African Journal of Science, Technology, Innovation and Development

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Boniface Ngah Epo [a] , Francis Menjo Baye [a] & Nadine Teme Angele Manga [a]

[a] Department of Economics and Management , University of Yaoundé II , Cameroon, PO Box 1365, Yaoundé
Published online: 03 Jun 2013.

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Investigating Disparities in Access and Returns to Endowments between Male and Female Headed Households in Cameroon[1]

Boniface Ngah Epo*, Francis Menjo Baye and Nadine Teme Angele Manga

Department of Economics and Management, University of Yaoundé II, Cameroon, PO Box 1365, Yaoundé

This paper investigates disparities in access and returns to endowments between male and female headed households in Cameroon using the Oaxaca–Blinder decomposition and the 2007 Cameroon Household Consumption Survey. In particular, synthetic variables for education and health constructed by the multiple correspondence analyses together with non-synthetic variables are used to explain household welfare and welfare-gaps along gender lines. The share of active household members, education, working in the formal sector and household size overwhelmingly account for disparities in access and returns to endowments between male and female headed households. Discrimination against female headed households is explained more by endowments such as education, health, share of active household members and working in the formal sector. The study concludes that public policy interventions which encourage education for all, employment, family planning and rural development in Cameroon might be potent for addressing gender-related disparities in Cameroon.

Keywords: Gender Disparity; Oaxaca–Blinder; Household economic well-being

JEL Classification: I32; O10

Introduction

This paper applies the Oaxaca (1973) and Blinder (1973) approach to investigate disparities in endowments and returns to these endowments between male and female headed households, and to construct a discrimination index. This approach permits us to obtain appropriate parameter estimates of income generating functions, and to use them to derive the partial effects of regressed factor endowments as well as their returns on gender disparities in Cameroon.

Disparities in endowments are perceived as a situation where male and female headed households have different welfare status because of discrepancies in their ability to access a particular endowment. Disparities in returns to these endowments, on the other hand, depict situations where returns differ because of differences in responsiveness due to the gender of the household head.

In this paper, the absence of societal discrimination (considered as a source of inequality) in the household income structure faced by men also applies to women. Endowments are sometimes distributed along gender lines, with women being discriminated upon. Even if male and female headed households have equal access to these endowments, returns to the endowments may differ because of their gender types. This scenario is evident in most underdeveloped countries like Cameroon.

The above observation is echoed in Becker's (1993) Nobel lecture on 'The Economic Way of Looking at Behaviour', which states that discrimination on the basis of race and gender can cause people to lower their aspirations and hopes, thus undermining their human capital aspirations. This may inevitably fuel social tension and fritter away any development efforts. This raises the issue of the key role of endowments, as means, for building adequate human capital stocks. Discriminating against women in terms of access and returns to endowment constitutes an assault on the basic concept of human capital (Becker, 1967; Grossman, 1972; Schultz, 1992), which requires that investing in key endowments, such as education and health, increases productivity irrespective of the gender orientations. Sen (1999) foregrounds this point by insinuating that by empowering women, the benefits are felt not only by the women themselves, but by the men, children and the society as a whole.

There exist limited empirical studies that can inform evidence-based policy making in Cameroon. Adequate information is essential because of the role played by women in fighting poverty[2] and participating in

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*Corresponding author. Emails: epongahb@yahoo.fr; bayemenjo@yahoo.com; nadyn2002@yahoo.fr

development (Boserup, 1970; Feldstein & Jiggins, 1994). Lachaud (1997) notes that female headed households suffer more from vulnerability related to well-being captured in terms of money, income, health, and education. New challenges, including globalization and climate change, disproportionately affect women. Socio-cultural foundations of most traditions in developing countries, including Cameroon, have outrightly been in favour of men, notably in relation to land inheritance. This prevents them from acquiring and developing land related assets or participating fully in realizing growth potentials that can help households break away from poverty and inequality traps (World Bank, 2005; Endeley & Sikod, 2006). These differences or disadvantages that are gender-based and skewed in favour of men affect supply responses and resource allocation both at micro (household) and macro levels of well-being (Sikod, 2007).

