

Estimating the Number and Economic Contribution of Home-based Garment Producers in Ahmedabad, India

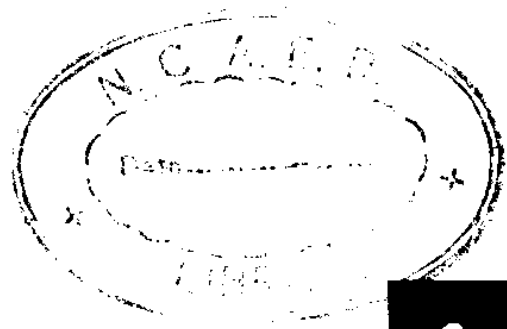
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ABSTRACT

Home-based producers are some of the most invisible workers in the unorganised sector. In many industries, including garment making, they comprise a sizeable proportion of the workforce. Because these producers work within the home, often on activities closely related to household production for consumption, they are easily missed in labour force estimates. Added to this problem is the fact that many home-based producers are women and women have traditionally been an undercounted group within labour force statistics. The paper aims to make visible the number and contribution of male and female home-based garment producers in Ahmedabad, illustrating any deficiencies in official statistics. It also highlights the aggregate contribution made as well as differences by gender and recommends ways to improve counts of home-based producers and strategies to increase the contribution of female home-based garment producers in Ahmedabad.

JEL Classification

H31, J21

Keywords

Unorganised Sector, Household, Labour, Employment,
Garment Sector

1. INTRODUCTION

Home-based producers are some of the most invisible workers in the unorganised sector. In many industries, including garment making, they comprise a sizeable proportion of the workforce. In order to document this as well as to make visible the contribution of home-based producers, proper estimates of their numbers and output are necessary.

Because these producers work within their homes, often on activities closely related to household production for consumption, they are easily missed in labour force estimates. Added to this problem is the fact that many home-based producers are women and women have traditionally been an under-counted group within labour force statistics (Anker, 1983; Anker, et al., 1988; Dixon-Mueller and Anker, 1988). Survey interviewers and male household representatives do not tend to recognise women as workers and socialisation processes often leave women not perceiving themselves as workers.

The purpose of this paper is to make visible the number and contribution of male and female home-based garment producers in Ahmedabad, illustrating any deficiencies in official statistics on home-based industries. This will be done for counts of home-based producers by comparing estimates derived from a micro study of home-based garment producers to the 1991 Census of India counts of those in all household industries, plus marginal workers.¹ While estimating the number of producers in a sector is important in making them visible, estimating their contribution to the economy is another means of gaining them access to the resources they require to improve their livelihoods. This paper will estimate the value added contribution made by both male and female home-based garment producers, highlighting the aggregate contribution made as well as differences by gender. These estimates will be compared to those calculated on the basis of the data collected in 1994-95 by the National Sample Survey Organisation (NSSO) on employment and value added per worker in the unorganised garment sector of urban Ahmedabad. The paper concludes with recommendations to improve counts of home-based producers and strategies to increase the contribution of female home-based garment producers in Ahmedabad.

¹ This study is part of a dissertation research project by the author entitled "Gender Differentials in Microenterprise Success among Home-based Garment Makers in Ahmedabad." The project was supported by a Fulbright-NCAER grant and by the Ford Foundation, New Delhi.

2. STUDY METHODOLOGY

The estimates developed in this paper were calculated based on the results of a study "Microenterprise Success of Home-based Garment Makers" in 19 of 43 wards in Ahmedabad city, plus additional enumerations done in the city's remaining 24 wards. For the study, garment makers were defined as any person stitching a whole piece of clothing or stitching a part of a garment as long as that part was central to its wearability. Thus, finishing work such as buttonholes and hemming was included, while work such as embroidery, piping and mirrorwork was excluded. A home-based producer was any individual working within the confines of his or her home, either as a dependent worker or as an own account worker or a mix of both.

