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FEMALE LABOR FORCE PARTICIPATION AND DEVELOPMENT

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CONTENTS

LIST OF CONTRIBUTORS	vii
INTRODUCTION <i>Ismail Sirgaledin</i>	ix
PART I. CONCEPTUAL AND METHODOLOGICAL ISSUES IN FEMALE LABOR FORCE PARTICIPATION	
EMPIRICAL CONSIDERATIONS FOR MODELS OF FEMALE LABOR SUPPLY AND FERTILITY IN DEVELOPED COUNTRIES <i>Richard Frank and Rebeca Wong</i>	3
OCCUPATIONAL SEGREGATION BY GENDER: RELEVANCE TO LABOR SUPPLY AND FERTILITY RELATIONSHIPS <i>Ruth E. Levine</i>	17
METHODOLOGICAL CONSIDERATIONS IN MEASURING WOMEN'S LABOR FORCE ACTIVITY IN DEVELOPING COUNTRIES: THE CASE OF EGYPT <i>Richard Anker</i>	27
MAKING FEMALE LABOR FORCE PARTICIPATION COUNT IN POPULATION CENSUSES: EVIDENCE FROM PARAGUAY <i>Catalina H. Wainerman</i>	59
PART II. FEMALE LABOR FORCE PARTICIPATION IN DEVELOPED SOCIETIES	
REFERENCE GROUPS, OCCUPATIONAL CLASS, AND MARRIED WOMEN'S LABOR FORCE PARTICIPATION <i>Susan Elster and Mark S. Kamlet</i>	89

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MAKING FEMALE LABOR FORCE PARTICIPATION COUNT IN POPULATION CENSUSES: EVIDENCE FROM PARAGUAY

Catalina H. Wainerman

I. INTRODUCTION

The inaccuracy of female labor force statistics, especially in developing countries, has already been found to be commonplace by experts in the field. Population censuses underenumerate the females' economic contribution. This is the result of the specific ways that women are inserted in the labor market, and of the characteristics of the census procedures, both dependent on the cultural assumptions concerning the sexual division of labor.

The study partially summarized here attempted to improve the accuracy of the census measurement of the female labor force. Its ultimate aim was to grant female workers the same chances of being counted in labor statistics as men have. This implies the acceptance—because of technical, not ideological or

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theoretical reasons—of the official definition of the concepts “economic activity” and “labor force.”

The research was conducted in two Latin American countries, Argentina and Paraguay, with a twofold aim. First, to test the effects on the reporting of female workers by: (1) the types of procedures of data collection (basically types of questionnaire and interviewers' training); (2) the length of the reference period; and (3) the length of the minimum working-time requirement. Second, to test the adequacy of alternative census instruments designed to record the economic activity of the population after the recommendations of the ILO (1983). Although the study centered on women, men were also studied because the comparison between sexes throws additional light on the resulting pictures, and also because some sectors of the male population are also underreported by current census statistics.

This paper reports on the results of the Paraguayan survey, carried out with the collaboration of the Bureau of Statistics of Paraguay in 1986. The paper begins by summarizing the major conceptual and technical problems which have been identified. Some empirical evidence of the inaccuracy of the census measurement originated by those problems is shown. A review of international recommendations on the labor force measurement precedes the description of the Paraguayan research and its results. It ends with an assessment of its consequences for future population censuses.

Conceptual and Technical Problems

Although population censuses make no sex differences when defining the labor force activity (i.e., the same questions on activity condition are used for women and men), the quality of its recording is sex-differentiated. Ultimately, this is due to cultural reasons, and more specifically, to the socially shared ideas about the sexual division of labor. They are embedded in the conceptual definitions of labor force, in their operational translation into instruments (questionnaires and interviewers' training), in the characteristics of the labor behavior of women, and in their own perceptions of the nature of their activities. It is important to stress that women are not the only underenumerated sector of the labor force. The economic activity of the youngest and the oldest sectors of the population, irrespective of sex, also tends to be ignored.

Due to the need to articulate the reproductive and the productive roles, and because of the fewer opportunities for formal education and training for the world of “productive” work, it is more frequent for women to work part-time or seasonally; in activities that are difficult to differentiate from domestic ones; in the more traditional sectors of the economy; in family enterprises without pay or on own-account basis; and/or inside the household or family unit. Other difficulties are added in the rural areas, especially in the agricultural sector. These difficulties derive from the very characteristics of the agricultural activities—the

work is conducted in household units that integrate consumption and production, often difficult to distinguish. It should be added that in most societies where the sexual division of labor assigns the leadership of production to men and the reproduction to women, the activity of women engaged in production is seen as marginal and subsidiary. This leads many women to perceive their work not as economic activity as such, but as part of the homemaker's duties or of the *help* they owe to other productive members of the household, whether they are their fathers or their husbands. Hence, in certain sectors, although performing the same activities, women see themselves as homemakers (economically inactive according to the censuses), whereas men perceive themselves as workers (economically active according to the censuses).

From the perspective of censuses, there are various factors that contribute to the low quality of the enumeration of the female labor force. The main factor concerns the definition of “economic activity” and “labor force”; other factors deal with aspects of the data collection procedure. Let us start with the definition.

Experts agree that until the 1980s, international recommendations have defined “work” and “economic activity” by following the model of developed economies and the behavior of salaried, stable, full-time workers. It is also agreed that international standards are difficult to apply to developing countries where laborers are more likely to work seasonally rather than all the year-round, to be unemployed rather than formally employed, and to engage in a fluid pattern of diverse and shifting economic activities. Finally, there is a consensus that this definition lacks conceptual clarity (Anker, 1983b; Beneria, 1982; Hauser, 1974; Blacker, 1978, 1980; Dixon, 1982; Horstman, 1977; PREALC-ILO, 1979; Seltzer, 1978). The distinction between economic and domestic activities is not based on a clear criterion but on a set of arbitrary, nonrational conventions, established by the economists to estimate the national income. It could be asked, for instance, why the production of the raw material used for cooking is considered economic but the preparation and elaboration of the same raw material for consumption is not. According to some authors, the division is not arbitrary, but based on the evidence of the socially shared ideas regarding the sexual division of labor.

Blacker (1980) suggests that the criteria applied to determine the character of the activities leading to the production of a loaf of bread is not their intrinsic nature but whether they are performed by “housewives”—that is, by female, unpaid family workers. Anker (1983b) points out that those activities typically done by women (like subsistence livestock, food processing) are usually considered noneconomic, “almost as if the criteria were made on the basis of existing knowledge on male and female activity patterns” (p. 714).

