

NOTE ON CONCEPTS AND TECHNIQUES FOR ESTIMATING THE CONTRIBUTION OF WOMEN WORKING IN THE INFORMAL SECTOR

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Estimates of the contribution of women to employment and GDP are indispensable for economic policy decisions and planning. The contribution of women working in the informal sector has been on the agenda of national and international organisations for over twenty years, but progress in measuring it has been slow. While women's contribution to employment is today acknowledged and its measurement is improving, little is known about the income they earn in this sector and how much it contributes to national production.

The main sources for the labour component of women working in the informal sector are employment statistics classified according to the International Classification of Status in Employment (ICSE) and by sex. The ICSE identifies persons working in informal household enterprises, but those working in enterprises of informal employers are not recorded separately.

The contribution to product and income is an accounting item and as such must be calculated observing established accounting rules. In order to estimate its value, data are needed on employment, remuneration, and also business records, which are the most elusive. In 1993 with the ICLS definition of the informal sector and the revision in the SNA, employment, production and income data are compatible and the informal sector and its sub-divisions can be integrated into the household sector and the global accounting system.

Collection of data, especially economic data, on the informal sector is an arduous task (in the past the sector has been considered immeasurable) (*Hussmanns*), and still more so when classification by gender is required. Moreover, circumstances are not exactly the same in all countries (Charmes; Urdaneta) and hence, the procedures outlined in this paper serve as suggestions to be adapted to the particular conditions of a country. This paper reviews first, the definition of the informal sector and its implications for data collection; second, the SNA rules for recording production and income, as applicable to the informal sector and women's contribution; and third, new surveys in Peru and Columbia on the informal sector and women's role in it which provide an improved basis on which to estimate women's role and contribution to the economy.

1.1 Definition

The Fifteenth International Conference of Labour Statisticians defines the informal sector as "a group of production units which, according to the definitions and classifications provided in the United Nations System of National Accounts (Rev.4) form

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part of the household sector as household enterprises or, unincorporated enterprises owned by households”. (*ILO para.6*)

The relevant part of this definition for the present purpose, particularly for the collection of data, is the identification of the informal production units as household enterprises, also called unincorporated enterprises owned by households. For data collection this presents a problem. Most women do not conceive of their work as taking place in an “enterprise” which in their reasoning is something big and important, quite different from what they are doing. It will be up to the survey taker to dispel such doubts.

Two features distinguish household enterprises from other enterprises:

- a) the legal organization and
- b) the keeping of accounts.

Legal status distinguishes them from corporations and the existence of bookkeeping from quasi-corporations. One single question will usually be sufficient to elucidate legal status, but existence of accounts usually will require more detailed questioning. The existence of adequate accounting records distinguishes on one hand, the household enterprise from a quasi-corporation and on the other allows the separation of financial transactions of the household enterprise from those of the household as a consumer. However, such pre-existing records usually are not available in the case of informal sector units, and the information must be obtained by questioning. This meets with difficulties as the fixed and other assets of household enterprises do not belong to the production units, but to their owners and in these circumstances a clear distinction is hard to make. Therefore, the ILO resolution recommends that such expenditures should at least be allocated approximately to one and the other use.

It is noteworthy that the Urban Informal Sector Survey of the Philippines (*Philippines*) poses questions regarding the accounting records of the productive unit, and specifically if it keeps records on orders, sales, purchases and cash flows.

Household enterprises can be of two different kinds:

- a) Informal own-account enterprises and
- b) Enterprises of informal employers.

Informal own-account enterprises are those owned and operated by own-account workers; they may employ contributing family workers and/or employees on an occasional basis.

Enterprises of informal employers are those that employ one or more employees on a continuous basis. The maximum number of employees may vary between countries and industrial branches, but are generally between four and ten employees. For both kinds of enterprises the ILO definition leaves open the possibility to include only those that are not registered under specific forms of national registration. According to national studies, informal own-account enterprises represent by far the major part of all household enterprises.