Gender analysts observe that women and children are more vulnerable.[3] Although women empowerment is one of the key Millennium Development Goals (MDGs) appropriated by the Government of Cameroon, Cameroon has been very slow in moving this process forward. According to the 2005 United Nations Development Programme (UNDP) Cameroon Office (MDG Progress Report, 2002; 2003) it seems unlikely, given the progress made so far, for Cameroon to attain most of the MDG3 objectives before the deadline. Similarly, the 2005 UNDP Country Office Report noted only a slight improvement in efforts geared at fostering the emancipation of women. This observation is sustained by the 2010 MDG assessment report which indicates that in 2007 most African countries posted only moderate improvements in gender empowerment and gender parity. Bias in government policy making in favour of men can be inferred from the weak position of women as a lobby group to push government to address gender sensitive issues (Epo et al., 2010).

In 2001, the incidence of poverty for men was 39.9% compared to 40.5% for women (Government of Cameroon, 2003). In 2007, while out of 10 households headed by men at least 4 were poor, this ratio for women stood at 3 out of 10 households headed by women. To some extent this observation is accounted for by the smaller number of households headed by women, transfer payments received from third parties and low levels of expenditure by women outside their household setup (National Institute of Statistics, 2008).

Gender disparities can be perceived relative to the levels of human capital between women and men. The rate of literacy between men and women stood at 66.5% against 46.6% in 2001 and 82.1% against 77.5% in 2007 (Government of Cameroon, 2009). In Cameroon, fewer women compared to men own land because of certain socio-economic and cultural constraints, particularly subordination of women within marriages and inadequate economic power to pay land market prices. In addition,

ownership to land inherited by widows is frequently challenged and encroached upon by men in many regions in Cameroon (Baye, 2010). The number of women that carry out petty trading activities in the informal sector is significant. These gender sensitive traits may reveal that Cameroon has been slow in moving the women's empowerment agenda forward.

The main purpose of this paper is to explore the characteristics of welfare gaps between male and female headed households. The specific objectives are: (1) to investigate the contributions of access and returns to endowments to welfare-gaps between male and female headed households by regressed-income sources; (2) to access the relative contributions of regressed-income sources to aggregate gender-discrimination in terms of endowments and treatment effects; and (3) to derive policy implications on the basis of the analysis.

Brief Review of Literature

An overview of the literature suggests the importance of studying gender and asset endowments, and the impact of these assets on rural welfare (Fafchamps & Quisumbing, 2002; Duflo, 2003; Cheryl, 2005). Other related issues include intra-household inequality (Quisumbing, 2003 and Haddad et al., 1997) and aspects linked to gender discrimination in Sub-Saharan Africa using the Oaxaca–Blinder Decomposition (Grun, 2004; Shepherd, 2008; Nordman et al., 2009).

Other studies tackling differences in endowments between male and female headed households include Blackden and Bhanu (1998), who analyse human assets and find that in sub-Saharan Africa (SSA) gender differentials in reproductive health disfavours women more than men. In terms of social assets, precisely norms, DasGupta (1987) observes that cultural rights and obligations favour sons relative to daughters in rural India. Ahuja and Filmer (1996) identify disparities in male–female educational attainments and enrolment levels in developing countries. Wan and Cai (2008) apply a multinomial Logit regression decomposition note that unequal access to other factors rather than pay is the cause of discrimination of gender wages in certain industries (sectors) in China. Klassen (2005) studies the impact of gender inequality of pro-poor growth and recognizes that there is little information on the impact of gender gaps on inequality. In this connection, the DFID (2007) reports that, on average worldwide, women represent about 17% in parliaments and remain severely under-represented in political and decision-making positions in many countries. This figure is considerably lower in countries such as Egypt, where just 2% of members of parliament are female. In Cameroon, the number is less than 20% of the total number of parliamentarians.

There are very few empirical studies that address differences in endowments along gender lines in Cameroon. In

this category, Sikod (2007) uses descriptive statistics attempts to distinguish between assets (private and public) that affect labour productivity and its influence on household decision making processes. Endeley and Sikod (2005) employ graphs and tables to infer the impact of the Chad–Cameroon pipeline using data collected from some villages situated along the pipeline routes and try to investigate how this affects gender relations, land resources and community livelihood. The study finds a bias in favour of men in terms of recruitment, and benefits obtained from the construction of the pipeline and the communities that benefited from this process. Fonchingong (1999) questions the extent of structural adjustment reforms on women and how this affects agricultural output in Cameroon. This study reveals that enhanced agricultural productivity could be observed if adequate government policies that empower women were reinforced. Fonjong (2001) examines the role of non-governmental organizations (NGOs) in enhancing the participation of women in fostering development.

