Chapter 7

Domestic Work and Employment in Africa: What Is the Trade-Off for Women?

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One of the keys to understanding the low labor force participation rate among women and their weaker ties with the labor market is the breakdown of domestic work and market-related work by gender. How do inequalities in the distribution of domestic work affect the type of employment integration (informal) for women and their level of participation (number of hours worked) on the labor market?[1] What are the links between inequalities in the distribution of domestic work time and employment in the informal sector? This chapter addresses these questions.

As domestic work is not considered work in official labor force indicators, activity rates are underestimated, especially for women. As defined by International Labour Organization (ILO) standards, the labor force participation rate covers only work associated with the production of goods and services included in the system of national accounts. Domestic work to produce services consumed by the household is not included; an individual in full-time domestic work is therefore considered "inactive." The time spent producing goods for domestic consumption (gathering firewood, fetching water, caring for the sick, and performing voluntary community services) is not generally considered to be work either.

This chapter focuses on the links between domestic labor and labor market participation. The first section reviews the literature on the distribution of domestic time and market time by gender in developing countries. The second section describes the databases in the 10 Sub-Saharan African countries included in the study. The third section presents the main stylized facts derived from a number of comparative findings and analyzes the determinants of the allocation of time between domestic activities and market work within the framework of family reproduction. It concludes by briefly examining the

effects of the distribution of domestic work on labor market participation and household incomes. The fourth section puts forth hypotheses, describes the econometric models employed to test them, and analyzes the results of the estimates. The last section draws conclusions and discusses implications for future research.

To our knowledge, no other study has conducted a comparison of this kind across a large number of Sub-Saharan African countries. This study is also the first to link inequalities in the distribution of domestic work time and employment on the labor market (especially the informal sector).

Review of the Literature

Empirical studies of household allocations of time are based on Becker (1965, 1981) and Gronau (1977), who propose a unitary model of the household in which the ratio of each member's relative productivity to his or her expected wage dictates specialization in domestic or market activities. The variables considered are the individuals' human capital and the opportunity cost of domestic activities (generally measured by proxies such as the number of children, household wealth, and spouse's level of education).

Most empirical studies examine developed countries and focus on the intrahousehold division of labor and its link with the determinants of the labor supply (of married women, for example). One of the focal points of this literature is to test the hypothesis of the unitary household, which posits that the cross-effect of a balanced increase in income from the wife's wage on the husband's labor supply is identical to the effect of an increase in the husband's wage on the wife's labor supply (see, for example, Browning and others 1994; Alderman and others 1995; Browning and Chiappori 1998; Bourguignon and Chiuri 2005).

Empirical studies reject the "shared or common preferences" hypothesis underlying the unitary model of the household (Ilahi 2000). Quisumbing and Maluccio (2000) show the importance (to varying extents) of women's bargaining power in the allocation of household spending in four developing countries (Bangladesh, Ethiopia, Indonesia, and South Africa). But very few studies have looked into intrahousehold time use.

In developing countries, a major feature of the studies based on surveys combining time use with labor market participation is the exploration of the links between child labor (domestic and market work) and children's education (see chapter 12). This work has qualified the idea that work and education are two incompatible activities. Canagarajah and Coulombe (1998) do not include the time children spend on domestic work in their econometric estimates (a bivariate probit model) of the probability of children working as opposed to studying. As Ilahi (2001) shows in his panel study of Peruvian households, failing to do so

underestimates the time children, especially girls, spend working. He shows that changes in the household's level of wealth (ownership of assets), the employment of women, and sickness of a household member have a stronger impact on time spent at school and work for girls than for boys (Ilahi 2001). Ritchie, Lloyd, and Grant (2004) consider the impact of adolescents' schooling on the gender division of labor in India, Kenya, Pakistan, and South Africa.

A number of authors point out that part of the household production (mainly produced by women) is not counted. They seek to include domestic work in the system of national accounts and to incorporate female participation in domestic production into the measurement of the labor force participation rate in order to accurately measure women's economic contribution.

Different classifications and breakdowns of working time have been proposed, but the distinction between work and nonwork remains hazy. For example, Kes and Swaminathan (2006) posit that individuals' time use can be classified as market and nonmarket work. Nonmarket work covers subsistence production, reproductive work, and volunteer work. Reproductive work comprises domestic work and care work. Domestic activities include activities such as preparing meals, doing laundry, cleaning, maintaining the household, and providing personal care. This misclassification clearly illustrates the confusion over the distinction between work and nonwork: although personal care is an essential activity, like leisure and sleep, none of these activities is defined as work for the purpose of national accounts.[2]

Few empirical household time use studies have been conducted on developing countries. In Sub-Saharan Africa, surveys do not collect enough economic and demographic data for an in-depth analysis of time use by men and women.

Kes and Swaminathan (2006) update the review by Brown and Haddad (1995) to summarize the findings of 17 studies on time use by gender. They find that different instruments are used to collect the data (simplified diaries, prelisting of 77 activities classified and not classified as in a system of national accounts, participant observation, seven-day recall, two-day recall, 24-hour diary, and so forth). Sample sizes range from 44 women to 5,938 households and cover different age ranges.

In a move to overcome these shortcomings, the United Nations Development Programme (UNDP) supported four surveys on time use in Sub-Saharan Africa, in Benin (1998), South Africa (2000), Madagascar (2001), and Mauritius (2003). The findings are summarized in a report titled *Gender, Time Use and Poverty in Sub-Saharan Africa* (World Bank 2006). This report merely describes the working time included in and excluded from the system of national accounts. Except for gender and country variables, the findings are not broken down by age bracket, level of education, household demographic structure, household poverty status, income level, occupational status, or type of employment.[3]

Empirical studies agree on three stylized facts:

- Women spend more time working than men in nearly all regions.[4]
- The distribution of tasks is very different for men and women, with women performing virtually all domestic tasks and men specializing in income-earning activities (Ilahi 2000).
- There is very little total specialization. Fafchamps and Quisumbing (2003) show that less than 2 percent of people in Pakistan perform all the domestic work in their household and less than 8 percent perform no work at all.