The length of the reference period, and of the minimum working-time required for a person to be considered economically active are also aspects of the definition of labor force. The use of a short reference period (one week) and the requirement of a large minimum working-time (most of the week) contribute to

the underenumeration of female workers who, more often than their male counterparts, move in and out the labor market and work part-time or less. Evidence of the sex-differential effects of these factors can be found in Mueller (1974), Durand (1975), Horstmann (1977), PREALC-ILO (1979), ECLAC (1982), Dixon (1982), De Vries Bastiaans (1983), Pitten (1983).

Regarding the question of data collection procedures, in many developing countries censists are badly trained, poorly remunerated, have little or no motivation at all, and are reluctant to study or even read the instruction manual. They are barely supervised and, last but not least, they take preconceptions (shared by the interviewees themselves) to the interviews about the suitability of certain activities for women and men, which lead them to classify married women as housewives and young and old people as students or retired, that is, as economically inactive, without further investigation.

As far as the questionnaires are concerned, many censuses use what seems to be one single item to collect information on the activity condition of the population, consisting of one question followed by a set of response alternatives. The format makes the interviewer read them all together, directing the interviewees to *choose* one alternative. Because most censuses ask solely for the *main* activity, married women, young students, and retired people engaged in economic activities tend to declare themselves as economically inactive (Lopes, 1981). Other problems concerning the questionnaires derive from the use of terms like "job," "employment," and "paid work," which make interviewees equate economic activity with formal, full-time, remunerated economic activity. This question has been extensively discussed by Anker & Knowles (1978) and by Anker (1983b).

For the 1970 round of Latin American population censuses there is abundant empirical evidence of the sex-selective underenumeration of the labor force. The evidence was produced by comparing the activity rates obtained by censuses and by (more valid) household surveys collected about the same time in various countries, using the same conceptual definition of labor force, the same length of the reference period, and the same minimum working-time requirement. The census underenumeration, high among women and low among men, is higher among workers in the agricultural sector, unpaid family workers, the less educated, and so forth (Recchini de Lattes & Wainerman, 1986; Wainerman & Moreno, 1987; Wainerman & Recchini de Lattes, 1981). To give a few examples, the 1970 population census of Sao Paulo (the most developed region of Brazil), underenumerated 18 percent of female workers but only 3 percent of male workers, more among women occupied in agricultural activities (60 percent) than in all other activities (10 percent), more among unpaid family workers (84 percent) than among salaried women (9 percent). In the Northeast region (the most backward of Brazil), the same census underenumerated 52 percent of female workers but a bare 4 percent of male workers. Again, the female underenumeration was higher among agricultural workers (63 percent) than among the rest (44 percent), among unpaid (88 percent) than among salaried workers (29

percent). Similarly, the 1974 Guayaquil (Ecuador) census underenumerated 27 percent of all female workers but only 7 percent of male workers, and much more among females with primary education or less (34 percent) than among those with the highest educational level (16 percent). Also in Colombia, the 1973 census underenumerated 12 percent of all female workers—32 percent among rural residents and 7 percent among urban ones—but not one single male worker.

The low quality of the measurement of the female labor force and some of its causes were already acknowledged some time ago (Bancroft, 1958), but it was not until the last decade that the awareness expanded (Anker, 1983b; Baster, 1981; Beneria, 1982; Dixon, 1982; D'Souza, 1980; Durand, 1975; Fong, 1980; Hamad, 1984; Hauser, 1974; Leon, 1985; Safilios-Rothschild, 1982; Standing, 1978; Wainerman & Recchini de Lattes, 1981; Zurayk, 1983). It has been the central topic of the agenda of several seminars and conferences. In Latin America, researchers from PREALC (ILO), and ECLAC, among others, have especially concentrated on the measurement of employment in rural areas and in the urban informal sector. (For rural employment, see Buvinic, 1982; Deere & Leon de Leal, 1982; ECLAC, 1982; Klein, 1983; Paraguay DGES, 1979; Pisoni, 1983; PREALC-ILO, 1979; Torrado, 1978, 1981; Wainerman, Moreno, & Geldstein, 1985). For the measurement of the informal sector, see Arizpe, 1976; Kritz & Ramos, 1976; Marulanda, 1979; Pina Riquelme, 1981; PREALC-ILO, 1978; Raczyński, 1979; Souza & Tokman, 1976; Tokman, 1977).

The wide recognition of the conceptual and technical inaccuracy of population censuses and the need to review and enlarge current norms and recommendations was taken up at the 13th International Conference of Labour Statisticians (ILO, 1982). The report prepared for the Conference recognized the need to reexamine the existing concepts and methods so as to improve the conceptualization and measurement of the economic participation of women both in and outside the home (par. 12). With respect to the measurement, it was suggested that "it is important not only to control available stereotypes and sex biases but also to conduct, wherever necessary, specialized surveys to identify objectively the size, nature and sources of biases involved and to develop appropriate methods of reducing them" (par. 230).

The recommendations that emerged from the Conference modify the definition of labor force used up to the 1980s in a number of aspects. The major recommendations are: (1) the explicit inclusion of self-consumption producers within the labor force (whenever this activity makes "an important contribution to the total consumption of the household"); (2) the elimination of the minimum working-time criterion for everybody, including unpaid family workers, and the adoption of just one hour of activity to qualify as active; and (3) the use of two reference periods (one week and one year) to collect information on the "current" and the "usual" active population.¹ Even though these modifications improve the conceptual definition of labor force, there is a vagueness as regards a number of aspects such as the criterion to distinguish economic and noneconomic activities

and the making of the meaning of an "important" contribution to the household's consumption clear. These questions, as well as the lack of recommendations for the operationalization of concepts, may become sources of invalidity in future registers of the labor force.

So far, attempts to improve the census recording of the female labor force have been conspicuously scarce, so only a few exceptions can be mentioned. Two exceptions come from the ILO, one from the Bureau of Statistics (Mehran, 1985; Trigueros Mejia, 1986), the other from the World Employment Programme (Anker, 1987; Anker, Khan, & Gupta, 1987). The third exception is partly summarized in this paper.

II. THE DESIGN OF THE STUDY

Context, Samples and Surveys

The research in Paraguay was conducted in Asuncion, the country's capital city, and in the rural area of the Piribebuy district. According to the 1982 census, the metropolitan area of Asuncion had 800,000 inhabitants. Being a capital city, the main economic activities are related to the tertiary sector, that is, services—mostly government services—and commerce. The latter has been the most dynamic sector in recent years; its development being linked to the import and export commerce, as well as to the petty trade. Manufacturing and construction are secondary activities in Asuncion.

The Piribebuy district is predominantly rural: 73 percent of its population was rural according to the 1982 census. It has a mild climate, with little variations during the year. It is an area of old settlements with a prevalence of small landholdings (*minifundios*) and subsistence economy. The typical productive unit does not go beyond 18 acres, but more than half do not reach 10 acres. The small size allows the demand for labor to be met by the family unit. The economy of Piribebuy is based on agriculture, mainly maize, cotton, *mandioca*, and sugar cane. There is also some manufacturing of agricultural products—honey cane, honey sugar, *mandioca* starch—but in very small productive units. The diversified nature of the agricultural activity, where the production of sugar cane is combined with cotton and with subsistence production, requires labor throughout the year, except from mid-July to mid-September, which is a period devoted to maintenance activities.