These studies seek to understand gender concerns in Cameroon, but do not investigate the causal relationships that exist between endowments that may affect either the economic well-being of male and female headed households or the returns to these endowments. As value addition, we obtain regression estimates and use the Oaxaca–Blinder approach to investigate differences in endowments and returns to these endowments between male and female headed households. This study differs from Baye and Epo (2009) in that: (1) it uses the 2007 survey and (2) it incorporates a multidimensional flavour by using composite variables constructed from the Multiple Correspondence Analysis (MCA) method. This study addresses the related problems of correlates of household welfare and gender disparities in terms of access and returns to endowments.

Methodology

Let the male and female geometric mean of household expenditure be denoted by $\bar{Y}^M$ and $\bar{Y}^F$. We decompose the log-differential of the geometric mean Δ:

$$\Delta \equiv \log\left(\frac{\bar{Y}^M}{\bar{Y}^F}\right)$$
$$= \left(\log\left(\bar{Y}^M\right) - \log \bar{Y}^{0F}\right) + \left(\log\left(\bar{Y}^{0F}\right) - \log \bar{Y}^F\right) \quad (1)$$

where $\bar{Y}^{0F}$ is the counterfactual distribution setting aside disparities between male and female headed households. The male–female subsamples can be estimated by equations (2) and (3):

$$In y_{i,M} = X^i \beta^M + \varepsilon_i \quad (2)$$

and

$$In y_{j,F} = X^j \beta^F + \varepsilon_j \quad (3)$$

where $In y_{i,M}$ is the log of expenditure of male headed households i and $In y_{j,F}$ is the log of expenditure of female headed households j; β^M and β^F are the coefficients that determine the effects of factor endowments on household well-being and X^i and X^j are the vectors of personal endowments related to male i and female j. Since the regression function passes through the sample mean of X and y, taking the arithmetic average of equations (2) and (3), the stochastic ε term drops out. Designating the arithmetic mean by an over lined variable $\bar{y}^\alpha$, where $\alpha = M$ or F for men and women, respectively, then:

$$In \bar{y}^M = \bar{X}^M \hat{\beta}^M \quad (4)$$

and

$$In \bar{y}^F = \bar{X}^F \hat{\beta}^F \quad (5)$$

This simply implies that mean expenditures are predicted by using mean endowments, and $\hat{\beta}^F$ and $\hat{\beta}^M$ are the vectors of the estimated coefficients of the female and male groups. This responsiveness (coefficients) of endowments along gender lines is what we call returns to endowments, which capture gender-bias and translate inherent disparities. Since $\bar{y}$ is the mean of the log, and is the log of the geometric means $\bar{Y}$, we then plug equations (4) and (5) into (1), and averaging over the entire spectrum of endowments, we obtain the following decomposition for the male and female subgroups:

$$\Delta = \log\left(\frac{\bar{y}_M}{\bar{y}_F}\right)$$
$$= \sum_{z=1}^{Z} 0.5\left(\hat{\beta}_z^M + \hat{\beta}_z^F\right)\left(\bar{X}_z^M - \bar{X}_z^F\right)$$
$$+ \sum_{z=1}^{Z} 0.5\left(\bar{X}_z^M + \bar{X}_z^F\right)\left(\hat{\beta}_z^M - \hat{\beta}_z^F\right) \quad (6)$$

where $z = 1,\dots Z$ indicates the endowments attributed to each household. The first term on the right-hand-side of equation (6) captures the contribution to the well-being gap arising from differences in average input endowments between male and female headed households. It measures the well-being differential which would persist if women were to enjoy the average well-being input responsiveness in the sample, while preserving their given stock of input endowments. The second term measures differences in the responsiveness of input-endowments between male and female headed households and thus indicates the contribution of *inherent disparity* to the gender well-being gap. This can be considered a rough measure of well-being distortion for female household heads.