Description of the Data

The data used in this chapter combine samples from 1-2-3 surveys conducted in seven West African Economic and Monetary Union (WAEMU) capitals; Antananarivo, Madagascar; Kinshasa, Democratic Republic of Congo; Douala and Yaoundé, Cameroon (for a description of these surveys, see box O.1 in the overview).[5] The sample covers 95,220 individuals 10 and older, including 68,428 in WAEMU cities (table 7.1). The 1-2-3 surveys share the same methodological

Table 7.1 Sample Characteristics and Descriptive Statistics
(percentage of total, except where indicated otherwise)

Variable	All countries	West African Economic and Monetary Union (WAEMU) subtotal
Gender		
Women	50.8	50.8
Men	49.2	49.2
Number of people (thousands)		
Number of people in areas sampled	18,880.8	9,216.0
Number of people in sample	127.4	91.8
Age bracket		
<6	15.1	14.4
6–9	10.7	10.6
10–14	11.6	11.8
15–24	23.0	24.2
25–64	37.5	37.3
65+	2.1	1.8
Total	100	100
Household size (thousands)		
Total number of people 10 and older in cities sampled	14,009.1	6,920.3
Number of people 10 and older in sample	95.2	68.4

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Table 7.1 (continued)

Variable	All countries	West African Economic and Monetary Union (WAEMU) subtotal
Household type		
One person	12.4	14.4
Couple without children	4.3	4.4
Couple with children	32.6	27.5
Nuclear single parent	8.4	7.9
Extended single parent	9.9	10.7
Extended household	32.4	35.1
Total	100	100
Number of households (thousands)		
Number of households in cities sampled	3,635	1,770
Number of households in sample	25.5	17.8
Percentage of households headed by a woman	20.5	20.5
Average household size	5.1	5.1
Relation to head of household		
Head of household	19.3	19.2
Spouse	12.4	12.3
Child	47.5	45.3
Father/mother	0.6	0.5
Other relative	18.5	19.9
Other unrelated member	1.1	1.7
Servant	0.6	1.1
Institutional sector		
Administration	8.3	6.7
Public enterprise	2.6	1.8
Formal private sector	16.4	14.1
Informal sector	71.0	76.2
Association, nongovernmental organization	1.7	1.2
Religion		
Muslim	28.7	58.7
Catholic	32.4	24.4
Protestant	16.8	5.0
None	2.7	3.6
Other	19.4	8.3
Number of years of education (people 10 and older)		
Women	6.3	4.3
Men	7.8	6.3
All	7.0	5.3

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries in the West African Economic and Monetary Union (WAEMU) conducted in 2001/02 by the Observatoire économique et statistique d'Afrique Subsaharienne (AFRISTAT); Développement, Institutions et Mondialisation (DIAL); and national statistics institutes.

approach to their measurement of working weeks for people 10 and older in the 11 cities. This means that the harmonized data taken from these surveys can be used to conduct the first ever rigorously comparable assessment.

Household members were asked to recall the time spent on each activity over the reference period. The information obtained is not as accurate as the information obtained from journals filled in by household members. This method was used because it is less expensive and because the one-week period has the advantage of covering activities that are not daily, which prevents underestimation of their weight.

Six types of activities are defined:

- Studying
- Unpaid domestic work in own house and caring for children, the elderly, and the sick
- Fetching water or wood and going to the market
- Building own house
- Performing voluntary community services
- Spending time in employment (in main and second job).

Time spent on leisure, family time, and sleeping was not collected directly but can be estimated residually (table 7.2). The sample covers urban households only; it thus largely avoids seasonality issues.

The other recurring problem with empirical studies on time use is that the sum of the time spent on different activities is sometimes greater than the maximum number of hours available in a day (because two activities, such as caring for children and performing domestic tasks and even market activities, can be performed simultaneously). In our sample, this risk is limited (albeit not eliminated) because caring for children, the elderly, and the sick is grouped with domestic activities. In order to correct for the overestimation of time spent on different activities and hence deal with the double counting problem, we placed a ceiling on the maximum time individuals could spend on activities, so that the sum of weekly activity time does not exceed 112 hours ([24–8] * 7). When the total time individuals reported spending on different activities exceeded the maximum, we applied a correction factor (total time/112) to each of the components, so that the sum does not exceed 112 hours.[6]

Stylized Facts on Time Use by Gender

We first look at the breakdown of working time spent producing domestic goods and services, in order to examine the links between the distribution of

Table 7.2 Allocation of Time in 11 Cities in Sub-Saharan Africa, by Type of Activity
(weekly hours, except where otherwise indicated)

City	Domestic work and caring for children	Gathering wood, fetching water, and shopping	Building home	Studying	Performing voluntary community services	Working in main job	Working in second job	Total
Abidjan	5.8	1.6	0.0	5.0	0.1	26.9	0.4	39.8
Antananarivo	6.1	4.0	1.3	9.9	0.1	24.1	0.8	46.4
Bamako	7.3	1.7	0.1	0.4	0.1	21.3	0.7	31.5
Cotonou	8.3	3.1	0.0	3.5	0.1	26.0	1.0	42.1
Dakar	7.5	1.3	0.1	1.6	0.2	19.9	0.3	30.9
Douala	9.9	3.3	0.2	3.6	0.3	24.3	1.0	42.6
Kinshasa	6.4	2.5	0.1	2.9	0.3	16.5	0.4	29.1
Lomé	11.5	3.9	0.1	2.1	0.4	30.3	0.9	49.2
Niamey	9.1	1.7	0.1	2.0	0.1	19.3	0.7	33.0
Ouagadougou	7.3	2.0	0.0	1.1	0.1	23.0	0.7	34.2
Yaoundé	9.0	3.3	0.1	4.7	0.5	22.5	0.9	41.1
West African Economic and Monetary Union (WAEMU)	7.4	1.9	0.1	2.8	0.1	24.1	0.6	37.0
WAEMU countries	7.4	2.5	0.2	3.6	0.2	21.9	0.6	36.4
Distribution of time (percentage of total)								
WAEMU	20.1	5.2	0.2	7.5	0.4	65.2	1.5	100
All	20.4	6.8	0.5	9.9	0.6	60.2	1.7	100

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

domestic and market time and the female labor market participation rate and define the relative weight of the activities not counted by the national accounts. We then focus on the extent and determinants of intrahousehold inequalities, an aspect rarely studied in the developing countries.

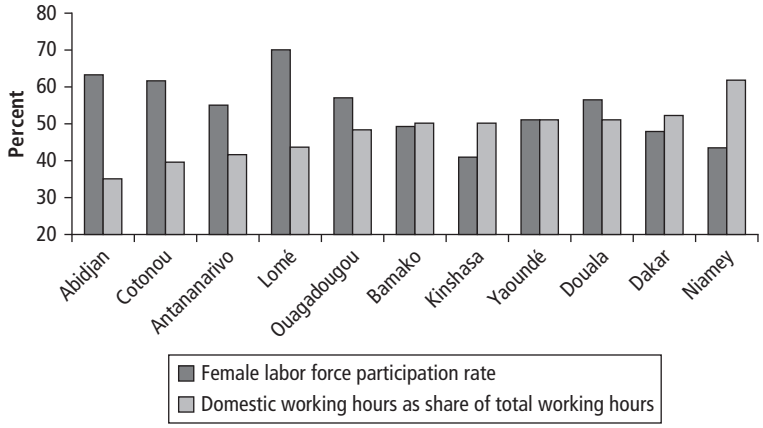
Time Spent on Domestic and Market Work

One of the keys to understanding low female labor force participation rates and the marginal nature of female employment on the labor market (mainly in the informal sector) is the allocation of time between domestic and market work. The more women are taken up with domestic tasks, the less time they spend on the labor market (figure 7.1). This notion suggests that a trade-off exists between domestic and market-based work. A different picture emerges from examination of the cities individually.