Fieldwork was carried out between August and September, the period of low labor demand in Piribebuy, which we chose to make our test stronger and because of its relative closeness to the 1982 census collection date (July). We conducted three methodological surveys (field experiments) in each locality on statistically representative, comparable, household samples (see Appendix and Footnote 4).

One of the surveys (the "CENSAL survey") reproduced the census. In the other two, we put an alternative data collection procedure in practice, establishing a short reference period in one case, the "CENEP-week survey," and a long one in the other, the "CENEP-year survey." There are three explanatory variables whose effects on the enumeration of the labor force we studied: type of procedure of data collection (CENSAL and CENEP); length of the reference period (one week and one year); and length of time worked during the reference period (short—1 to 19 hours per week, or less than 6 months per year; part-time—20 to 34 hours per week, or about six months per year; and full-time—35 or more hours per week, or 12 months per year). The first two variables were manipulated when creating the experimental groups; the third one was investigated during the interviews.

We interviewed a total of 1,400 active-age persons (12 years of age and over) of both sexes in 365 households in Asuncion, and about 3,600 persons of the same age in 1,152 households in Piribebuy.

Conceptual and Operational Labor Force Definition

The three surveys used the same conceptual definition of labor force, following the 1982 ILO definition quite closely, but with some modifications. The first modification is that we focused on the enumeration of one part of self-consumption laborers considered active by the ILO: the producers of primary products (vegetable cultivation, sowing, poultry and animal caring, which are mostly feminine activities). We did not place any stress on, but we did not explicitly exclude, people processing primary products produced by themselves, or producers of fixed assets like houses, boats or canoes. In the case of the former, the reason is that it is extremely difficult to draw the line between making cheese, butter or fat and cooking for one's own consumption (considered noneconomic by the ILO); thus, we preferred to run the risk of losing some of the producers rather than to decrease the validity of the measurement.

Another modification is that we did not limit the definition of self-consumption producers to those whose activity makes an *important contribution* to the total consumption of the household. This was due to the conceptual and operational difficulties involved in determining what is "important" (For what kind of household structure? For which consumption level? According to objectives or subjective parameters?, etc.). Nevertheless, using the length of working time during the reference period as a proxy, it is possible to calculate activity rates that take the "importance" of the activity into account. We did not set any minimum requirement of working time in any of the three surveys. Summing up, the population of both sexes aged 12 years or more was classified as economically active or inactive, and the former as employed or unemployed in this study.

The CENSAL survey reproduced the procedure (schedule and interviewers' training) used by the 1982 Paraguayan census (and by most 1970 and 1980 Latin

American population censuses) to investigate the activity condition of the population during the previous week. One single question followed by a set of pre-coded response alternatives was applied by interviewers with an average of two-hours training. Its format was:

- Q.7 What did you do last week?
 Worked.
 Did not work but had a job.
 Looked for work.
 Engaged in household activities.
 Studied.
 Is retired, pensioned or rentier.
 Is sick or invalid.
 Other situation, which one

The CENEP-week and CENEP-year surveys used a group of questions and two-days interviewers' training. The former set the previous week as the reference period, the latter the previous year. The three surveys collected information on sociodemographic and economic variables such as sex, age, marital, educational and household status, occupation, industry, employment status, place of work, time worked, destination of the agricultural production (mostly for the market or for self-consumption).

The CENEP questionnaire contains a group of seven questions when the reference period is one week and five questions when it is one year. Its design transmits the principle "you are active unless you prove otherwise," and it was applied to every person aged 12 years and over. In fact, it displays the response alternatives of the single CENSAL question into a set of four questions (Q7, Q9, Q10, Q12), to which three are added. One of these (Q8) makes the definition of work and economic activity explicit by giving examples of activities chosen among those that are generally invisible to interviewees and to interviewers (carried out *inside* the household, for a *short* time, *helping* another worker, similar to domestic chores, and so on). A second one (Q11) reiterates the question on job seeking. The third question (Q13), called the "self-consumption module," emphasizes the elicitation of self-consumption producers. We presented it at the end of the household interview to every member (of all rural units and of those urban units with a plot of land that allowed growing vegetables, raising chickens, and so on) and who had been classified as economically inactive by their responses to the previous questions. It was included in another schedule, not in the central one, though we present it here below Q12 to make the point clear. The phrasing of all questions required a yes or no answer before proceeding to the next one, as follows:

- Q.7 During last week, did you work at anything?
 yes - no

- Q.8 And during that week, did you do or *help* to do any activity, paid or *unpaid*, *inside* or outside your household, if only for a *few* hours? For instance: helping in a grocery store or kiosk; selling crafts, food, vegetables, newspapers, lottery tickets or cosmetics; planting, harvesting, or raising chickens *to be sold*, washing, ironing, or sewing clothes *for others*; making confitures, cheeses, or knitting *to sell*; taking care of children or old people *for pay*.
 yes - no
- Q.9 During last week, did you not work because of illness, leave, strike, bad weather conditions, or any other temporary reason, even though you had a job or an occupation?
 yes - no
- Q.10 During that week, did you look for a job or any activity by talking to friends, offering yourself in a firm, advertising or answering ads, or in any other way?
 yes - no
- Q.11 During that week, did you *stop looking* for a job or an occupation because either you or a family member were sick, because of bad weather conditions, or for any other reasons?
 yes -no
- Q.12 And during that week,
 Were you a housewife and did you not work?
 Were you a student and did you not work?
 Were you retired, pensioned or rentier and did you not work?
 Were you chronically sick or invalid and did you not work?
 Were you in another situation?
 yes - no
- Q.13 Although you've already said that you didn't carry out any activity, during last week, did you work in the family farm or did you raise chickens for your own or your family consumption, even if only for a few hours?
 yes - no

The CENEP-year questionnaire was identical except for the reference period—"the last twelve months"—and for the elimination of Q9 and Q11, which were meaningless for such a long reference period.

It should be borne in mind that CENEP questionnaires operationalize a set of theoretical criteria. They were not meant to be applied in all details in its current design in future censuses. The format of the set of questions allowed us to determine the capacity of each one to identify labor force members and, at the same time, to identify the factors that make for greater improvement in the counting of workers.