Household enterprises are defined irrespective of the extent of fixed capital assets used, the location where the work is carried out, or whether the operation of the enterprise is perennial, seasonal or casual.

In the case of women working both in and outside the informal sector, the question arises whether to measure their contribution exclusively in the informal sector or their contribution in and outside the sector. As far as employment is concerned, the Resolution recommends classifying those employed only in the informal sector separately from those

working in both sectors, and, if possible, record which of the two is the main job. But for estimating the contribution of women in the informal sector in terms of value, only the value added specifically in that sector should be considered.

Household enterprises engaged in “the production of goods and services for own final consumption or own fixed capital formation as defined by the United Nations System of National Accounts (Rev.4) should be excluded from the scope of the informal sector for the purpose of statistics of employment in the informal sector.” (*ILO, Para. 14*). This implies that the production of goods for own consumption such as cloth, clothing, foodstuffs other than meals for immediate consumption (listing those of special interest to women) even though included by SNA in the national product, is not part of the informal sector. Nevertheless, in the case of women working for the market who keep some of the products for their own use, or that of their families, the amount used for own consumption should be included in the output of their enterprises (*United Nations, para. 4.146*)

The inclusion of domestic workers is left by the Resolution to the decision of national authorities, depending upon national circumstances and the intended uses of statistics. In order to enhance international comparability it recommends identifying them as a special subcategory.

1.2 Collection of data

The Resolution makes the following recommendations on data collection programmes and methods: The collection of data on the informal sector should be integrated into the regular national statistical system and should contemplate current monitoring (once a year) and in-depth inquiries (every five years), covering not only employment (numbers and characteristics of those employed), but also data on production and income. Concerning procedures for estimating the contribution of women working in the informal sector, what is needed is a cross-classification of data on production and income by gender.

Data collection should be based on household surveys, using households as reporting units and household members as observation units, while for in-depth studies, establishment surveys or mixed household and enterprise surveys are preferred. In these latter cases it is the informal sector unit that is used for observation and reporting.

Finally, the Resolution states that “other measurement methods can also be considered, such as methods of indirect macroeconomic estimation or the comparative analysis of data from different sources”.

The two-stage approach recommended by ILO represents an efficient use of statistical resources. At the same time, if in-depth surveys were used as a benchmark for frequent surveys, attention must be given to the rate of change of the variables in question, which, for household enterprises tends to be unusually high.

The contribution to GDP can be measured either by the output approach or by the income approach. The output approach works with the value of outputs and material inputs. The income approach refers to the incomes paid out to employees, the operating surplus or mixed incomes. While these approaches differ, they should lead to

approximately identical results. The SNA production account records the transactions related to producing goods and services; it defines gross value added as the value of output less the value of intermediate consumption. In SNA terms, intermediate consumption refers to all goods and services used during the production process. It is “a measure of the contribution to GDP made by an individual producer, industry or sector. Gross value added is the source from which the primary incomes of the System are generated.” (*United Nations, para. 1.6*)

What is needed is information on the value of output and on intermediate consumption, and, in the case of informal employers also on compensation of employees. Output and intermediate consumption relate directly to the production unit, and hence to the own-account worker or to the employer whose sex should appear in the questionnaire. The amount paid to employees appears usually without a distinction by sex, making it impossible to specify the amount paid to women. This must be taken into account in questionnaires design.

A question arises with respect to unpaid family workers. They do not receive pay but contribute to the output of the enterprise. If the worker and the owner of the enterprise are both women, the mixed income generated by the enterprise reflects correctly the contribution of women. But if not, the contribution of female workers in a male-headed enterprise must be calculated separately and added to the contribution of women and in the case of male workers in an enterprise headed by a woman, their contribution must be deducted from the mixed income of the enterprise. As no payments are taking place, the contribution can be estimated only approximately using time worked and wages paid in the market.