Time Spent on Domestic Work as a Percentage of Total Working Time

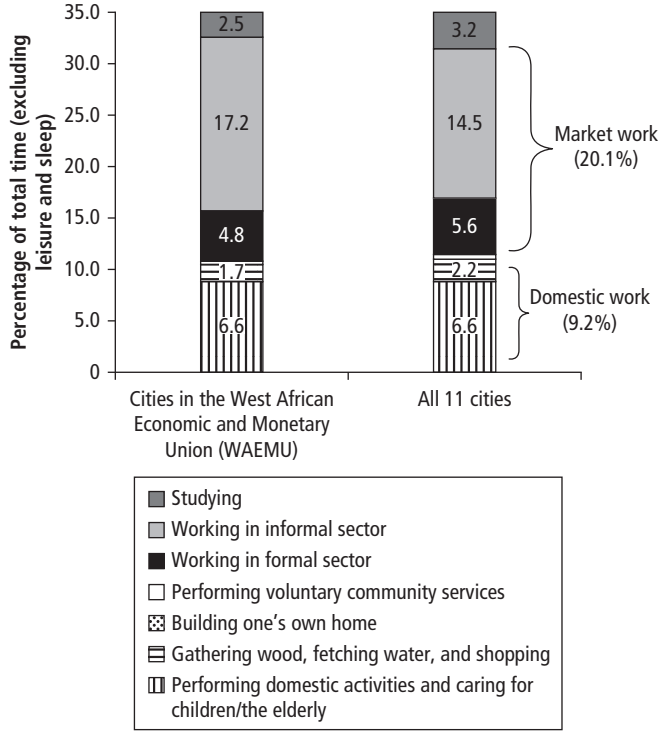
Across all 11 cities, nearly one-third (31 percent) of total working time is spent performing domestic activities not included in national accounts (28 percent for WAEMU cities) (figure 7.2). Official per capita gross domestic product (GDP) figures therefore underestimate the real standard of living. It is impossible to quantify the amount by which GDP is underestimated without assigning a monetary value to the time spent on domestic work. Imputing such a value is difficult, however, because there is little if any market for household services in

Figure 7.1 Female Labor Force Participation Rate and Share of Working Time Spent on Domestic Activities in 11 Cities in Sub-Saharan Africa



Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Figure 7.2 Allocation of Time in 11 Cities in Sub-Saharan Africa



Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Sub-Saharan Africa. However, given that productivity for domestic production tasks is probably lower than it is for market-based work, GDP cannot be underestimated by more than 30 percent.

Working in the formal sector (often the only working time visible to labor market statistics) accounts for just one-quarter of "market-based" work in both the WAEMU cities and all 11 cities in the sample (the other three-quarters is in the informal sector).[7] On average, more time is spent on domestic activities than on production-related activities in the formal sector. The time-use survey approach provides another way of assessing the extent to which activities outside the formal sector are excluded from both GDP and labor market indicators.

The populations studied spend nearly 70 percent of their time on leisure, sleep, studying, and other activities counted as nonwork. In the WAEMU cities, the time spent studying (2.5 percent) is below the average for all 11 cities (Antananarivo, 7.9 percent; Yaoundé, 4.2 percent; Douala, 3.3 percent).

Cross-Country Differences

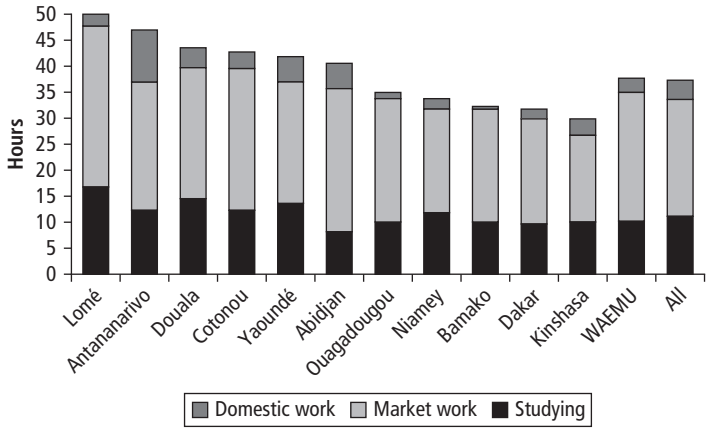
The cities display sharp variations around an average working week of 34.2 hours within WAEMU and 32.8 hours for all 11 cities considered. In the capitals of Benin, Côte d'Ivoire, and Togo; Cameroon's two main cities; and Madagascar's capital, people spend more time working (domestic or market-based) than do people in the capitals of Burkina Faso, the Democratic Republic of Congo, Mali, Niger, and Senegal (figure 7.3).

One explanation for the differences in time allocation across cities could be differences in demographic structures and household types. Extended households, polygamy, and the prevalence of child labor may all have an impact on the observed heterogeneity in working hours across countries.

For the sample as a whole, women account for 56 percent of the household's total working time (figure 7.4). Domestic working time is more unevenly spread by gender than market-based work. Women perform 82 percent of domestic work in the household. They also account for 42 percent of the household's market-based working time.

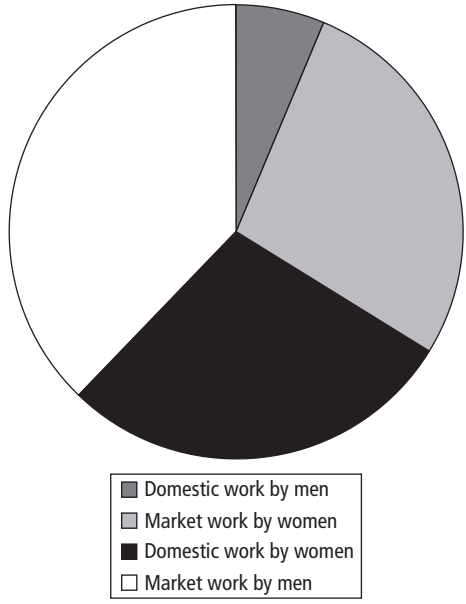
In every city considered, women account for more than half of the household's working time, but there are large differences across countries. Gender differences are greatest in Cotonou and Lomé, where the rates of female specialization in domestic activities are lowest. Gender inequalities occur not principally because women specialize in domestic work but rather because they perform both domestic and market work (figure 7.5).