The sampling design used for this study was a one stage stratified cluster sample, conducted separately for men and women. The Primary Sampling Units (PSUs) were geographic areas defined as groups of census blocks, where each with the groups composed of approximately 350 households, generally two to four blocks. The strata were defined by expected level of concentration of garment makers, and were labeled 'very high', 'high' and 'standard'. Information about concentration was obtained from the Self-employed Women's Association and Gujarat Garment Manufacturers Association, at ward levels. Thus, areas were created within ward boundaries and the areas were stratified based on the concentration level of the ward in which they were located. The classification of wards by concentration and inclusion and exclusion of wards from the study are the weakest elements of the above sampling strategy. They were based on subjective information versus secondary data and as the counts in the 24 excluded wards will show, some of these wards also had concentrations of garment producers.

Areas were formed within the ward boundaries in the following manner. Population data were available from the 1991 census at the block level. Based on population data from the Ahmedabad Municipal Corporation (AMC) for 1971, 1981 and 1991, an estimated population increase of 1.5 per cent was used to adjust the 1991 block level population figures to 1998 levels. Based on 1991 ward level data on population and number of households within a ward, the average household size by ward was calculated. This average household size by ward was applied to the

adjusted block population figures for the corresponding wards in order to estimate the number of households per block. The number of households per block were cumulated within wards and divided by 350 to determine area groupings. An approximate area size of 350 households was selected since it was expected to be a manageable size for enumeration purposes. The total number of areas created, for men and women by strata, is given in Table 1. Note that for the high and standard strata the total number of areas differs by gender. This is because two wards (Odhav and Danilimda) were categorised as high concentration for males and standard concentration for females.

Table 1
Number of Areas by Strata, Male and Female Samples
 (per cents are per cent of total areas)

Strata	Women	Men
Very high	17 (2 %)	17 (2 %)
High	580 (66 %)	708 (81 %)
Standard	280 (32 %)	152 (17 %)

The next step in the study's sampling process involved determining the number of areas within each stratum to be randomly selected. Selected areas then would be enumerated door-to-door in search of home-based garment makers of the appropriate gender, with all those located in the enumeration included within the sample. It was decided to over select from the very high stratum and under select from the standard stratum in order to improve the chances of obtaining the desired sample size of 850 respondents. As a precaution, multiple samples were selected, that is a core and three supplementary samples each for males and females. This provision was made for situations when the desired sample size could not be obtained in the core sample. The supplementary samples could then be used as needed. The number of areas randomly selected without replacement by strata and sample are given in Table 2. Random selection was done using a computer generated random numbers program in SPSS.

Table 2
Number of Areas Selected for the Micro Study by
Strata and Sample

Stratum sample	Male and per cent of total areas, by sample		Female and per cent of total areas, by sample	
Vh _c	4	(11.4 %)	4	(11.1 %)
Vh ₁	1	(12.5 %)	1	(12.5 %)
Vh ₂	1	(12.5 %)	1	(12.5 %)
Vh ₃	1	(12.5 %)	1	(12.5 %)
H _c	28	(80.0 %)	29	(80.6 %)
H ₁	6	(75.0 %)	6	(75.0 %)
H ₂	6	(75.0 %)	6	(75.0 %)
H ₃	6	(75.0 %)	6	(75.0 %)
S _c	3	(8.6 %)	3	(8.3 %)
S ₁	1	(12.5 %)	1	(12.5 %)
S ₂	1	(12.5 %)	1	(12.5 %)
S ₃	1	(12.5 %)	1	(12.5 %)
Total areas core		35		36
Total areas supp. 1		8		8
Total areas supp. 2		8		8
Total areas supp. 3		8		8

Abbreviations: Vh = very high stratum; H = high stratum; S = standard stratum.

Subscripts: c = core sample; 1 = supplemental sample 1; 2 = supplemental sample 2; 3 = supplemental sample 3.

After the areas were randomly selected, a process done independently for the male and female samples, the census block maps representing each selected area were obtained from the Population Census Office. Census workers drew the maps during the 1991 house listing. Field staff physically located the census blocks within the city and did a quick count to determine which blocks actually had home-based garment makers as residents. This involved speaking with key informants, such as shopkeepers and residents within the selected areas. Those areas determined of not having any home-based garment makers were not enumerated in detail. The balance were enumerated, with field staff going door to door asking a series of questions regarding whether anyone in the household stitches garments, whether they do this work in the home, that person's gender and if anyone helps them. Care was taken to ensure that those working on separate work orders within the same household were listed

as different respondents. All home-based garment makers located through this process were included in the sample and the interviewers returned to administer the survey.