As regards the interviewers' training, the CENSAL procedure was the usual: brief, completed in one session lasting two or three hours, devoted to handling the questions and the definition of their categories. The CENEP procedure comprised four sessions lasting two days. It included two sections. One was devoted

to handling (conceptually and technically) the questionnaire and included role-playing and evaluating the trainees. The other was devoted to sensitizing data collectors to the socially-shared ideas about the sexual division of labor in order to make them aware of groups of the population (women, young and old people) who are liable to be defined as inactive without further investigation and on the exclusive basis of sex and age characteristics. This section of CENEP's training was not meant to be used in population censuses; it was designed to assess the extent to which sex biases are present among interviewees.²

We collected information in the three surveys on the amount of time each employed person had worked during the reference period in order to test the effect of varying the minimum working-time requirement. The question was posed in quantitative terms and reiterated in qualitative terms for respondents unable to answer otherwise. For the weekly period, time was requested (quantitatively) in number of hours or (qualitatively) in terms of three predetermined categories: "the whole day," "about half day," "short time," day by day, seven days of the week. The categories used in the analysis reflected the total time worked per week; they were: 1-19 hours (short time), 20-34 hours (part time), and 35 hours and over (full time). For the yearly period, time was qualitatively requested in terms of: "twelve months," "at least six months," and "at least one month."

Whenever possible, we requested interviewees to answer by themselves in the three surveys in both areas. The three questionnaires were worded in Spanish and in *j'opara* (colloquial Guarani). The interviewers, all bilingual, used either language, according to the needs of the interviewees.

III. RESULTS

The High CENSAL Underenumeration of Females, the Low CENSAL Underenumeration of Males

It is important to stress at the beginning that we were highly successful in setting up a census-type operation in both Paraguayan localities, as shown by the statistically significant similarity between the activity rates obtained by the CENEP-week survey and by the 1982 population census (see Table 1). This gives more weight to the results of this study.

The CENEP surveys enumerate significantly many more workers than the CENSAL survey in both areas. This greater enumeration is clearly different according to sex and to the area of residence (see Table 1 and Figure 1). The CENSAL survey underenumerates as much as 84 percent of the rural women—at a time of *low* labor demand—and 42 percent of the urban women counted by the CENEP-week survey, but only 10 and 14 percent of rural and urban males, respectively. In other words, the proportion of the working women who do not

Table 1. Economic Activity Rates According to Data Collection Procedures and Length of the Reference Period, By Sex and Locality

Data collection procedures	Asuncion		Piribebuy	
	Women	Men	Women	Men
CENSAL (1)	34.2	71.7	13.7	83.6
CENEP-week (2)	59.0	83.6	87.6	92.8
CENEP-year (3)	69.2	86.6	91.2	95.6
1982 population census (4)	37.0	75.2	14.3	88.2
CENSAL underreport: (2-1)/2	42.0	14.2	84.4	9.9

Note: All differences between rates 1 and 2, 1 and 3, and 2 and 3 for both sexes, in both localities, are statistically significant at the .05 level with only one exception, that between Asuncion male rates 2 and 3. All differences between rates 1 and 4 for both sexes, in both localities, are not statistically significant at the .05 level with only one exception: that between Piribebuy men.

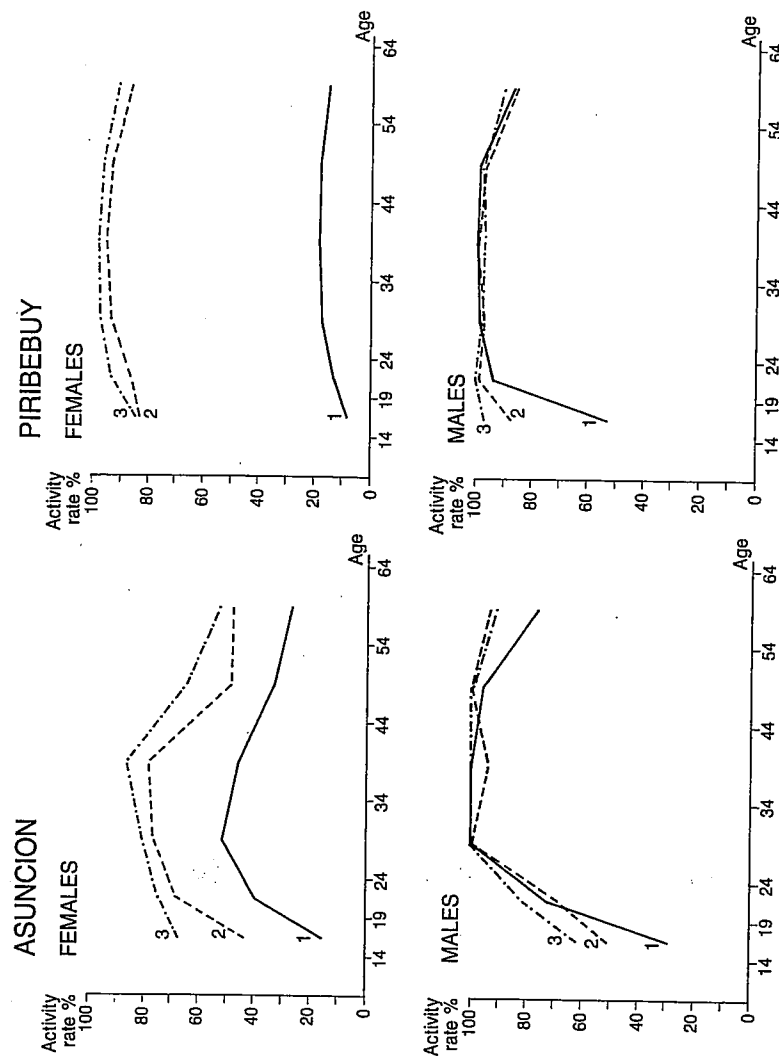
perceive and do not declare themselves to be workers but as economically inactive (mostly "housewives"), and who remain invisible in the usual census statistics, amounts to five-sixths in Piribebuy and to close to one-half of the female labor force in Asuncion. With a longer reference period, the CENEP-year survey also enumerates significantly more workers than the CENEP-week survey (except among Asuncion males), though less than was expected.

As a consequence of the greater recording of female workers by the CENEP procedure in the rural area, most women as well as most men (about 90 percent) appear to be supplying their labor to the economy. This result is consistent with what is known of poor small land-holding agricultural areas, where the family unit survives on the labor supply of all of its members, whether they are old, young, women or men. However, it openly contradicts most labor force statistics in Latin America, which overwhelmingly record a very low economic participation of rural women, much lower than among urban females (Elizaga & Mellon, 1971).

The Sensitivity of CENEP Questionnaire to Elicit Female and Male Labor Force Data

What are the reasons for the greater sensitivity of CENEP procedure, that is, of its appropriateness for eliciting labor force data? As we said before, the CENEP differs from the CENSAL procedure in two aspects: the questionnaire and the training of interviewers. We will show below that the greater sensitivity responds primarily to the questionnaire and secondarily to the training of interviewers.