Figure 7.3 Time Spent on Domestic Work, Market Work, and Studying in 11 Cities in Sub-Saharan Africa



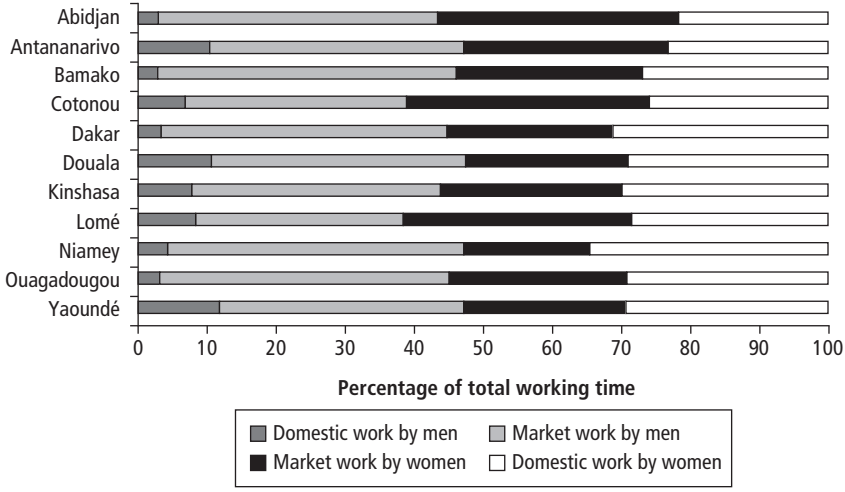
Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).
Note: WAEMU = West African Economic and Monetary Union.

Figure 7.4 Division of Labor within Households by Gender in 11 Cities in Sub-Saharan Africa



Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Figure 7.5 Percentage of Total Working Time Men and Women in 11 Cities in Sub-Saharan Africa Spend Performing Domestic and Market Work



Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Table 7.3 Gini Coefficients for Differences in Working Time by Men and Women in 11 Cities in Sub-Saharan Africa

	Including individuals with zero hours			Excluding individuals with zero hours		
Hours	**Total**	**Women**	**Men**	**Total**	**Women**	**Men**
Total working hours	0.520	0.500	0.539	0.389	0.413	0.356
Hours spent on domestic work	0.701	0.571	0.809	0.483	0.444	0.496
Hours spent on market work	0.642	0.696	0.586	0.223	0.240	0.206

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).
Note: Figures are for individuals 10 and older.

Given the small contribution to domestic work by men and the sizable participation of women in market work, it comes as no surprise to find that inequalities (measured by the Gini coefficient) are greater in domestic work than in market work, although both are significant (table 7.3). This result holds when individuals who do not take part in domestic tasks or market tasks are excluded. However, the inequalities are sharper for women in the distribution of market work and for men in the distribution of domestic work. Inequalities in the breakdown of domestic working time are largest for both men and women when zero values are excluded. When we decompose the Theil inequality index, intragroup (male/female) inequalities account for virtually all the inequalities in the distribution of working time (88.7 percent for domestic work, 98.3 percent for market work, and 99.9 percent for total working time).

Women's Double Days

The data in table 7.4 bluntly refute the notion that inequality in domestic work reflects specialization, in which women who participate in the labor market specialize solely in market work, leaving the domestic workload to women defined by the International Labour Organization as economically inactive. Women employed in the labor market spend an average of 16.6 hours a week on domestic tasks, compared with 14.9 hours for women out of the labor force (11 percent more time). This domestic working time is in addition to their market working time. Many African women thus work a double day. Their involvement in domestic work does not appear to be an obstacle to their participation in the labor market.

These average figures mask cross-county differences. The double day is a significant phenomenon in the capitals of Benin, Côte d'Ivoire, Mali, Madagascar, and Togo; the time working women spend on domestic tasks does not differ greatly among women out of the labor force in the other African capitals in our sample.

Table 7.4 Employment, Unemployment, and Inactivity of Women in 11 Cities in Sub-Saharan Africa, according to Different Definitions
(weekly hours)

City	Employed	Unemployed		Inactive	All
		International Labour Organization (ILO) definition	Broad definition[a]		
Abidjan	13.4	16.6	21.7	11.6	13.3
Antananarivo	16.4	21.2	30.5	14.0	15.6
Bamako	18.2	20.8	18.5	15.1	16.7
Cotonou	20.4	18.1	27.7	13.6	17.8
Dakar	13.5	20.5	23.8	15.8	15.9
Douala	20.5	24.6	30.8	19.0	20.6
Kinshasa	14.4	17.5	16.7	13.8	14.3
Lomé	25.1	26.3	27.9	20.3	23.7
Niamey	19.7	18.7	23.2	18.7	19.4
Ouagadougou	16.6	21.8	24.6	16.1	17.5
Yaoundé	18.2	25.5	27.1	16.4	18.3
West African Economic and Monetary Union (WAEMU)	16.7	18.9	23.2	14.9	16.4
Average all countries	16.6	20.3	22.1	14.9	16.3

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).
a. Includes workers defined by the International Labour Organization (ILO) as unemployed and discouraged.

This observation comes with two reservations. First, unemployed women spend more time than working women on domestic work (3.7 hours more a week using the ILO definition of unemployment, 5.5 hours more using a broader definition of unemployment). The gap in time devoted to domestic activities between inactive and active women narrows when unemployed women (broadly defined) are included (17.5 versus 14.9 hours per week).

Second, the differences between employed and economically inactive females occur mainly because of large differences among girls 10–14: girls 10–14 who work devote very little time (1.5 hours a week) compared with economically inactive girls the same age (8.5 hours a week). In fact, working girls perform more domestic work (16.1 hours) a week than girls who are not in the labor force (9.4 hours). The differences are insignificant among women 15 and older (0.3 hours). All in all, however, working women work five hours more on average (market and domestic working time) than their male counterparts.

The explanatory models of Becker and Gronau focus on economic factors (the opportunity cost associated with different human capital endowments). Another approach concentrates on the importance of social standards. In this

approach, the household is seen as a unit in which members share the same preferences or as a group led by a "benevolent dictator" (Ilahi 2000).

Many authors have pointed to the importance of social standards and roles, overlooked by the Becker-Gronau approach. Women, they suggest, specialize in domestic activities and men in market activities because of culturally determined social standards and roles rather than economic factors. These social standards depend on religion, ethnicity, position in the household hierarchy, and other factors. For example, in their study on Pakistan, Fafchamps and Quisumbing (2003) highlight the importance of the position in the household hierarchy. They find that the wife accounts for the bulk of domestic work and that daughters-in-law take on a heavier load in the domestic activities than the daughters of the head of household. If social standards predominate, differences in human capital may have a minor effect on the gender-based division of labor.

A higher level of education is associated with a larger male contribution to domestic work (table 7.5). Women's contribution, however, remains virtually the same for both domestic tasks and market work regardless of their level of education. This finding tends to support the hypothesis of the minor role played by economic factors in the gender-based division of labor between market and domestic work.

One of the distinguishing factors in the cities in the sample is the predominance of Islam in some and Christianity in others. Religion affects the demographic composition of households; in some countries, it dictates a more traditional role for women. Islam is associated with greater task specialization by gender (table 7.6). The proportion of hours devoted to market work is slightly lower for Muslim women; much larger inequalities are found in the tiny contribution made by Muslim men to domestic activities, an area "reserved" for Muslim women.