Distinguishing the contribution of different characteristics on the one hand and of the unexplained differential effect on the other hand, the form of equation (6) resolves

the critical issue of having to define *a priori* a reference structure for our analysis. This form emerges by avoiding the arbitrariness in selecting the gender structure of reference by using the Shapley value approach (see Shorrocks, 1999). Similar to Takahashi (2007), we can estimate the partial effect of a particular individual endowment on the differences observed between male and female headed households.

Having formulated gender disparities in terms of endowments and returns to these endowments, we consider the rate of discrimination between male and female headed households based on: (1) the endowments and (2) returns to endowment (treatment) by constructing a discrimination index. This analysis will inform us of gender income disparities by regressed-income sources using a disparity index. Drawing inspiration from Lissenburgh (2000), we denote the disparity index for endowment as:

$$DISC_{endowments,\,f} = \left\{ \exp\left[\left(\bar{X}^F - \bar{X}^M \right) \hat{\beta}^F \right] - 1 \right\} \times 100 \quad (7)$$

$DISC_{endowments,\,f}$ is the percentage change in the welfare that female headed households would achieve given that they have the same attributes as their male counterparts. Similarly, the disparity coefficient or index for treatment takes the form:

$$DISC_{treatment,\,f} = \left\{ \exp\left[(\hat{\beta}^M - \hat{\beta}^F) \bar{X}^F \right] - 1 \right\} \times 100 \quad (8)$$

$DISC_{treatment,\,f}$ is the percentage change in the welfare that female heads would achieve given that they have the same returns to attributes as their male counterparts.

Data

The data used in this study is the ECAM III (2007) Cameroon household consumption surveys. The ECAM III survey was effectuated between May and July 2007; and comprised 11,391 households. Its aim was to upgrade knowledge on poverty and welfare status in Cameroon by providing indicators that captured the living standards of the local population to construct poverty profiles and act as a follow up of efforts made towards the implementation of the Poverty Reduction Strategy Paper (PRSP) and the realization of the MDG objectives. According to the National Institute of Statistics, these data can be used to (1) study all aspects of poverty at national and regional levels (monetary poverty, household poverty, poverty in terms of potentials and subjective poverty), as well as to establish correlations between these different types of poverty; (2) study the dynamics of poverty between 2001 and 2007, with the aim of evaluating the effects of macro-economic policies of the last five years on

household well-being; (3) evaluate the demand for education and identify its principal determinants; (4) evaluate internal tourism in Cameroon and; (5) collect data on child labour in Cameroon (National Institute of Statistics, 2007, 2008).

Data used for this analysis comprises both observed and synthetic variables. Based on data obtained from the ECAM III household survey, the following variables were selected. The dependent variable considered is household expenditure per capita. This variable is derived by dividing the total household expenditure by the number of individuals living in the house. The assumption with this variable is that there are no economies of scale in the household. The following independent variables are considered. Household size indicates the number of people living in a particular house at a given point in time. Age cohorts shows the age group of the household head at the time of the survey. Share of active household members is generated as the proportion of active and working adults living in the household. The variable working in the formal sector was constructed to indicate that the household head is employed in the formal sector. The variable owning farmland indicates household's heads own exploitable farmland. Spatially, we choose the variables urban areas, excluding semi-urban and rural areas to avoid perfect collinearity. The variables selected for our empirical work alongside their descriptive statistics are given in Tables 1 and 2.

Modalities used to construct synthetic variables for education and health included a wide range of questions that captured household well-being and translated more information regarding their status, and are expressed in the Appendix. The Multiple Correspondence Analysis orders modalities of the generated scores and normalizes to treat for values which may cloud the classification of observations and interpretation of results.

Empirical Results

Descriptive statistics

Descriptive statistics indicate that 73% of interviewed households were male headed. Of the total population interviewed, 34% lived in rural areas. In rural areas, 20% of interviewed households were headed by women. 45% of the total population owned or otherwise exploited farmland and 26% of the total population was made up of women owning or exploiting farmland. Of the total number of interviewees in the rural areas, 75% of these households owned farmland. Of the total population interviewed in urban areas, 26% were women. The age cohort with the highest number of household heads was the 40–49 year old group. The average household size was 4 members, with an average of 5 members in male headed households and 4 members in female headed households. The average share of active household members was 0.3 across the population and for each gender.