Let us begin by examining the capacity of CENEP's questions to record the labor force. The focus is on the employed population, because unemployment is



Note: 1: CENSAL; 2: CENEP-week; 3: CENEP-year.

Figure 1. Asuncion and Piribebuy. Female and Male Economic Activity Profiles according to the CENSAL and CENEP Surveys

virtually nonexistent in the rural locality—as it is in any subsistence economy—and does not surpass 6 percent in the urban one. Data vary significantly by sex (see Table 2). In both localities, about 90 percent of the employed male labor force counted by CENEP-week is elicited by Q7 (“During . . . , did you do any work?”), and no more than 6 percent by Q8 and Q13. CENEP-year reproduces CENEP-week’s findings in Asuncion and Piribebuy. It should be recalled that Q8 reiterated the content of Q7, conveying to the interviewees the meaning of “work” through concrete activities chosen among those less visible as economic. Q13—the self-consumption module—made explicit, again through concrete examples, that certain activities whose products do not go to the market but are consumed within the household are also to be considered “work.”

These results make it plain that, as far as men are concerned, one single question phrased such as Q7 is adequate enough to register most of the labor force participation, either in the urban or in the rural locality. Indeed, if the workers registered by CENEP-week Q8 and Q13 are excluded, the male activity rates only decrease (not significantly) from 83.6 to 79.2 percent in the urban area and from 92.8 to 86.8 percent in the rural one. Similar figures are found for CENEP-year survey, as shown in Table 3.

However, Q7 proves quite inadequate when applied in the CENEP-week survey among women, especially in the rural locality, where it elicits only one-third of the employed labor force (see Table 2). In the urban locality it is more efficient, as nearly two-thirds are elicited by it. Most of the remaining employed

Table 2. Economically Active Population Recorded By Each Question of the CENEP Questionnaires, By Sex and Locality (In Percent)

Questions	Asuncion		Piribebuy	
	Women	Men	Women	Men
CENEP—Week	(144)	(153)	(502)	(500)
Employed	93.8	95.4	99.2	99.8
Q 7	62.9	90.4	32.8	93.6
Q 8	9.0	3.5	2.0	0.4
Q 9	6.7	4.1	0.0	0.0
Q 13	21.4	2.0	65.2	6.0
Unemployed (Q10 + Q11)	6.2	4.6	0.8	0.2
CENEP—Year	(180)	(160)	(518)	(561)
Employed	94.5	95.6	99.6	99.7
Q 7	70.6	94.1	35.0	92.3
Q 8	13.5	4.0	15.0	0.0
Q 13	15.9	1.9	50.0	7.7
Unemployed (Q10)	5.5	4.4	0.4	0.3

Note: All differences between the female and male activity figures for CENEP-week and CENEP-year, in both localities, are significant at the .05 level.

Table 3. Activity Rates According to the CENSAL and CENEP Surveys With and Without Workers Elicited By Q8 and Q13, By Sex and Locality

Activity Rates	Asuncion		Piribebuy	
	Women	Men	Women	Men
CENEP-Week				
Total (1)	59.0	83.6	87.6	92.8
Minus Q8 and Q13 (2)	42.2	79.2	29.1	86.8
CENSAL (3)	34.2	71.7	13.7	83.6
CENEP-Year				
Total (4)	69.2	86.6	91.2	95.6
Minus Q8 and Q13 (5)	50.0	81.6	32.2	88.2

Note: All differences between rates 1 and 2, 4 and 5 for females, obtained by CENEP-week and CENEP-year, in both localities, are statistically significant at the .05 level. Those for men are not statistically significant at the .05 level. The differences between rates 2 and 3 for both sexes in both localities (except for rural women) are not statistically significant at the .05 level.

women are elicited firstly by Q13, especially in Piribebuy, and secondly by Q8. The CENEP-year survey closely reproduces the CENEP-week findings. The relatively minor recording capacity of Q8 was totally unexpected; we had expected a much higher capacity and a much lower for Q7.³ The overwhelming capacity of Q13 among rural women went much beyond our expectations instead. For people unfamiliar with urban settings in developing societies, the relatively high percentage of women engaged in production for self-consumption in the capital city of Paraguay may be surprising. Indeed, the mixture of social areas is extremely high in Asuncion. It is not infrequent to find the modern house of a surgeon side by side with the precarious house of a water seller who grows vegetables or raises chickens for his own consumption in the backyard, only 10–15 minutes from downtown.

These results show plainly that, contrary to the situation of the men, one single item such as Q7 is not adequate to register most of the female labor, especially rural, but also urban. In the Paraguayan rural locality studied—and also in the urban locality—had it not been made explicit to women that self-consumption production is considered “work,” as Q13 did, the measurement of its labor force activity would have been quite deficient. This also would have occurred, though to a lesser degree, if the meaning of “work” through concrete examples had not been conveyed to them, as Q8 had.

As shown in Table 3, if the female workers elicited by Q8 and Q13 of CENEP-week questionnaire are excluded, the urban activity rates significantly decrease from 59.0 to 42.2 percent, and the rural rates from 87.6 to 29.1 percent. This decrease would cut down the differences with respect to the CENSAL rates to the point of their becoming statistically nonsignificant in the urban, although not in

the rural area. A similar trend is reproduced in the CENEP-year survey for the urban and rural rates.

What type of workers did not perceive themselves as being engaged in an activity that deserves to be qualified as “work,” and which were “rescued” as economically active by Q8 and Q13? First, they are mostly women, as we said before. In Table 4 some occupational characteristics of the females “rescued” by Q8 and Q13 are compared with those of the total of employed women enumerated by all CENEP questions. In Asuncion they are clearly “secondary” workers, most of whom have worked for a short time during the previous week, or part-time or less during the previous year, mainly at home, on their own-account basis or without pay, helping in a family enterprise. Full-time workers who have a formal relationship with the world of production as employers or employees in an establishment are more frequent among those elicited by Q7 and Q9. There are minor or no differences at all between the women brought in by Q8 and Q13 and by the rest of the questions in terms of these aspects in Piribebuy, where production for self-consumption predominates. The majority of them work full-time, within the family household, on their own-account basis, or as unpaid family workers, with few exceptions. Hence, on the basis of the information at hand, it is not possible to say why these women did not perceive and did not declare themselves as economically active. But what is absolutely clear is that most women engaged in production for self-consumption—even if working full-time—do not perceive themselves as workers, and that their visibility to labor statistics depends on a special effort, something that men do not need.