Table 7.5 Weekly Hours Men and Women in 11 Cities in Sub-Saharan Africa Spend Performing Domestic and Market Work, by Level of Education
(percent)

	Domestic work/total household working hours			Market work/total household working hours		
Years of education	Men	Women	All	Men	Women	All
None	2.8	27.5	30.3	42.3	27.4	69.7
1–5	5.8	27.5	33.3	37.6	29.1	66.7
6–10	7.4	28.1	35.5	36.9	27.5	64.5
11 or more	8.9	27.4	36.4	37.0	26.7	63.6
All	6.7	27.7	34.4	37.9	27.7	65.6

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Table 7.6 Weekly Hours Men and Women in 11 Cities in Sub-Saharan Africa Spend Performing Domestic and Market Work, by Religion
(percent)

	Hours domestic work/total household working hours			Hours market work/total household working hours		
Religion	**Men**	**Women**	**Total**	**Men**	**Women**	**Total**
Muslim	3.1	28.0	31.1	43.7	25.2	68.9
Catholic	8.3	28.0	36.3	34.7	29.1	63.7
Protestant	9.0	27.2	36.2	35.5	28.4	63.8
No religion	5.9	20.8	26.7	44.0	29.4	73.3
Other	7.3	28.5	35.7	35.4	28.8	64.3
West African Economic and Monetary Union (WAEMU)	3.7	26.6	30.3	39.9	29.8	69.7
All	6.7	27.8	34.5	37.7	27.8	65.5

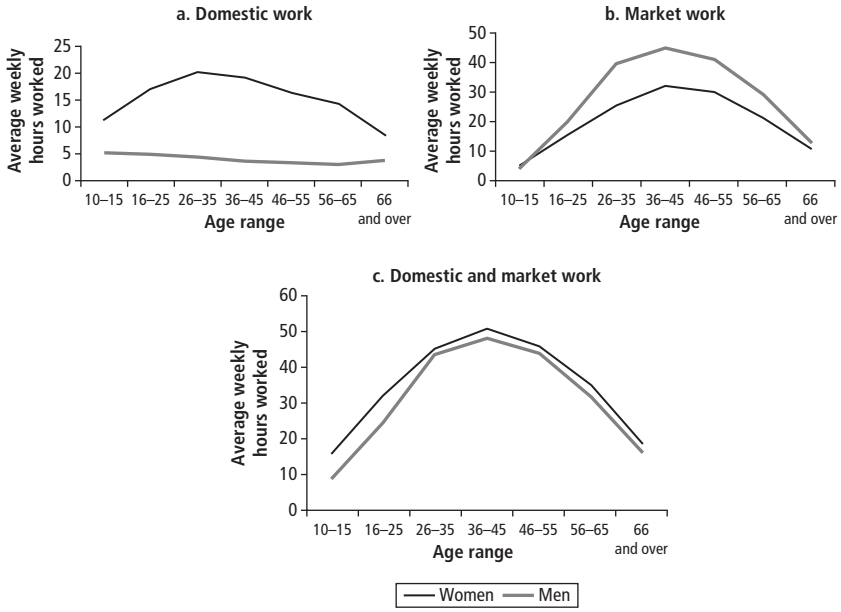
Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Social standards are also expressed through the roles assigned to individuals at different stages in their lives. School-age (10–14) children concentrate mainly on their studies, while providing considerable assistance with domestic tasks and working in the labor market. The gender-based division of labor is forged from a very young age: girls spend twice as much time on domestic activities as boys. Although the domestic work time curve is relatively flat for men over their life cycle (it dips slightly when they marry, before stabilizing), it takes the form of a bell curve for women, reaching its peak in the 26–35 age bracket before gradually falling off as the household grows and children are able to contribute (figure 7.6).

The market work curve is more concave for men than for women. Gender differences start to widen in adolescence, reaching their peak in adulthood, the most productive period (36–45). Women withdraw more gradually from working life than men. Entry into the labor market is problematic for young people (16–25), judging from the small number of hours of market work. Schooling beyond secondary education accounts for only a smart part of the low level of market work (the average number of years of education for this age bracket is just eight for all 11 cities and six for the WAEMU cities).

Two factors are probably at work here, in different proportions for men and women. Men suffer from a lack of wage employment opportunities because of the low level of private and public sector recruitment and their low skill levels. Women are held back by domestic tasks, related in part to the presence of young children, who are cared for exclusively by women in the household.

Figure 7.6 Average Weekly Hours Worked by Men and Women in 11 Cities in Sub-Saharan Africa, by Age



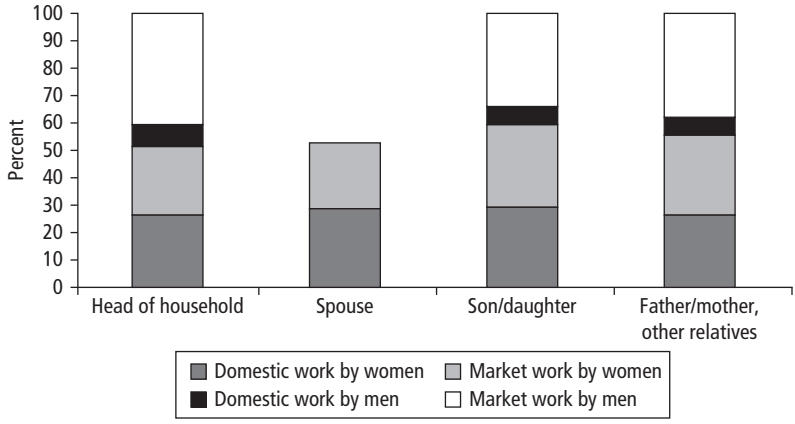
Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

When domestic working time is added to market working time, the inequalities narrow for the population over 25. These figures indicate that women work more than men at all ages.

The position in the household plays a minor role in women's specialization in domestic activities (figure 7.7). Female heads of household, wives, and daughters all spend more of their working time on domestic activities than their male counterparts. Household position comes into play for women only marginally, in the breakdown of domestic and market working time. Other relatives, who are more specialized in domestic work, make significant contributions to the household's market and domestic work. This category may include disguised forms of forced labor, such as foster children acting as servants for the households.

Table 7.7 sums up the differences found in the female participation rate; women's contribution to total working time; and their contribution to household income, with and without the inclusion of domestic work. The first two

Figure 7.7 Household Position and Division of Time between Domestic and Market Work in 11 Cities in Sub-Saharan Africa



Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

indicators were built using data collected in the 1-2-3 surveys; values had to be imputed for the contribution of domestic work to household incomes. Given the absence of markets for goods and services to substitute for domestic work, we imputed the equivalent of each country's minimum hourly wage for domestic work.

If account were taken of hours worked producing domestic goods and services, the female labor force participation rate would increase 70 percent (from 52 percent to 88 percent) on average, and the wide disparities in female participation rates across cities would narrow considerably. Female participation would be higher than male participation in all 11 cities (13 percent higher in WAEMU cities and 11 percent higher across the full sample). This finding holds when considering women's contribution to total working time. Inclusion of domestic working time in total household working time reveals the predominant contribution of women to working hours in the African cities in the sample.

If total income from the main and second job alone is considered, women account for 28 percent of total household income. Imputing a wage for domestic work (based on the minimum hourly wage) raises women's contribution to 38 percent. Looking at absolute amounts, the potential income from domestic activity is greater than the income from market activity in all WAEMU countries but not in Cameroon and Madagascar.