Table 1.   Summary of the descriptive statistics of variables for the general samples

Variable	General sample			
	Mean	SD	Min	Max
Outcome variables				
Log total expenditure per head	12.775	0.7378	11.1851	16.244
Educational*	1.1294	0.3422	0.04123	1.5352
Health*	0.7109	0.3889	0	1.4839
Gender (1=male and 0=otherwise)	0.73303	0.44239	0	1
Age cohorts	2.7093	1.3555	1	5
Household size	4.4938	3.068	1	43
Share of active household members	0.3344	0.3050	0	1
Formal sector (1= yes and 0=otherwise)	0.1988	0.3992	0	1
Own farmland (1= yes and 0=otherwise)	0.4552	0.4980	0	1
Regions				
Urban	0.5479	0.4977	0	1
Rural	0.3379	0. 4730	0	1

Source: Computed using STATA 10. *Synthetic variables obtained by the MCA method.

Table 2.   Summary of the descriptive statistics by gender for 2007

Variable	Subsample male				Subsample female			
	Mean	SD	Min	Max	Mean	SD	Min	Max
Outcome variables								
Log total expenditure per head	12.780	0.7459	11.19	16.25	12.761	0.7149	11.187	15.76
Educational*	1.1435	0.3380	0.041	1.535	1.090	0.3505	0.04123	1.535
Health*	0.6765	0.3818	0	1.480	0.8054	0.3925	0.0284	1.483
Age cohorts	2.5958	1.3187	1	5	3.0210	1.4058	1	5
Household size	4.7312	3.2099	1	43	3.8421	2.5306	1	22
Share of active household members	0.3300	0.3033	0	1	0.3466	0.3094	0	1
Formal sector (1= yes and 0=otherwise)	0.2264	0.4186	0	1	0.1174	0.3219	0	1
Own farmland (1= yes and 0=otherwise)	0.4586	0.4983	0	1	0.4456	0.4971	0	1
Regions								
Urban	0.5544	0.4970	0	1	0.5300	0.4991	0	1
Rural	0.33628	0.4724	0	1	0.3423	0.47456	0	1

Source: Computed using STATA 10. *Synthetic variables obtained by the MCA method.

Some descriptive statistics for the different modalities used to construct the synthetic variables for education reveal that in 2007, 63% of households could read and write and 66% had at least gone to school. In a similar manner, 69% of households are located less than one kilometre from public primary schools and spends 15 minutes to get to the nearest public primary school. 49% of these households take less than 15 minutes to get to the nearest private primary school.

59% of households admitted that they usually consulted traditional practitioners. About 59% of households lived less than 3 km from the nearest health centre. 63% of households take at most 25 minutes to get to the nearest health centre. While educational differences between male and female headed households were marginal, in terms of health, the female headed households experienced an improvement relative to their male counterparts.

Econometric results

Table 3 indicates the weighted estimates obtained from the ordinary least squares (OLS) regression analysis of household economic well-being for 2007, as well as parameter estimates of the male and female subsamples. Diagnostic tests show that the models were significant with R-squared values of about 0.53. Estimates reveal that the synthetic variables for education and health associate positively with household welfare in both the full and subsamples. Evidently, access to better education enhances employability, sound practices and even how income is spent in the household, with a view to ensuring household welfare. This finding corroborates the result obtained by Awoyemi and Adekanye (2003) for Nigeria and Maria and Jose (2008) for Cape Verde. In terms of health, the ability to access a district health centre, shorter distances to these centres and quality services implies timely

Table 3.   Determinants of household economic well-being-dependent variable is log of household expenditure per head