The activity rates of the CENSAL and the CENEP-week surveys include the effects of the type of questionnaire and those of interviewers' training. It is impossible to explain how much of the CENEP enumeration is due to the questionnaire and how much to the training with the available information. One reason is because a better questionnaire leads to a better application. There is some evidence, however, that both had effects, but that those of the questionnaire were greater.⁴ One piece of evidence is that the differences between the CENSAL and the CENEP-week rates excluding workers enumerated by Q8 and Q13 is substantially smaller than those with respect to the total CENEP-week rates, that is, including workers enumerated by Q8 and Q13 (see Table 3). This is true for women and men. Because both the CENEP-week rates were obtained with the same type of interviewers' training, it can be hypothesized that the effect of the latter is less than the effect of the questionnaire.

The greater enumerating capacity of the CENEP questionnaire can be attributed to several reasons. First, by displaying the response alternatives of the CENSAL item in a set of questions to be read (and answered) *one by one*, interviewers and interviewees are compelled to read them one at a time before proceeding to the next. In the CENSAL survey, however, many interviewers read the response alternatives all at once (as many data collectors in population censuses do, in spite of being instructed to do otherwise). In doing so, inter-

Table 4. Economically Active Female Population Elicited By Q8 and Q13 According to the CENEP Surveys and Occupational Characteristics, By Locality

Occupational Characteristics	Asuncion				Piribebuy			
	CENEP-week		CENEP-year		CENEP-week		CENEP-year	
	Total (135)	Q8 + Q13 (41)	Total (170)	Q8 + Q13 (50)	Total (497)	Q8 + Q13 (335)	Total (516)	Q8 + Q13 (329)
Time Worked								
Short-time	32.1	68.3*	12.4	20.0*	19.1	21.5	12.7	32.2*
Part-time	23.9	22.0*	19.4	34.0*	32.0	32.5	15.9	11.8*
Full-time	44.0	9.7*	68.2	46.0*	48.9	46.0	71.4	56.0*
Place of Work								
Establishment	24.4	0.0*	25.3	4.0*	2.6	0.0*	1.6	0.0
Employer's home	23.7	4.9*	24.7	0.0	2.6	0.3*	1.4	0.6
Street or route	11.1	2.4*	8.2	8.0*	3.6	0.3*	2.6	1.5
Own home	40.7	92.7*	41.8	88.0*	91.0	99.4*	94.6	97.9
Employment Status								
Employer + employee	44.4	0.0*	47.1	0.0*	4.4	0.0*	1.9	0.3*
Own-account + unpaid family	55.6	100.0*	52.9	100.0*	95.6	100.0*	98.1	99.7*

Notes: For CENEP-week: short-time = 1-19 hours; part-time = 20-34 hours; full-time = 35+ hours.
 For CENEP-year: short-time = less than six months; part-time = 6 months or more; full-time = twelve months.
 *denotes differences between the female enumerated by the total questionnaire and by Q8 plus Q13 that are statistically significant at the .05 level.

viewees learn about all the alternatives and are directed toward *choosing* answering either to have worked, or to have looked for a job, or to have been engaged in household chores, and so on. In this situation it is not surprising that many women engaged in some kind of economic activity, *in addition* to domestic chores, declare themselves "housewives" because they consider this role to be the main one in terms of social acceptability or because of the time devoted to it. The same happens with retired people or with students who also carried out some economic activity during the reference period, and who choose to define themselves as economically inactive, thus violating the "priority rule" of international recommendations according to which the condition of "active" has to have precedence over the condition of "inactive."

The Greater Sensitivity of the CENSAL Survey to Full-Time Workers and of CENEP-Week to Part-Time Workers

We did not set any working-time requirement for people to be considered active in any of the surveys, but we investigated the amount of time actually worked during the reference period by every employed person. Assuming that the time actually worked corresponds to minimum requirements, we calculated different activity (employment) rates. They allow the assessing of the degree of elasticity of the CENSAL and the CENEP-week procedures (both having set a weekly reference period) to varying time requirements (see Table 5).

What is worth highlighting is that the increment of the employment rates that results from diminishing the time requirement from full-time ("most of the

Table 5. Activity Rates for Different Working-Time Requirements According to the CENSAL and CENEP-Week Surveys, By Sex and Locality

Weekly Activity Rates	Asuncion		Piribebuy	
	Women	Men	Women	Men
CENSAL				
Full-time	23.9	56.1	9.7	59.2
Part-time	31.3	66.8	11.4	77.5
Short-time	33.5	67.7	12.7	79.0
Full-time vs. Short-time	40.2*	20.7*	30.9	33.4*
CENEP-Week				
Full-time	24.2	58.5	42.4	61.8
Part-time	36.5	67.8	70.2	85.7
Short-time	54.9	77.6	86.7	91.7
Full-time vs. Short-time	126.9*	32.6*	104.5*	48.4*

Notes: See note, Table 4.

*denotes differences that are statistically significant at the .05 level.

week" or "at least 35 hours") to short time ("at least one hour") is much lower for the CENSAL than for the CENEP-week survey and for men than for women. In fact, the CENEP rate for Asuncion women significantly increases 126.9 percent, whereas the CENSAL rate increases only 40.2 percent, a figure that barely reaches significance. There is a similar increment among the Piribebuy women in CENEP rate (104.5 percent), whereas the CENSAL rate shows only 30.9 percent increase, which does not reach statistical significance. The trends are reproduced among men, though much less intensely and with much higher rates than among women.

These findings show the greater sensitivity of the CENSAL survey to register full-time, weekly workers. They also show the greater proneness of male workers to work (or to report to have worked) on a full-time basis, whatever the procedure of data gathering. In other words, these findings prove that the census procedure is inadequate to register part-time labor, a mode that is much more frequent among women than among men.

The Identity of Female Workers Made Visible by the CENEP procedure

Is there any difference between the economically active population enumerated by CENEP-week and by the CENSAL survey, apart from sheer size? Who are the workers who do not perceive and do not declare themselves as such unless a special effort is made to detect them? The answers to these questions give some indication of the groups that need special attention in order to be more adequately registered.

In Asuncion, the capital city of Paraguay, the CENEP-week survey enumerates about three-quarters more female workers than the CENSAL procedure. Both surveys give portraits of the female labor force that do not differ significantly in terms of age, marital status, position in the household or educational level. They differ, however, in their modalities of insertion in the labor market. These clearly reveal which are the workers that are most invisible to the usual census statistics (see Table 6). CENEP enumerates more informal workers, self-employed or family aids than the CENSAL survey (55.6 versus 35.9 percent). As a consequence, CENEP detects more females working in their homes than the CENSAL survey, where owners and salaried women prevail, most of them working outside, in an establishment, and only a few inside their own homes. More female workers in the CENEP than in the CENSAL survey devote only a short time a week to working (one-third of the CENEP workers compared with only 7 percent of the CENSAL workers invest less than 19 hours a week), and less than one-half work full-time, a figure that rises to 71 percent among the CENSAL workers (see Table 6).