Table 7.7 Women's Economic Contribution to Economic Activity in 11 Cities in Sub-Saharan Africa
(percent)

City	Labor force participation rate		Total working time of household		Household income	
	Without domestic work	With domestic work	Without domestic work	With domestic work	Without domestic work	With domestic work
Abidjan	62.1	84.4	43.7	53.7	26.7	35.2
Antananarivo	54.5	94.6	44.2	52.3	35.9	41.9
Bamako	49.0	79.7	35.2	51.7	23.0	34.1
Cotonou	61.1	89.4	51.0	59.8	30.9	42.9
Dakar	48.0	82.8	35.5	52.7	26.9	42.6
Douala	57.6	96.2	37.2	49.5	26.7	34.7
Kinshasa	41.0	86.5	43.1	55.9	33.1	45.3
Lomé	69.1	95.3	49.8	59.3	32.1	43.2
Niamey	43.7	83.2	30.1	51.6	22.5	38.1
Ouagadougou	57.2	84.6	37.6	52.8	25.7	42.1
Yaoundé	51.2	95.7	37.2	49.0	30.6	37.1
West African Economic and Monetary Union (WAEMU)	56.4	84.9	41.5	54.4	26.7	38.2
All	51.5	88.0	41.2	53.5	27.9	38.1

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).

Model and Econometric Estimation of Determinants of Allocation of Time

This section examines the breakdown of time spent on domestic and market work. We postulate that the division of labor within the household (domestic work versus market work) is determined more by social standards than economic factors. Economic factors related to human capital play a marginal role because of the very low level of formal education and lack of formal job opportunities.

We adopt the approach proposed by Hersch and Stratton (1994) in their study of working couples in the United States, used by Anxo, Flood, and Kocoglu (2002) in their comparative study of couples in France and Sweden. One important difference between our analysis and these studies is that we focus on the gender-based division of labor of all household members, not just adults, as children in developing countries perform domestic work and sometimes participate in the labor market. The prevalence of extended families (42 percent of households in our sample) and the existence of polygamy (3 percent of households) also justifies considering all members 10 and older in the analysis.[8]

The dependent variable in the first equation is women's relative contribution to domestic (market) work. The dependent variable in the next two equations is total working time for men and working time for women in domestic (market) activities. The values of the dependent variables (relative male/female share and weekly working hours in domestic and market work) are left censored and range from 0 to 100 percent and 0 to 113 hours (leisure time is estimated residually). Hence the ordinary least squares (OLS) procedure produces biased results.[9]

A more suitable approach would therefore appear to be left- and right-censored Tobit estimates. The Tobit model assumes that the same variables determine both the probability of an observation being censored and the values of the noncensored observations. Moreover, the marginal effect of a variable is constrained to the same sign for both types of observations. Given that individuals with a zero value present particular characteristics (their nonparticipation is not random), the estimated coefficients present biases, even when taking account of the censored values.

Heckman's model ("Heckit") relaxes these assumptions by taking account of the possible selection bias (estimating the probability of observing a value different from zero) and the determinants of values above zero. In the model estimated below, the number of young children in the household is negative correlated with participation in market activities (and positively correlated with hours of domestic work); it is not necessarily correlated with the number of hours of market work. The merits of the Heckit model can be appreciated from the value of the Mills ratio coefficient. A value statistically different from zero indicates the presence of a selection bias that invalidates the Tobit estimation.

Three equations are estimated for each work aspect (domestic and market based). In the first equation, the dependent variable is the relative contribution of each woman (man) to domestic work. The other two equations seek to identify the determinants of domestic (market) working time separately for men and women. The first equation hence explains the gender-based division of labor; the other two equations are required to interpret how this division varies depending on the characteristics of individuals and their households. For example, an increase in the contribution to domestic work by the most educated men could reflect a decrease in absolute time spent on domestic work by educated women, without an increase in total domestic working time.

Table 7.8 reports the marginal effects estimated using the Tobit model. Although the residual normality and heteroskedasticity tests reject the residual normality hypothesis, and the Mills ratio coefficients are significant in most cases, our comments concern only the results of the Tobit model, because of problems encountered with the specification of the selection equation and implausible estimated coefficient values. These results should therefore be seen as initial estimations only.

Table 7.8 Determinants of Time Use (Domestic and Market Work) in 10 Cities in Sub-Saharan Africa

Variable	Percentage of women's domestic working hours/total household domestic working hours (1)	Women's domestic working hours (2)	Men's domestic working hours (3)	Percentage of men's market working hours/ total household market working hours (4)	Women's market working hours (5)	Men's market working hours (6)
Age (reference = 26–45)						
10–15	–3.92***	–3.27***	1.17***	–21.48***	–19.44***	–28.71***
16–25	6.24***	0.78***	0.94***	–9.16***	–7.71***	–9.01***
46–55	–10.06***	–2.41***	–0.28***	–0.79**	–0.35	–2.56***
56+	–19.33***	–7.12***	–0.11	–12.44***	–9.63***	–18.88***
Relation to head of household (reference = head of household)						
Spouse	6.43***	3.37***	1.86***	–11.41***	–1.99***	–3.39*
Son or daughter	–17.08***	–2.19***	0.16	–15.74***	–5.37***	–11.07***
Father or mother	–15.22***	–5.66***	–1.53**	–16.64***	–8.63***	–17.26***
Other relative	–10.93***	–0.64**	0.45***	–11.97***	–3.07***	–6.96***
Unrelated person	–1.52	1.86***	1.00***	–9.51***	–0.43	–4.16***
Level of education (reference ≥ 11 years)						
No education	2.42***	3.30***	–0.45***	0.33	3.23***	8.54***
1–5 years	2.08***	2.33***	–0.22***	0.74**	2.64***	8.73***
6–10 years	1.51***	1.53***	–0.15**	–1.16***	0.12	3.36***
Labor market						
Predicted hourly earnings	0.00	0.00	0.00	0.00***	0.00***	0.00***
Employed worker (equations 1–3)	–3.05***	–1.61***	–0.31***	–0.71***	–1.01***	–1.93***
Domestic worker (equations 4–6)						
Religion (reference = other religion)						
Muslim	1.17**	–0.01	–0.70***	–1.40***	–0.76**	1.76***