SNA distinguishes between gross output and net output and gross value added and net value added. The difference in both instances is the consumption of fixed capital. The gross concept is generally accepted in national aggregates, and it is advisable to maintain it in the estimates of the contribution of women working in the informal sector. However, as far as welfare is concerned, it makes a difference in the case of household enterprises. As they usually do not keep books and hence are not aware that their income is gross income, they overestimate their real income in the amount of wear and tear of the equipment used.

The production approach has an advantage over the income approach; in particular countries are more likely to have production than income data because national accounts are elaborated from production data. However, many developing countries do not have detailed production data and data requirements can often not be met. Questions on income are seemingly easier to answer because the meaning is familiar to everyone. However, it should be kept in mind that the concept of income for measuring the contribution of a person or a group of persons to GDP is not necessarily identical to the popular notion of income, which might exclude income in kind or, on the other hand, include certain transfers. One single question on income as it appears quite often in questionnaires is insufficient.

Two different techniques for estimating the contribution of women working in the informal sector are presented. The Venezuela example has been based on sources available in the Statistical Office of Venezuela. The second technique was developed by the South-American Multidisciplinary Technical Team of the International Labour Office

to estimate the contribution of GDP of the informal sector as a whole (*Castiglia*). It is extended to the part contributed by women, based on data sources from Costa Rica.

The procedure applied in Venezuela can be disaggregated into several steps.

1. Inventory of available data.

There are several potential sources for estimating the economic contribution of women working in the informal sector: i) the Population and Housing Census, ii) the Sample Household Survey, iii) the Family Budget Survey, iv) specific *ad hoc* surveys related to the informal sector, v) administrative records, vi) the national estimation of wages and salaries paid by kind of activity.

The Population and Housing Census of 1990 is a census de jure. The variables registered in the census were distributed between two types of questionnaires; a basic one, addressed to the whole population and an amplified questionnaire covering a specific sample of the population. The basic questionnaire contained a question on the situation within the labour force for all persons over age 12 and the amplified questionnaire, in addition to the above, recorded occupation, type of economic activity, size of the enterprise the person was working in, status in employment, income from work and other sources of income. It also includes a question concerning the informal sector. The informal sector is defined as “That part of economic activity ... which comprises persons employed as domestic service, non-professional own-account workers, as well as the employers, employees, workers and family workers who work in enterprises of less than five persons.”

The sample household survey has been carried out twice a year since 1967. It covers the entire population with the exception of the population living in collective households. The sampling frame is the Register of Structures and the cartography of the Population and Housing Census. Census data on population by sex and age group are extrapolated to the central point of each semester. The survey uses probability sampling in three stages. The questions on economic status are prevalent, because its main aim is to measure employment and its characteristics; one of which is the income of workers. It produces data at national level and shows classifications by gender.

The family budget survey is much less frequent, with national level data available for 1988 and 1997. This survey includes questions on economic status as well as on income and family expenditures.

The specific surveys related to the informal sector are small, circumscribed to certain localities and branch specific.

Administrative records include Social Security data, information from the income tax and municipal records.

The national estimate of wages and salaries paid by kind of activity is prepared yearly by the Central Bank of Venezuela.

2. Use and adjustment of the various sources.

The Population and Housing Census is indispensable as the framework for sample surveys. For the domain of study under consideration, there are only a few questions on economic matters and these are usually under-reported. The census is carried out every ten years and there is a considerable delay in publishing results.

The Sample Household Survey, available for a long series of years, includes several questions on economic status, characteristic of employment, size of income from work as well as questions on demographic and social characteristics. The results are available very soon after the end of the semester and provide full information on the changes in employment conditions. It is an excellent source for the present purpose. However, it does not furnish information on the value of output and intermediate consumption of the informal units so that for the estimate of the contribution of women in the informal sector, one has to work with the data on income contained in the survey. While for some users such data are satisfactory, for the given purpose, response errors tend to be high. Hence it was decided to use the Sample Household Survey as the main source for the estimate, but to adjust the survey figures on income by information from other sources.