Income sources	General samples column (1)	Male subsamples column (2)	Female subsamples column (3)
Education*	0.2609***	0.2235***	0.4496***
	(15.88)	(11.85)	(13.28)
Health*	0.1801***	0.1679***	0.2202***
	(14.41)	(11.41)	(9.62)
Age	0.0111***	0.0091*	0.0309***
	(2.76)	(1.92)	(4.12)
Household size	-0.0161***	-0.0140***	-0.042***
	(-10.59)	(-8.42)	(-8.56)
Share of active household members	1.2442***	1.320***	0.9040***
	(38.35)	(33.81)	(14.20)
Sex (1=male and 0=otherwise)	0.0701***		
	(5.76)		
Formal sector (1=working in the formal sector and 0=otherwise)	0.3816***	0.3748***	0.4569***
	(27.50)	(24.00)	(14.23)
Household own farmland (1=own farmland and 0=otherwise)	-0.0628***	-0.0662***	-0.0367*
	(-5.13)	(-4.55)	(-1.69)
Urban area	0.3159***	0.3119***	0.3135***
	(17.82)	(14.75)	(10.07)
Rural area	-0.1844***	-0.2006***	-0.132***
	(-10.44)	(-9.49)	(-4.25)
Constant	11.741***	11.84***	11.62***
	(333.1)	(302.5)	(164.2)
R^2	0.5255	0.5315	0.5132
Fisher (df; *p*-value)	1141; 0.00	970;0.00	304; 0.00
Number of observations	10317	7710	2607

Notes: The variables marked with * are synthetic variables obtained from the MCA approach. ***, ** and * represent 1%, 5% and 10% significance levels, respectively.
Source: Computed using STATA 10 and the DASP 2.1 Software (Araar & Duclos, 2009)

treatment of diseases that could deprive household members of healthy work days. In addition, economies of scale generated from good health in terms of more labour market participation would improve household well-being. This observation is in tandem with the standard literature on human capital theory (e.g. Grossman, 1972).

Other variables that correlate positively with household welfare are: the age of the household head, share of active household members, working in the formal sector and gender. Working in the formal sector translates the possibility of earning a steady source of income, as well as other advantages like being able to borrow money and an adequate insurance policy. These tend to positively impact on household economic well-being. The share of active household members contributes positively to household expenditure. It is reasonably believed that an increase in the number of working individuals in a given household can generate more income for the household. Generally, households living in urban areas are exposed to more opportunities which are income generating than rural dwellers and that may explain why poverty levels appear low in urban regions. This finding is in tandem with results found by Mwabu et al. (2000) for Kenya. Also,

along gender lines, male headed households tend to increase household income expenditure because of the 'possibility' of men to access jobs more easily or the discrimination bias in favour of men in the job market. Alayande (2003) finds similar results.

Variables that instead reduce household well-being are household size and owning farmland. Other things being equal, farm ownership is expected to impact positively on household economic welfare. The negative and significant sign of farmland ownership may be attributable to quality considerations and the absence of formal safety-nets for small-scale agriculturalists in Cameroon. Agricultural lands might not be productive enough or operated profitably. Most farmlands, especially in rural settings in Cameroon, are operated on a safety-first basis to guarantee the survival of the farming household as a matter of priority. Households might not be operating their farm holdings profitably, but since formal safety-nets like insurance, unemployment benefits and old age pension facilities are not accessible to informal sector operators in Cameroon, they might sensibly continue to operate production units even if such units are economically unprofitable. Thus farm ownership could also impact household economic well-being negatively.

The relationship between household size and household expenditure is negative. This indicates that a higher number of 'dependents' or individuals residing in a particular household will tend to exert a lot of pressure on the meagre income generated by the household head and consequently cause an overall dip in well-being. Residing in urban areas tends to increase household economic well-being and rural residency has the tendency to reduce household welfare.

Oaxaca–Blinder approach to compute gender-neutral and gender-biased characteristics

Using the estimated income generating functions and the Oaxaca–Blinder decomposition framework, the following findings were obtained. Table 4 shows that the welfare-gap between male and female headed households of -0.16 was accounted for by differences in access and returns to endowments. The effects of returns to endowments, however, over-accounted for the welfare-gap between the male and female headed households (column 2). Decreases in the welfare gap between the male and female households were accounted for by the variables: education, health, age of household head, working in the formal sector, owning farmland and residing in rural areas (column 3).

Among variables that reduce the welfare-gap between male and female headed households, the synthetic-variable education overwhelmingly accounted for this welfare-gap. This was followed by the variables, health and age cohort of household head, rural areas. The variables with the least contributions were working in the formal sector and owning farmland. The variables that rather contributed in fuelling the welfare-gap were household size, share of active household members and residing in urban areas. Among this set of variables, the variable share of active household members over accounted for worsening this gap.

