into characteristics of residential mobility, characteristics of the individual, characteristics of the head of household and characteristics of the household.

Residential mobility

Migrant remittances (rem): Goods in cash sent by the migrant to his household of origin, we measure them by the logarithm of the amounts received in FCFA.

Household members' migration (mig): the departure of a household member leads to a reallocation of domestic tasks increasing the working hours of other members, especially if the household has an entrepreneurial activity. We do indeed foresee a positive effect of migration on working hours. Families with migrants take the value 1 and those who do not, take the value 0.

Characteristics of the Individual

Salary (sal): An increase in hourly wages means that the opportunity cost of spending time on leisure increases. The individual will tend to substitute work for his leisure. The income effect would mean that following an increase in wages, the individual decides to work less, if he considers that the increase in wages sufficiently compensates for the decrease in working hours, in the formation of his income. We take the logarithm of the salary amount in FCFA.

Marital status (mar): Marital status can influence the labor supply. In fact, the married people have responsiblilities for their families. It is then necessary to have an income likely to meet the needs of the members of the household. Therefore, the supply of labor is expected to increase. The number 1 will designate all marital situations that refer to expenses for household needs which include monogamous married couples, polygamous married couples, widowers, divorced / separated, those in a free union. Singles are represented by the number 0.

School attendance (sch): Labor supply is a function of the trade-off between work and investment in human capital (Ben Porath, 1967). Education and job offer therefore appear to be antagonistic. We expect a negative sign from this variable which takes the value 1 if the individual is attending school and 0 otherwise.

State of health (hlt): The state of health is undoubtedly an important determinant of the supply of work. Impaired health can increase the arduousness of certain activities and lead a person to reduce his labor supply or his job search effort. A person in poor health may also increase their demand for free time to be able to receive care. In general, the literature shows that most studies report a positive effect of health

on labor supply (Tessier & Wolff, 2005). The variable is operationalized such that 1 = poor health, 2 = fair; 3 = fairly good; 4 = good.

Characteristics of the head of household

Sex of the head of household (shh): When the household is managed by a woman, the dependency rate tends to be higher (Lachaud, 2008) because of the weak financial capacities of women. This suggests that heads of household when they are female are much more conducive to the entry of their children into the labor market. Our variable takes the value 1 if the head of the household is female and 0 otherwise, we expect a positive effect.

Income of the household head (ihh): When the income of the head of household is sufficient to meet the needs of the household, members of the household are exempted from performing market tasks at an early stage. They postpone dropping out of school as long as possible and consequently their labor supply is low if not non-existent. The variable is measured by the logarithm of the sum in FCFA.

The education level of the household head (ehh): The education of the head of household would exempt children from working and promote their education (Meka'a & Mbebi, 2015). So, we predict a negative effect of the level of the head of household on the labor supply. This variable is operationalized such that the data will take the value 1 if the respondent does not have a diploma, the value 2 if the respondent holds a CEPE / CEP, the value 3 for BEPC, 4 for probationary, 5 for baccalaureate, 6 for BTS / DUT / DEUG, 7 for degree, 8 for the MASTER and 9 if the interviewee holds a DOCTORATE / PHD.

Household characteristics

Household size (hsz): a household with a high number of members constitutes greater education and health costs (Meka'a & Mbebi, 2015). Generally, the financial means of the head of household being limited to meet the needs of the household, the members of said household are obliged to anticipate their entry into the labor market. In this regard we expect a positive sign on the labor supply.

Household standard of living (hsl): One of the hypotheses of the static model of household microeconomics called the "luxury axiom", postulates that in a household, to maintain the income above the threshold allowing to meet the basic needs, it is necessary the mutualisation of all the members. They are then forced to work (Blunch & Verner, 2000). When the household is easy, the reservation salary of its members is high. So they will reduce their intervention in the labor market. For this variable, the numbers 1, 2, 3, 4, 5 will designate the situations where the household is very poor, poor, average, rich and very rich, respectively. The expected sign is negative.