Such an additional source is the Family Budget Survey. It has more or less the same questions on economic activity and characteristics of employment, as well as on income of the informal units. However the information obtained through this survey is considered more reliable because interviewers and supervisors dedicate more time to the interviews and the correction of non-sampling errors. In addition it allows comparison of the data on income with those on expenditures.

Specific surveys on the informal sector carried out in Venezuela are limited as to their coverage in space and activities. They mainly aim to determine the number and certain social characteristics of street vendors who perform their activity in specified places.

Social security records and records of income tax were discarded as a source of information because neither covered the universe of the present domain of study. However, in certain cases, information from municipal records was used to check data from the Sample Household Survey.

As part of the national accounts, the Central Bank of Venezuela publishes each year a table on wages and salaries by industrial origin. This information is used in the estimate of women's contribution to adjust the figures obtained from household surveys.

3. Collating definitions and procedures.

The definition of the informal sector used by the Statistical Office of Venezuela (OCEI) includes workers in urban and rural areas and distinguishes between the following categories (the percentages indicate the distribution of women employed by category):

- domestic servants living in employer's household (those who live in their own home are considered own account workers), (14.3 per cent)
- own account workers, (64.2 per cent)
- employers in enterprises with less than 5 workers, (2.8 per cent)
- employees in enterprises with less than 5 workers, (15.9 per cent)
- unpaid family workers. (2.8 per cent)

As the number and sex of these workers classified by categories indicated above, are given in the Sample Household Survey, the estimation procedure can calculate value added by women in the informal sector.

4. Calculation of value added.

Because neither the value of output nor the intermediate consumption of the informal unit is known, the estimate of value added needs to be built on information regarding income. Specifically, the net income declared in the Sample Household Survey by female own account workers and female employers plus the income of their female employees is considered equal to the value added of the corresponding enterprises. The contribution of unpaid family workers is part of the income of the unit in which they work.

5. Adjustment of declared income.

Due to the extended under-reporting usually observed in declarations of income, the figures thus obtained are adjusted. The adjustment is necessary to bring the figures of the informal sector in line with the national accounts aggregates. The adjustment is made using the using the national accounts estimate of wages and salaries by kind of economic activity. For this, the informal sector figures are classified by kind of economic activity and for each separate item the Statistical Office prepares a coefficient of underestimation. These coefficients are then applied to the data of income of workers by sex and kind of economic activity obtained from the Household Survey. This adjustment increases the percentage of the informal sector within total income from work (remuneration of employees and mixed income) from 29.4 per cent to 33.6 per cent.

The female participation in the informal labour force is 34 per cent, while their share in the income generated in the total informal sector is 23 per cent. This difference reflects the inequality in income earned by women. This may be due to the fact that women undertake the lowest paid services and petty trade. It must be remembered that usually the income perceived by these women means not only their own survival but of the population dependent on them; most of them live in poverty and the rate of dependency in this group is higher than the average. The break down by activities is given in the table below:

Participation of women in the income generated by informal sector 1997

All informal sector	23 per cent
Agriculture	2 per cent
Non-agriculture	26 per cent
Oil and mining	9 per cent
Manufacture	26 per cent
Energy	15 per cent
Construction	1 per cent
Trade	33 per cent

Transport and Communication	3 per cent
Financial enterprises, real estate insurance & services to enterprises	24 per cent
Communal, personal & social services	36 per cent

Weaknesses of the procedure.

The procedure described has several weaknesses. Among them the fact that it does not use values of outputs and inputs, which usually provide a better approximation to the real value of the contribution to GDP. Another shortcoming is that it fails to take account of the possibility that male unpaid family members may be working in female-headed productive units and vice-versa. However, the percentage of persons in that category is relatively small and the two situations may compensate each other.