Catholic	–0.18	–0.03	–0.01	–0.32	–0.25	–0.56
Protestant	–0.27	0.31	0.03	–0.46	–0.44	–0.67
No religion	–1.72	–0.85	–0.02	0.09	0.67	1.55**
Dominant ethnic group	–0.22	–0.19	–0.23***	0.12	0.25	0.39*
Household's demographic structure						
Number of children 0–5	1.03***	0.41***	0.00	–0.29***	–0.39***	0.64***
Number of children 6–9	0.30**	0.15**	–0.02	0.18	0.03	0.07
Number of male children 10–17	–2.09***	0.05	0.03	–0.19*	0.12	–0.30***
Number of female children 10–17	–5.49***	–0.40***	–0.14***	–0.26***	0.31***	–0.03
Number of men 18–25	–0.68***	–0.07	–0.15***	–0.97***	0.06	0.68***
Number of women 18–25	–5.24***	–0.89***	–0.21***	–0.10	0.88***	–0.21*
Number of men 26–55	0.09	0.18**	0.04	–1.90***	–0.30***	–0.32***
Number of women 26–55	–3.70***	–0.62***	–0.22***	–1.31***	–0.03	–0.65***
Number of men 56+	1.01***	0.28*	0.10	1.57***	0.26	1.68***
Number of women 56+	–0.58*	–0.13	–0.10	0.72***	0.20	–1.45***
Household type (reference = couple with children)						
Couple without children	18.19***	–0.63*	–0.04	0.18	–1.32***	0.90*
Nuclear single parent	1.75***	0.27	–0.09	5.91***	0.97**	0.64
Extended single parent	–6.28***	0.18	–0.11	–0.49	0.37	1.08**
Extended couple	–6.63***	–0.15	0.16**	0.55**	1.31***	0.38
Number of spouses in the household	–2.69***	–0.51***	–0.47***	–0.95***	–1.04***	–0.06
With servants	–0.22	–2.25***	–0.65***	1.44***	1.10***	–0.77
Access to public services (reference = has access)						
Electricity	0.08	–0.31**	–0.24***	–1.05***	–1.25***	–0.81***
Water	–0.01	–0.53***	–0.23***	–0.33	–1.13***	–1.53***

(continued next page)

Table 7.8 (continued)

Variable	Percentage of women's domestic working hours/total household domestic working hours (1)	Women's domestic working hours (2)	Men's domestic working hours (3)	Percentage of men's market working hours/ total household market working hours (4)	Women's market working hours (5)	Men's market working hours (6)
Electric, gas, or oil stove	0.07	0.09	0.11	–0.34	–0.62***	–0.48*
Number of rooms in dwelling	–0.06	0.01	0.04***	–0.06	–0.16***	–0.13**
Household with car	–0.41	–1.51***	–0.52***	–1.58***	–1.13***	0.65**
Household with bicycle or motorbike	–0.13	0.21	0.09	–0.28	0.92***	1.43***
Household with refrigerator	–0.61*	–0.48***	–0.08	0.41*	0.20	–0.75***
City (reference = Antananarivo)						
Abidjan	5.92***	–3.33***	–4.72***	0.95*	0.20	–3.67***
Bamako	5.61***	–2.73***	–4.80***	–1.25**	–4.30***	–6.08***
Cotonou	5.67***	0.46	–2.01***	2.88***	1.99***	–2.92***
Dakar	2.66***	–0.96***	–4.09***	–3.74***	–6.23***	–2.97***
Douala	1.95***	2.37***	–0.27*	–0.60	–1.05**	0.76
Kinshasa	2.43***	–2.06***	–2.73***	–0.26	–2.25***	–10.66***
Lomé	4.90***	3.98***	–0.79***	2.85***	2.51***	–1.13**
Niamey	3.86***	–0.58*	–3.80***	–5.00***	–8.26***	–5.60***
Ouagadougou	4.22***	–1.60***	–4.54***	–1.79***	–4.72***	–5.62***
Yaoundé	1.89**	1.84***	–0.10	–1.67	–2.51***	–0.44
Number of observations	42,522	45,311	42,980	42,189	45,311	42,980
Number of uncensored observations	28,359	34,247	14,346	15,984	18,323	22,746

Sources: Based on Phase 1 of the 1-2-3 surveys of selected countries (see table 7.1 for details).
Note: Figures show results of right- and left-censored Tobit models (marginal effects evaluated with respect to the average value for the explanatory variables).
* significant at the 10 percent level, ** significant at the 5 percent level, *** significant at the 1 percent level.

Effect on Domestic Labor

Age has a strong impact on the division of domestic labor by gender. Women 16–25 work 0.8 hours a week more than women 26-45, a period during which they have left school, married, and have young children. Women 46–54 reduce the time spent on domestic work slightly (2.4 hours less than women 24–45); women 56 and older spend 7.1 hours less a week than women 26–45. After 55, women are often heads of their household or members of extended households.

The relative contribution of women to domestic work is similar to the absolute number of domestic working hours. Men perform very few hours of domestic work throughout their life cycle. They perform the most domestic work when they are children (10–15). The reverse is true of women, who put in fewer hours of domestic work at each end of their life cycle.

Position in the household also plays a very important role in the division of labor by gender. Women who are married to the household head devote the most time to domestic work; daughters and mothers contribute less time. This pattern would seem to suggest a hierarchy in which domestic working time decreases from the outer rim of the household circle (nonrelatives) inward toward the center (children). Consequently, the daughters and mother of the head of household spend fewer hours on domestic work (2.2 fewer for daughters and 5.7 fewer for mothers) than other female relatives (0.64 hour less) and nonrelatives (1.9 more hours). Sons contribute virtually as much time (0.16 hours) as household heads; other male relatives spend half an hour more on domestic work than the household head (males nonrelatives dedicate one hour more than the household head to domestic work). Qualitative studies are needed to determine whether this work is being performed by foster children or reflects payment for accommodations (see chapter 12).

The type of household also plays an important role in the division of labor within the household. Women make smaller contributions in extended households than in other types of households, probably because domestic work is distributed among a larger number of people and individuals on the outer rim of the household circle make a larger contribution to domestic tasks. Women in polygamous households also make smaller relative and absolute contributions to domestic working time. The presence of servants in the household significantly decreases the number of domestic working hours performed by women (–2.3 hours) and moderately reduces the number worked by men (–0.65 hour). The decrease in women's contribution to domestic work compared with the share of men (–0.22 percentage points) is small and not significant.

Having a larger number of women in the household reduces the contribution of each woman, especially for women 10–25. Having a larger number of children under 10 increases women's contribution to domestic work; it has no

effect on the domestic workload of men. The division of domestic labor by gender changes very marginally with the arrival of adult men in the household.

Relative to non-Muslim women, Muslim women account for a larger share of the household's total time spent on domestic activities, because Muslim men spend less time on domestic activities. Islam therefore appears to be one of the channels, albeit a secondary one, through which social standards and practices concerning men's role are crystalized.

Belonging to the dominant ethnic group has no effect on either the division of domestic labor by gender or the time women spend on domestic work. However, it contributes to a modest reduction (0.21 hour) in the time men spend on domestic work. The ethnic group variable could be said to be a proxy for social standards, already partly taken into account by religion. Men in the dominant ethnic group may therefore be thought to have more power in the household, enabling them to reduce the time spent on domestic work.

Contrary to expectations, access to public services has no significant effect on the domestic division of labor by gender. This result can be explained by the fact that access to water and electricity reduces the domestic tasks performed by men and women in similar proportions. Access therefore reduces total domestic working time for the household as a whole rather than redistributing labor by gender.