Place of residence (prs): The finding expresses a higher proportion of workers in rural areas than in urban areas. School, not being of all its importance, is then neglected for agricultural work which is moreover the main source of survival (Meka'a & Mbebi, 2015). But the work in rural areas is unpaid, it is mainly subsistence farming. Rural and urban areas take the numbers 0 and 1, respectively. We predict a positive effect of the place of residence on the labor supply.

d. Data source and estimation method

The data used are those of the fourth Cameroonian Household Survey (ECAM 4). The method we use is that of Instrumental Variables - Double Ordinary Least Squares (IV-2SLS). Indeed, in our model, the

variable "migrant remittances" is correlated with the elements of the error term. In fact, there remains an endogeneity bias. Performing a simple OLS regression will give us invalid results. The source of this correlation between remittances and the error term may be due to reverse causality, omitted variables or even selection bias.

Ideally, an unbiased estimate of the causal effect would be the difference between the outcomes of households with remittances and those of a counterfactual scenario when these same households do not receive remittances. However, households with migrants tend to be selected on the basis of unobservable characteristics. Therefore, households without migrants will not be an interesting counterfactual for them. The principle is then to use instrumental variables to estimate the parameters of the model. These instrumental variables are correlated with endogenous variables but not with the error term. As the incentive to migrate to a country depends on the expected income profiles, the differences in the remuneration profiles varying according to the characteristics of the migrant, the characteristics of the migrant are therefore eligible as instruments (Chiquiar & Hanson, 2005).

Although the validity of the instruments is generally debated and difficult to verify, we support the identification strategy described in this work through the "p" values of Sargan's overidentification tests.

4. Presentation of results and interpretation

a. Result of the estimates1

The results are presented in four phases. Table 1 shows the results of estimating the effect of remittances on hours worked per week for the entire population. Tables 2 and 3 shows the estimation results for males and females, respectively. Table 4 expresses the results according to the standard of living of households.

Table 1. Effect of Remittances from International Migrants on Working Hours Per Week

Variables	IV – 2SLS	IV-GMM	Variables	IV – 2SLS	IV-GMM
Residential mobility			**Characteristics of the head of household**		
Migrant remittances (rem)	-0,31 ** (0,15)	-0,35* (0,21)	Sex of the head of household (shh):	0,61** 0,24	0,62** (0,29)
Household members'migration (mig)	0,19*** (0,49)	0,09** (0,66)	Income of the household head (ihh)	-0,81** (0,37)	-0,85** (0,42)
Characteristics of the individual			The education level of the household head (ehh)	-0,14 (0,09)	-0,15 (0,11)
Salary (sal)	0,20*** (0,06)	0,21*** (0,07)	**Household characteristics**		

[1]Sample made up of approximately 46,500 individuals (men + women).The female population amounts to 16,849 individuals while that of men consists of 17,503 individuals.Among the 13,000 households surveyed, approximately 1,950 are very poor, 5,150 are poor, 5,075 are average, 300 are rich and 100 are very rich.19022 individuals offer working hours per week.

Marital status (mar)	0,62** (0,28)	0,65* (0,38)	Household size (hsz)	0,15** (0,06)	0,16** (0,07)
School attendance (sch)	-2,40*** (0,74)	-2,40*** (0,47)	Household standard of living (hsl):	-0,54** (0,26)	-0,57 (0,39)
State of health (hlt)	1,24** (0,53)	1,34*** (0,63)	Place of residence (prs)	0,50 (0,34)	0,56 (0,48)
Constant	-2,01 (1,67)	-2,85 (3,37)			
R-Square	0,7061	0,6838			
Prob > chi2	0,0000	0,0000			
Sargan p-value	0,72	0,61			
Instruments: migrant's age, migrant's sex, migrant's level of education					

**** significance level at 1%; ** significance level at 5%; * significance level at 10%.*

Table 2. Effect of Remittances from International Migrants on Men's Working Hours Per Week