The differences between both pictures of the female labor force are only partially due to the (29) self-consumption producers rescued by Q13, all of

Table 6. Asuncion. Economically Active Population Enumerated by the CENSAL and CENEP-week Surveys According to Sociodemographic Characteristics By Sex (In Percent)

Sociodemographic characteristics	Women		Men	
	CENSAL	CENEP week	CENSAL	CENEP week
Age group	(93)	(144)	(160)	(153)
12-19	9.7	20.8	9.4	11.1
20-54	80.6	67.4	77.5	71.3
55+	9.7	11.8	13.1	17.6
Marital status	(93)	(144)	(160)	(153)
Without spouse	67.7	55.5	30.0	35.3
With spouse	32.3	44.5	70.0	64.7
Position in household	(79)	(126)	(157)	(151)
Head	20.3	9.5	61.1	62.3
Wife/husband	31.6	47.6	0.6	0.0
Daughter/son	34.2	30.2	27.4	28.5
Other	13.9	12.7	10.8	9.3
Educational level	(92)	(143)	(160)	(153)
Incomplete primary or less	21.8	30.8	18.1	20.2
Complete primary	31.5	35.0	23.8	32.7
Incomplete secondary or more	46.7	34.3	58.1	47.1
Occupational category	(92)	(135)*	(151)	(142)
Professional, technical workers	27.2	15.6	23.9	20.5
Business and sales	28.3	17.8	8.1	12.3
Service workers	35.9	33.3	6.5	6.8
Farm laborers	0.0	21.5	4.5	3.4
Nonfarm laborers	8.7	11.9	47.1	56.8
Employment status	(92)	(135)*	(151)	(142)
Employer + employee	64.1	44.4	63.6	62.7
Own-account + unpaid family	35.9	55.6	36.4	37.3
Place of work	(91)	(135)*	(150)	(139)*
Establishment	47.3	24.4	70.7	60.4
Employer's home	19.8	23.7	1.4	4.3
Street, route	10.9	11.1	14.6	27.4
Own home	22.0	40.7	13.3	7.9
Time worked	(91)	(135)	(151)*	(142)*
1-19 hours	6.6	32.1	1.3	12.0
20-34 hours	22.0	23.9	15.9	12.7
35+ hours	71.4	44.0	82.8	75.4

Note: * denotes differences between surveys' rates that are statistically significant at the .05 level.

Table 7. Piribebuy. Economically Active Population Enumerated by the CENSAL and CENEP-week Surveys According to Sociodemographic Characteristics By Sex (In Percent)

Sociodemographic characteristics	Women		Men	
	CENSAL	CENEP week	CENSAL	CENEP week
Age group	(95)	(502)*	(558)	(499)*
12-19	16.8	29.1	14.9	21.6
20-54	69.5	57.2	70.7	67.0
55+	13.7	13.7	14.4	11.4
Marital status	(95)	(502)*	(558)	(498)
Without spouse	64.3	46.6	44.5	44.6
With spouse	35.7	53.4	55.5	55.4
Position in household	(94)	(502)*	(557)	(498)
Head	25.5	9.6	57.0	58.6
Wife/husband	34.0	50.0	0.0	0.0
Daughter/son	36.2	35.1	38.2	38.4
Other	4.3	5.4	4.6	4.6
Educational level	(95)	(499)	(556)	(497)*
Incomplete primary or less	59.0	66.7	52.7	63.0
Complete primary	35.8	28.7	40.5	28.6
Incomplete secondary or more	5.3	4.6	6.8	8.5
Occupational category	(90)	(498)*	(528)	(499)
Business and sales	27.8	5.8	1.7	4.4
Service workers	7.8	4.6	0.2	0.6
Farm laborers	44.4	81.9	81.9	84.6
Nonfarm laborers	17.8	7.0	14.1	9.8
Other	2.2	0.6	2.1	0.6
Employment status	(90)	(498)*	(528)	(498)
Employer + employee	10.0	4.4	15.0	16.3
Own-account + unpaid family	90.0	95.6	85.0	83.7
Destination agricultural				
Production	(40)	(406)*	(402)	(422)
Mostly market	30.0	7.1	19.7	25.2
Mostly self consumption	70.0	92.9	80.3	74.8
Place of work	(90)	(498)*	(528)	(499)
Establishment	2.2	2.6	13.6	15.8
Employer's home	7.8	2.6	3.0	2.6
Street, route	13.3	3.6	6.6	4.4
Own home	76.6	91.0	76.7	77.2
Time worked	(88)	(497)*	(527)	(494)
1-19 hours	10.2	19.1	1.9	6.5
20-34 hours	13.6	32.0	23.1	26.1
35+ hours	76.1	48.9	75.0	67.4

Note: * denotes differences between surveys' rates that are statistically significant at the .05 level.

whom are agricultural laborers who contribute without pay to the household production, for only a short time a week. They are also only partially due to the few (12) workers rescued by Q8, most of whom work a short time a week, inside their homes, on their own basis or as unpaid family workers (see Table 4). Among the remaining workers brought in by the other CENEP-week questions (Q7 and Q9), it is also more frequent than among the CENSAL workers to find own-account, unpaid family workers, whose working place is other than an establishment. There is something built in the CENSAL procedure that makes it more sensitive to enumerate formal female workers; conversely, there is something in the CENEP procedure that makes it more sensitive to female workers with lower (cultural) probabilities of participating in the labor market and, when the occasion comes, to do it in the informal sector.

The female labor force of Piribebuy registered by the CENEP-week questionnaire is five times greater than the one registered by the CENSAL survey, mostly made up of the huge number of self-consumption producers rescued by Q13 (325 out of 497). The former differs significantly from the latter in most of the characteristics analyzed even more than in Asuncion. It is a younger population, where married wives of the head of the household are more frequent than in the CENSAL population. Very few are occupied outside the agricultural sector, whereas among the CENSAL labor force more than half are. Those women from the CENEP survey engaged in subsistence production are more than in the CENSAL survey (92.9 versus 70.0 percent). Although the majority works on a full-time basis, an important sector is on a part-time basis. There are no significant differences among them, however, regarding the extremely low educational level of the majority (see Table 7).

As in Asuncion, the self-consumption module contributes to enumerating producers that otherwise define themselves as "homemakers." The rest of the questions contribute toward enumerating agricultural workers that produce mainly for the market. Both sections of the CENEP-week questionnaire are more sensitive than the CENSAL one to enumerate women that devote part of their time or less to working (see Table 4).

These results make it plain that in an urban area as well as in a rural one, the usual population censuses are more sensitive to enumerate women with a greater propensity to work, who perceive themselves and are perceived as members of the labor force.

IV. SUMMARY AND CONCLUSIONS

In spite of the consensus that exists among experts that a great share of the female contribution to the economy remains invisible to labor statistics, therefore to planners, policymakers, researchers, and the society in general, there have been few systematic attempts to modify the situation.