Household appliances do not change the household's division of labor by gender or affect the absolute working time of men or women. Household wealth, measured by vehicle ownership and the number of rooms in the dwelling, also has no impact on the division of labor. Dwelling size has a positive effect on the time men spend working, as they generally are responsible for house repairs, but no impact on women's working time. However, ownership of a car reduces women's domestic working time by 1.5 hours and men's by 0.5 hour. The effect gives rise to a slightly more female-friendly division of domestic labor (0.4 percentage point reduction in women's share of domestic labor), but the impact is not statistically significant.

Women's education increases equality in the division of domestic work, tipping the balance more than proportionally in women's favor at each level of education. However, as with religion, the reduction in inequalities in the distribution of domestic work comes from adjustment in the hours of domestic work by women only. Women with higher education spend 2.4 hours less on domestic work than women who did not attend school; this reduction narrows to 2.1 hours for women with 1–5 years of education and 1.5 hours for women with 6–10 years of education. The opposite trend is observed for men: the more educated they are, the more they participate in domestic tasks. However, the marginal effects are fairly small: men with no education perform less than half an hour less domestic work a week than men with more than 10 years of education (0.22 hour less for men with primary education and 0.15 hour less for men

with secondary education). Education thus makes only a modest contribution to improving equity in the division of labor by gender, and its effect works more by reducing women's working time than by increasing men's working time.

Labor market participation implies a decrease in the share of domestic work performed by women, because of fewer hours of domestic work performed by women (–1.61) and men (–0.31). Households in which women participate in the labor market post lower total domestic working time. The predicted level of hourly earnings has no significant impact on the division of domestic labor by gender or the domestic working time worked by men and women.

Effect on Market Labor

The results on the division of market work are similar to the results for labor. Larger deviations are found for women 10–15 and 56 and older (that is, at the two ends of the life cycle). Spouses of the household head contribute just two hours less than the head of household to market work; nonrelatives come in third place after household heads and spouses, making a valuable contribution to the household's income.

The gradient for the level of education is always negative: the higher the level of education, the fewer hours people work in the market. Men with no education work 3.2 hours more and women work 8.5 hours more than people with 11 years or more of education. The level of education therefore has a strong effect for men and a moderate impact for women. Participation in domestic work reduces the relative participation of women in total market hours worked as well as the absolute number of market hours worked by men and women (–1.0 hour for men and –1.9 hours for women).

Muslim women contribute less than non-Muslim women to the household's market work, both because they work fewer hours than non-Muslims and because Muslim men work more hours. Belonging to the dominant ethnic group has no significant effect on the division of labor.

The household's demographic structure affects the gender-based division of market work. An increase in the number of young dependent household members (children under five) reduces women's relative and absolute contribution to market work. An increase in the number of dependent elderly members (people 56 and over) is associated with an increase in working hours for elderly men and a decrease for elderly women. The number of hours worked in the market decreases for both men and women as the number of male adults in the household increases. The increase in the number of adult women and adolescent girls enables women to increase the number of market hours worked, probably as a result of the lightening of their domestic workload. At the same time, the increase entails a very slight reduction in hours worked in the market for adult men (0.2 hour less for men 18–25 and 0.7 hour less for men 26–55).

Turning to specific geographic effects, Cotonou and Lomé stand out for the much larger contribution of women to market work. Men in these cities work more hours than men in the other cities (except in Cameroon and Madagascar).

Conclusion

On average, domestic work—which remains invisible in national accounts and labor market indicators—represents nearly one-third of total working time in the 11 cities examined. It consumes more time than employment in the formal sector. Large differences are observed across cities in both total working time and the breakdown between domestic and market work. Despite their lower labor market participation rate, women account for 56 percent of household working time (62 percent in WAEMU cities).

Unlike in other regions, women in Sub-Saharan Africa do not "specialize" in domestic activities. Women account for 43 percent of household hours spent working in the labor market (as well as 89 percent of hours spent on domestic work). Women spend 60 percent of their working hours in the labor market and the remaining 40 percent on domestic work.

A number of factors are correlated with gender-based inequalities in the division of labor. Social standards appear to play a decisive role: relative position in the household, age, and Muslim religion all have a significant impact on the gender-based division of both domestic and market-based work. Differences in education are also significant, but their impact is modest and the gradient by level of education is not very steep. Extended households, polygamous households, and households with a large number of adults have a different gender-based division of labor than households made up of couples with young children and monogamous households. Contrary to expectations, access to public services (electricity, water) has no apparent effect on the division of domestic labor by gender. Differences across cities remain significant when account is taken of the observable characteristics of individuals and their households.

The analysis presented in this chapter takes a first step toward including domestic work in GDP estimates and labor market indicators. It sheds light on the question of intrahousehold inequalities, a central aspect in the role and place of women in African societies. Other aspects of intrahousehold inequalities have not yet been explored. Future research could examine time use and other aspects of intrahousehold inequalities, such as gender differences in education and healthcare. It could also take individual heterogeneity into account. Another interesting avenue would be to link the perception of well-being with intrahousehold inequalities in the division of working time, in order to shed light on why such inequalities persist.

Notes

1. The level of household welfare is underestimated when the production of goods and services produced and consumed by the household is not taken into account. As cities and incomes grow, these goods and services are increasingly incorporated into the market sphere, causing gross domestic product (GDP) growth to be overestimated (Stiglitz, Sen, and Fitoussi 2010). In addition to this material welfare dimension, some authors have defined a new form of poverty among households that spend an excessive number of hours working: time poverty (Blackden and Wodon 2006). Although work (market and nonmarket) is the main source of household income and hence welfare, too much time spent working takes away from leisure, rest, family life, and studying and therefore reduces quality of life.
2. The United Nations Statistics Division defines "nonwork" as time spent in "personal care and free time," which includes "bathing, sleeping, eating, time related to personal medical attention, resting, organizational participation, sports and games, socializing and media related activities (reading, television…" UN 1991). All other activities are classified as work. This classification attempts to make visible the economic value of unpaid work in society and to capture the relative work burdens of men and women" (Whitehead 1999, p. 52).
3. The references include administrative reports published by statistics institutes, sometimes jointly with UNDP.
4. Working time is defined here as the counterpart to leisure time. It does not take into account productivity differences, which would have to be considered if the purpose were to study gender-based income disparities. The focus is the distribution of domestic and market time by different household members and its implications for the labor market participation rate.
5. Although Abidjan and Cotonou are not administrative capitals, we refer to them as capitals because they are the most important economic centers in their countries (Cotonou is also the seat of government).
6. This correction affected less than 1 percent of individuals.
7. This term actually covers production for the market and for own consumption (in agricultural produce). It would be more relevant to talk about activities included in the System of National Accounts.
8. Skoufias (1993) also adopts this approach, in a study of the determinants of the division of labor in rural households in India.
9. Nearly half (52 percent) of individuals declare zero market working hours, 44 percent declare zero domestic working hours, and 22 percent declare zero total working hours.

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AFRICA DEVELOPMENT FORUM

Urban Labor Markets in Sub-Saharan Africa

Philippe De Vreyer and François Roubaud,
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