Variables	IV – 2SLS	IV-GMM	Variables	IV – 2SLS	IV-GMM
Residential mobility			**Characteristics of the head of household**		
Migrant remittances (rem)	0,05** (0,27)	0,06* (0,25)	Sex of the head of household (shh)	0,16* (0,53)	0,12* (0,46)
Household members'migration (mig)	0,03 (0,50)	0,08 * (0,40)	income of the household head (ihh)	-0,43** (0,74)	-0,37* (0,92)
Characteristics of the individual			The education level of the household head (ehh)	-0,36 (0,61)	-0,54 (0,62)
Salary (sal)	0,20* (0,11)	0,18 *** (0,06)	**Household characteristics**		
Marital status (mar)	0,80**(0,74)	0,84** (0,80)	Household size (hsz)	0,12 (0,12)	0,07 (0,13)
School attendance (sch)	-0,62* (0,62)	-0,68* (0,61)	Household standard of living (hsl)	-1,15*** (0,59)	-1,02 **** (0,56)
State of health (hlt)	3,15*** (1,11)	2,91** (1,14)	Place of residence (prs)	-1,59 (0,65)	-1,39 (0,70)
Constant	-5,22 (3,54)	-5,54* (3,32)			
R-Square	0,59	0,57			
Prob > chi2	0,0008	0,0000			
Sargan p-value	0,52	0,59			
Instruments: migrant's age, migrant's sex, migrant's level of education					

*** significance level at 1%; ** significance level at 5%; * significance level at 10%.

Table 3. Effect of remittances from international migrants on women's working hours per week

Variables	IV – 2SLS	IV-GMM	Variables	IV – 2SLS	IV-GMM
Residential mobility			**Characteristics of the head of household**		
Migrant remittances (rem)	-0,53* (0,30)	-0,51** (0,21)	Sex of the head of household (shh)	0,23 (0,65)	0,12 (0,77)
Household members'migration (mig)	0,26* (0,92)	0,39*** (0,64)	income of the household head (ihh)	-1,15 (0,97)	-1,05 (1,14)
Characteristics of the individual			The education level of the household head (ehh)	-0,04** (0,18)	-0,07 (0,16)
Salary (sal)	-0,057 (0,15)	-0,06 (0,12)	**Household characteristics**		
Marital status (mar)	-1,26*** (0,96)	-1,29* (0,73)	Household size (hsz)	1,82*** (0,64)	1,79** (0,69)
School attendance (sch)	-1,33** (0,60)	-1,32** (0,59)	Household standard of living (hsl)	-0,38*** (0,58)	-0,41*** (0,37)
State of health (hlt)	1,17*** (0,72)	1,11*** (0,68)	Place of residence (prs)	-0,55 (0,81)	-0,50 (0,65)
Constant	-2,14 (3,49)	-1,87 (2,76)			
R-Square	0,54	0,54			
Prob > chi2	0,0075	0,0000			
Sargan P-value	0,80	0,80			
Instruments: migrant's age, migrant's sex, migrant's level of education					

**** significance level at 1%; ** significance level at 5%; * significance level at 10%.*

Table 4. Effect of remittances from international migrants on working hours per week according to household standard of living

Variables	Very poor	poor	average	rich	Very rich
Residential mobility					
Migrant remittances (rem)	0,55 (0,37)	-0,49** (0,37)	-0,71* (0,31)	-0,10 (0,10)	-0,73 (0,29)
Household members'migration (mig)	0,48** (1,17)	0,57* (0,69)	0,05** (0,58)	-0,28 (0,20)	1,63 (0,60)
Characteristics of the individual					
Salary (sal)	0,12** (0,14)	0,23** (0,16)	-0,08 (0,13)	-0,002* (0,04)	-0,11 (0,13)
Marital status (mar)	0,93** (0,68)	0,23*** (0,84)	0,29 (0,71)	0,29 (0,24)	-1,06 (0,65)
School attendance (sch)	1,16 (1,78)	0,89 (2,01)	-2,30*** (1,69)	-0,01 (0,58)	1,09** (1,55)
State of health (hlt)	1,24** (1,26)	2,14* (1,40)	2,13* (1,17)	0,29*** (0,40)	1,52** (1,09)
Characteristics of the head of household					
Sex of the head of household (shh)	0,94* (0,58)	0,30*** (0,69)	0,42* (0,58)	-0,06*** (0,20)	-0,148*** (0,53)
income of the household head (ihh)	-0,35 (0,65)	-1,03 (0,67)	0,67 (0,56)	-0,09* (0,19)	-0,19 (0,52)