This paper has been concerned with improving the counting of the female labor force in population censuses. It is based on the results of three highly controlled experimental surveys. The three were carried out on comparable samples of the female and male population of two areas. One is a rural locality based on subsistence economy, the other is the largest urban area of Paraguay, a country that ranks among the least developed of Latin America. One of the surveys reproduced the 1982 Paraguayan census (CENSAL), the other two, alternative procedures that may be used with some adaptations in future censuses (CENEP-week and CENEP-year).

The study consistently produced evidence that the usual Latin American censuses give a fairly valid portrait of the male labor force, but a quite invalid one of the female labor force.

As compared with CENEP-week, and using the same "official" conceptual definition of "economic activity," the CENSAL procedure underenumerated as much as five-sixths of the rural female workers—mostly self-consumption producers—and close to one-half of their urban counterparts. Only about one-tenth of the male workers, either urban or rural were victims of a similar censal invisibility. The CENSAL procedure proved to be more sensitive to full-time workers, who are more frequent among men, whereas the CENEP procedure was more sensitive to part-time workers, who are more frequent among women.

The urban female workers recorded by CENEP differ from those recorded by the CENSAL procedure. The former enumerates more frequently "secondary workers," engaged in informal activities as self-employed or unpaid family aids, who work at home part-time or less, that is, labor force members with a low visibility. In the rural area, the CENEP female workers are younger than the CENSAL ones and are more frequently wives of the household head. They work no less than part-time and most of them work full-time, producing for their own consumption. The similarity between the male labor force recorded by the CENSAL and the CENEP procedures shows the adequacy of the usual population censuses to register the male labor force. It provides evidence that, contrary to women, men tend to perceive themselves, and consequently to declare themselves, as workers, whatever the activity and the amount of time they devote to it.

The evidence is conclusive regarding the need to reexamine the current concepts and methods to improve the measurement of the female participation in economic activity. The international organizations have taken some steps in this direction. Indeed, the new recommendations issued by the ILO-UN for the coming 1990 round of censuses, if put into practice, will have a marked effect on the measurement of the female labor force, perhaps much more so than on the male population. In particular, we single out the explicit inclusion of self-consumption producers within the labor force, the elimination of a minimum working-time criterion, including unpaid family workers, and the acceptance that only one-hour's work qualified as economically active. Nevertheless, attempts to

translate the concepts into reliable measurement procedures have been absent so far.

On the basis of the study conducted in Paraguay, it seems highly advisable to drop the use of a single census item to investigate the activity condition of the population and to incorporate, instead, a set of questions to be read one at a time, thus eliminating the possibility of a choice among alternatives. It also seems advisable to transmit the meaning of "work" by means of concrete examples chosen for their relevance in each society, and to stress that self-consumption production is also "work." While lowering the working-time requirement to a minimum of one-hour, it seems advisable to collect information on the actual time worked during the reference period. This information allows different measures of the labor force for different requirements to be obtained.

The empirical evidence is here. It points out the urgency with which this task must be faced. If not done, the coming population censuses will keep producing a most inadequate view of women's contribution to the economy, and therefore of the total labor force.

APPENDIX

The size of the samples was determined as a function of the average number of members per household, the index of masculinity (both figures taken from the 1982 population census), and the female activity rates (from the 1982 census for the CENSAL survey and from the 1982 household survey for the CENEP surveys), plus the requirements of the analysis (a minimum average of 20 household units per cell for up to 10-cell tables). Evidence of the comparability of the three samples of each locality in terms of its age-structure by sex is contained in Table A.

Table A. Comparison By Age-Structure of the Active-Age Population of the CENSAL and CENEP Surveys, By Sex and Locality
(In Percent)

Age groups	Women			Men		
	CENSAL	CENEP week	CENEP year	CENSAL	CENEP week	CENEP year
	Asuncion					
12-25	35.3	41.4	38.1	37.6	32.2	37.3
25-34	23.2	20.5	19.2	20.2	23.5	22.2
35-54	24.6	23.4	27.3	25.6	27.3	27.6
55+	16.9	14.8	15.4	16.6	16.9	13.0
(N = 1,367)	(272)	(244)	(260)	(223)	(183)	(185)

(continued)

Table A. (Continued)

Age groups	Women			Men		
	CENSAL	CENEP week	CENEP year	CENSAL	CENEP week	CENEP year
	Piribeby					
12-24	39.4	40.3	35.0	38.0	36.3	39.9
25-34	18.3	17.1	17.3	19.7	16.9	17.9
35-54	27.1	27.4	29.4	26.3	32.7	26.4
55+	15.3	15.2	18.3	16.1	14.1	15.8
(N = 3,627)	(694)	(573)	(568)	(666)	(539)	(587)

Note: The twelve comparisons, CENSAL vs. CENEP-week rates, CENSAL vs. CENEP-year rates, and CENEP-week vs. CENEP-year rates, obtained for women and men in Asuncion and Piribeby, are not statistically significant at the .05 level.

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NOTES

1. A clear statement of the concepts and limits of economic activity adopted by the 1982 ILO resolution and its relation with the national accounts criteria is contained in Rao and Mehran (1984).
2. The results of this test are contained in Wainerman and Moreno (1986).
3. It could be hypothesized that the result was a spurious consequence of some interviewees having learned the content of Q8 (either because they have attended to, or have answered on behalf of other household members that had gone through that question). A careful analysis of CENEP-week data for Asuncion showed that, out of the 85 women classified as active on the basis of Q7, 44 have been interviewed after another household member had gone through Q8. (This analysis was made possible because the order of interviewing of the household's members was known.) Of those 44 women that had chances of being acquainted with Q8, most were adults who had worked every day, 20 or more hours a week, half of them as salaried domestic servants living in their employer's home, hence visible as members of the labor force. In other words, they had a high probability of perceiving themselves as workers, hence, a low probability of responding not having worked to Q7. Only four women out of the 44 had the opposite characteristics. Two were street vendors, one was seamstress and one was a washerwoman who had worked only a few hours the previous week, down the street or at home. These were the only ones who could have answered affirmatively to Q7 because of having learned the meaning of "work." On the basis of this analysis, the hypothesis of learning was rejected and with it, the spuriousness of the results.

4. The research included two other surveys. One used the CENSAL training and the CENEP questionnaire, the other the CENEP training and the CENSAL questionnaire. They were included with the aim of testing the effect of the questionnaire (the training) while keeping the training (questionnaire) under control. Much too late we realized that the personality of the interviewers was a relevant factor, confounded with the type of training. The relatively low number of interviewees that participated in each survey did not allow to randomize this factor; therefore, we failed to assess the separate effect of the questionnaire and the training.

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