In the case of Costa Rica (a similar procedure was also applied for Panama) the estimate refers exclusively to the urban informal sector without distinction of sex. The technique used with the Venezuela example assumed that income created in the sector is equivalent to its product. This technique uses the distribution of the economically active non-agricultural population between the informal and the modern (formal) sectors; the percentage of unemployed; the ratio between average income in the informal sector and average salary in the modern sector. With these variables this procedure approximates the participation of the urban informal sector in the non-agricultural GDP. Then it refines the result by adding in depreciation, indirect taxes paid by the sector as well as subsidies received by producers and their families. This increases the participation of the informal sector from 11 to almost 14 per cent. A more detailed description of the method is given in Castiglia et al. The next step for the present purpose is to derive from the total contribution of the informal sector that part which is due to the work of women. Given the framework of the procedure just mentioned, two main calculations are needed: a) the fraction of women workers within total employment in the urban informal sector and b) the ratio between women's and men's average income in the informal sector. This information can be extracted from most Household Sample Surveys.

III. New developments in data on the informal sector in Latin America

Procedures based on specific surveys

Special inquiries are now available which are designed specifically for the collection of information on the informal sector. Modules concerning the informal sector have been attached to household surveys, or specific questions included in economic censuses or a combined two-stage household – enterprise survey. These new inquiries produce substantially improved data on the economic activities of women in the informal sector.

Since 1991 Peru has had an Inter-institutional Statistical Commission for the Informal Sector (CIESI), including public and private institutions, to propose policies for the elaboration and distribution of statistics on the informal sector. The 1993 Population and Housing Census contained questions on informal activities of persons and in the section on housing, questions on whether part of the living quarters were used for economic activities producing income. The III National Economic Census created directories of productive units subdivided by geographical areas, the amount of gross value of production and number of employees. Finally, the National Multipurpose Inquiry included a special module on establishments of 1 to 10 workers which inquired about the basic characteristics of the enterprise, volume of production, value of output and costs of inputs, credit and savings and labour force. The survey produces data on the distribution of the informal enterprises by kind of activity, asks questions on licences and permits, accounting records, location of their activities and asks detailed questions on the characteristics of the personnel working in the establishment. Questions on sex appear exclusively in the last part of the questionnaire concerned with the labour force. For each employed person, including the proprietor, the questionnaire inquires about: sex, occupation, age, educational level, status in employment, hours worked during last week, type of remuneration and amount earned.

The figures for Peru confirm the concentration of women in certain activities, although in the informal sector as a whole the proportion of men employed is higher (58 per cent). In food related activities, 76 are women, in trade 53 per cent per cent are women and in other services women represent 52 per cent. (*Chávez*)

Various sources and techniques are used in Colombia for the measurement of the informal sector in terms of its role in employment and its significance for production and income. The procedures are based on direct inquiries: the Multi-sector Economic Census at the national level, a special “informality module” included every two years in the National Household Survey and an ILO sponsored in-depth “Mixed Survey of the Informal Sector”. The Economic Census measured the aggregate value of informal activities and its relative weight in national production. The informality module includes questions on size, time worked, location (at home, other living quarters, cubicle or kiosk, vehicle, door-to-door, outdoors, fixed location), affiliation to Social Security. The informal sector is sub-classified by degree of informality, type of personnel employed, kind of proprietorship, size of the enterprise measured by the number of persons employed (up to 10 in manufacturing and construction and not more than 5 in other activities). The operational definition of informal employment comprises self-employed workers, (excluding independent professionals and technicians), paid workers and employers in companies with less than 10 workers, and domestic service with or without pay.

For Colombia, the informality module produced the following figures: for 1996, informal employment was more than half (53 per cent) of total employment in ten main cities and metropolitan areas. In 1984 it was somewhat high 58 per cent (*Galindo*)

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