Concerning variables that reduced the welfare gap between male and female headed households, the effects returns to endowments for all the variables registered negative values (column 2) that were higher in absolute terms than the effects attributed to the endowments (column 1). This indicates that effects from returns to endowments had higher impacts than simply endowment effects in reducing the welfare gap between male and female headed households for the different sources than reduced welfare gap.

On the other hand, regarding sources that rather increase the welfare gap between male and female headed households, whereas the effect returns to endowments rather contributed to registering the positive values for the variables household size and share of active household members (column 2), the effect endowments instead helped to increase this gap as regards the sources residing in urban areas (column 1).

Discrimination coefficients that captured both differences explained by endowments and returns on endowments are hosted in Table 5. Total discrimination between male and female headed households in 2007 was accounted for by both discrimination registered for access to endowments (column 1) and discrimination registered for returns to endowments (column 2). The 15.17 increase in total discrimination was accounted for by the variables education, health, age cohort of household heads, working in the formal sector, owning farmland and living in a pure rural area. Among these variables, the synthetic variable education largely accounted for the overall increase in discrimination if the male and female headed households were equally endowed with this attribute or endowments. This is followed by the variable age cohort of household head and the composite variable health (column 3). Variables that if equally attributed to male and female headed households will reduce total discrimination are household size, share

Table 4. Decomposition of the welfare-gap between male and female headed households

Variables	Male and female subsample survey 2007		
	Access to endowments effects column (1)	Returns to endowments effects column (2)	Total values for 2007 column (3)
Education*	0.01801	-0.25250	-0.23449 (142.83%)
Health*	-0.0250	-0.03875	-0.06377 (38.85%)
Age cohorts	-0.0085	-0.06122	-0.06972 (42.47%)
Household size	-0.0247	0.1178	0.09316 (-56.74%)
Share of active household members	-0.0019	0.14073	0.13887 (-84.59%)
Formal sector (1=working in the formal sector and 0=otherwise)	0.00229	-0.01096	-0.00867 (5.28%)
Household own farmland (1=own farmland and 0=otherwise)	0.00038	-0.00449	-0.00410 (2.50%)
Regions			
Urban	0.00763	-0.0009	0.00676 (-4.11%)
Rural	0.00100	-0.0232	-0.02220 (13.52%)
Welfare gap	-0.03069	-0.13348	-0.16417 (100%)

Source: Computed using the results from Tables 2 and 3. The variables marked with * are synthetic variables.

Table 5.   Decomposition of the discrimination index between male and female headed households

Variables	Male and female subsample survey 2007		
	Discrimination in access to endowments column (1)	Discrimination due to returns in endowments column (2)	Total discrimination column (3)
Education*	2.4345	-21.8429	-19.408(-127.12%)
Health*	-2.79868	-4.12476	-6.9234 (-45.35%)
Age cohorts	-1.30527	-6.37360	-7.6789 (-50.30%)
Household size	-3.62252	11.1441	7.5216 (49.27%)
Share of active household members	-1.48943	15.5098	14.0204 (91.84%)
Formal sector (1=working in the formal sector and 0=otherwise)	0.25161	-1.06731	-0.8157 (-5.34%)
Household own farmland (1=own farmland and 0=otherwise)	0.02727	-0.45855	-0.4313 (-2.83%)
Urban	0.76787	-0.08476	0.6831 (4.48%)
Rural	0.07988	-2.31413	-2.2343(-14.64%)
Discrimination index	-5.65476	-9.61202	-15.2668 (100%)

Notes: The values in brackets below the Oaxaca–Blinder decomposition and the discrimination coefficients translate the percentage contributions to the total gender income expenditure gap.
Source: Computed using results posted in Tables 2 and 3. The variables marked with * are synthetic variables.

of active household members and residing in pure urban localities. Among these variables, bridge inequality in the number of active household members increased income earned by women by about 92%. For inequality in household size, we have 50%. Using spatial lines that reduce spatial inequality between male and female headed households for 2007 increases income earned by women by 5%.