The education level of the household head (ehh)	0,02 (0,22)	-0,10 (0,22)	0,25 (0,18)	-0,13 (0,06)	0,04** (0,17)
Household characteristics					
Household size (hsz)	0,16*** (0,15)	0,08** (0,14)	0,06** (0,12)	0,01 (0,04)	-0,20 (0,11)
Place of residence (prs)	-0,86 (0,82)	-0,006 (0,41)	0,24 (0,34)	-0,12 (0,11)	-0,09 (0,31)
Constant	1,71 (4,02)	-7,83 (5,43)	9,02 (4,57)	-2,19 (1,58)	2,75 (4,24)
R-Square	0,60	0,58	0,63	0,61	0,59
Prob > chi2	0,0098	0,0052	0,0082	0,0000	0,0029
Sargan p-value	0,74	0,81	0,73	0,54	0,63
Instruments: migrant's age, migrant's sex, migrant's level of education					

**** seuil de signification à 1% ; ** seuil de signification à 5% ; * seuil de signification à 10%.*

b. Results interpretation

Before the interpretation of the coefficients (2), we address the issues of the validity of the estimate (1).

i. The validity of the model, Sargan test and endogeneity test

Before considering the different coefficients obtained from the estimate, we must first check the reliability of the model. Our results present us with Prob > chi2 less than 5%. This testifies to the overall significance of the model. In addition, our R-Squares vary from 54% to 60%, thus demonstrating an average explanatory power of exogenous variables for the working hours of individuals.

The technique we use to get around endogeneity problems, namely that of instrumental variables, absolutely requires that the latter be valid. to check the validity of the instruments, we use the Sargan overidentification test. Our P-Values as indicated in the various tables above are greater than 5%. Our instrumental variables are then valid.

ii. Interpretation of coefficients

The effect of remittances from international migrants on labor supply in Cameroon seems to match the predictions of the literature. This stipulates that an increase in non-wage income has the effect of increasing the reservation wage of beneficiaries which results in a reduction of work and a higher consumption of leisure (Petreski, 2019). Our results corroborating literature are in line with the work of several authors such as Claire and David, (2017); Chami et al. (2018); Sharma and Cardenas (2018). They stipulate that an increase of 1% in the amount of migrant fund transfers is associated with a 0.3% drop in hours of work per week.

However, this decline varies differently depending on gender. While the funds received have a slight positive effect on men's working hours per week (0.05%), the opposite effect is observed for women with a higher coefficient (-0.53%). In the empirical literature, remittances are mostly associated with a decrease in the supply of female labor (Azizi, 2018; Sousa & Suaza, 2018; Acosta, 2006), and very little only with an increase in that of men. (Funkhouser, 1992). Indeed, this increase in men's work hours may be due to the creation or development of entrepreneurial activities following the receipt of the funds. For women, the reduction of the labor supply as a result of remittances can be explained by the opportunity cost related to their choice of market activities. Indeed, for a woman, to choose to work is synonymous with getting rid of domestic activities, childcare, housekeeping. Thus, the receipt of fund

transfers can give women the opportunity to abandon their market activities to devote themselves to their household.

Our results also show how the recipients of remittances behave according to their standard of living. So it turns out that in very poor, rich and very rich households, funds have no effect on labor supply. In poor and middle-income households, there is a decrease of 0.4% and 0.7% respectively in hours worked when funds increase by 1%.

5. Conclusion

Labor supply is the basis of production and therefore a fundamental element in an economy. It is influenced by several factors of various kinds linked to the individual, his household and different incomes. One of these incomes refers to remittances from migrants. Indeed, these funds received from abroad which are not the counterpart of any benefit are found to have an effect on the labor supply and therefore on the level of the economy. Indeed, according to the theories of the labor supply, the reception of an income outside of work would have the effect of increasing the reserve wages of individuals, pushing them to a higher consumption of leisure to the detriment of the labor supply. This theory is verified in our study. However, the negative effect is only seen in women. So it turns out that women would prefer to give up their market activities if they receive regular funds from abroad to take care of their household. On the other hand, they can choose to work part time. Yet among men, an increase in working hours is observed and is believed to be due to the allocation of funds received for entrepreneurial activities.

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