Concerning variables that will have the tendency to increase discrimination between male and female headed household for 2007, their effects caused by discrimination in returns of these respective endowments largely explain why (column 2). This may translate the observation that even when male and female headed household heads are equally endowed, what they receive as returns to the respective endowments is biased in favour of the male headed household heads. Similarly, this trend is observed for those endowments that rather dissipate this discrimination for the endowment's health and household size. However, this is not the case for the variable pure urban area, where here it is the discrimination appended to access to endowments that explains its equalizing effects as regards discrimination between male and female headed households.

Conclusion and Policy Recommendations

This paper (1) identifies disparities in endowments and returns to these endowments that account for the welfare-gap in household economic well-being between male and female headed households in Cameroon and (2) determines discrimination coefficients. Regressed variables were consistent with the economic literature and were significant for determining the global and gender sample determinants of household income expenditure for the OLS. Variables that influence household economic well-being were the

variables education, health, and share of active household members, household size, and working in the formal sector, age of household head, owning farmland and both urban and rural localities.

We investigated disparities in endowments and returns to these endowments that explain gender disparity and discrimination between male and female headed households for 2007 using the Oaxaca–Blinder approach. The variables education, share of active household members, working in the formal sector and household size tend to account for disparities in endowments and returns to these endowments between male and female headed households. Globally, personal-specific characteristics associated to access and returns to these endowments and gender-discrimination expenditure characteristics of household heads linked to their gender orientations shape the patterns of observed inequalities, as well as the spill-over effects of the gender type on household income.

Policies that can be drawn from this study are: (1) those that promote equity in returns benefit from education, such as equal pay for equal qualification between male and female headed households, will help reduce the difference in welfare between male and female headed households. The creation of income-generating opportunities for women should be consolidated. This is because women are gradually having a more important role in generating income for households. This will eventually ameliorate overall well-being. (2) Family planning schemes that specifically target poor female headed households should be encouraged by government. This is because these households are generally vulnerable to idiosyncratic shocks and may further suffer in terms of future adequate human capital investments in terms of education, health, decency, that act as future acquisitions that the individual may use to impact positively on his/her well-being. Spatially, policies

anchored on developing and enhancing access and usage of infrastructural facilities should be facilitated for women in rural areas because the regions have a high concentration of poor women.

Notes

1. This paper is extracted from ongoing research work and financial and scientific support from the Poverty and Economic Policy (PEP) Research Network, which is financed by the Australian Agency for International Development (AusAID) and by the Government of Canada through the Canadian International Development Agency (CIDA) and the International Development Research Centre (IDRC). We would like to express our thanks and acknowledgement to the PMMA PEP research team. We also acknowledge comments from anonymous referees at the *2009 International Institute of Public Finance Conference*.
2. In most rural areas in less developed countries, women are the breadwinners of most families, and issues that help consolidate their position need to be clearly incorporated into poverty reduction strategies (Mosse, 1994).
3. Vulnerability is considered as a type of asset. It entails defenselessness, insecurity and exposure to risk. Thus it is obvious that the more people who are asset endowed, the less vulnerable they will be to protect themselves from poverty (Moser & Felton, 2006).

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Appendix 1: Basic Indicators of the Non-monetary Well-being Dimensions

Dimension 1: Education and basic infrastructures

Knowing how to read and write
Already attended schools
First reason for dissatisfaction regarding the closest public primary school
First reason for dissatisfaction regarding the closest private primary school
Distance to go to the nearest public primary school (0, 1, 2, 3, 4, 5 or 6 km and more)
Distance to go to the nearest private primary school (0, 1, 2, 3, 4, 5 or 6 km and more)
Required time to go the nearest primary public school
(0–5 min/6–15 min/16–25 min/26–35 min/36–45 min/46 min or more)
Required time to go the nearest private public school
(0–5 min/6–15 min/16–25 min/26–35 min/36–45 min/46 min or more)

Dimension 2: Health and basic infrastructures

Sector of consultation
Type of sanitary centre
Appreciation of health status
First reason for dissatisfaction regarding the closest sanitary centre
Distance to go to the nearest sanitary centre (0, 1, 2, 3, 4, 5 or 6 km and more)
Required time to go the nearest sanitary centre
(0–5 min/6–15 min/16–25 min/26–35 min/36–45 min/46 min or more)