Based on the early quick counts of home-based garment makers within the selected areas, it was determined that only the core sample would be enumerated for the female sample, while all four samples (core and three supplemental) would be enumerated for the male sample. This strategy resulted in a total sample size of 871 (excluding non-responses), comprising 536 females and 335 males. Note that for the objectives of this paper non-respondents were included in estimating the population of home-based garment producers in the 19 ward study area.

In order to estimate the number of garment producers in the whole city, further counts were done in two areas in each of the non-study wards (24 total wards, 48 areas). Areas for the second enumeration were selected in the same manner described above, adjusting the block level 1991 population to 1998 levels, dividing by ward level household size and cumulating the number of households per block so areas of approximately 350 households could be created. Two areas within each ward were randomly selected, block maps were requested and field staff enumerated these blocks in search of both male and female home-based garment makers.

The enumeration results for the selected areas from the micro study and from the supplementary areas from the non-study wards were then used to estimate the number of home-based garment makers, by gender, in the entire city. This was done for the areas from the study by inflating the enumerations in each sampling area by the inverse of the area's selection probability, that is by the inverse of the number of areas selected by stratum over the total number of areas in that stratum. The inverse of the sampling fraction for each non-study area also was used to inflate these counts and these numbers were summed with those from the 19 wards included in the larger study to arrive at the estimated number of home-based garment producers in the city of Ahmedabad. The inflation factors and estimates, for the 19 wards by stratum and for a sample of three of the 24 wards not included in the micro study are given in Table 3 for males and Table 4 for females. The total estimated number of home-based garment producers in Ahmedabad is given in Section 4.1, where they are compared to counts by the 1991 Census of India in Ahmedabad of all those in household industry plus marginal workers.

Table 3
Inflation Process for Males, Study Strata and
Three Non-study Wards

	Inverse of selection probability	Count	Population estimate
Very high	17/7	44	107
High	708/46	293	4,510
Standard	152/6	9	228
Khadia	25/2	0	0
Girdharnagar	66/2	1	33
Kankaria	33/2	7	116

Table 4
Inflation Process for Females, Study Strata and
Three Non-study Wards

	Inverse of selection probability	Count	Population estimate
Very high	17/4	55	234
High	580/29	466	9,320
Standard	280/3	52	4,853
Khadia	25/2	4	50
Girdharnagar	66/2	14	462
Kankaria	33/2	19	314

3. DATA COMPARABILITY

3.1 Census Data

One purpose of this note is to determine to what extent current secondary data sources accurately account for workers in household industry. Before doing this, one must first establish the comparability of the data. In this case, the secondary data of interest are census counts of those working in household industry and NSSO estimates of workers in the unorganised garment sector and their value added contributions. The census defines household industry as below.

Household industry is defined as an industry conducted by the head of the household himself/herself and or by the members of the household at home or within the village in rural areas and only within the precincts of the house where the household lives in urban areas. The larger proportion of workers in a household industry should consist of members of the household including the head. The industry should not be run on the scale of a registered factory which would qualify or has to be registered under the Indian Factories Act (*Census of India, 1991*).

The main criteria for classification as a household industry are the participation of one or more family members and that the work should relate to production, processing, servicing, repairing or making and selling goods. Household industry does not include only selling goods or the professions.

The major differences in the two estimates being compared are : first, that the study outlined above only focuses on home-based garment makers, a subset of the broader household industry classification; second, the micro study's estimates include both main and marginal workers; and third, the study took place in 1998 while the census count was done in 1991. Otherwise, the criteria of participation of a family member and production related work within the home are both met. One can account for the main/marginal worker difference by adding the numbers of marginal workers to the census' numbers in household industry (leading to a likely overestimate of numbers in household industry as not all

marginal workers work in household industry). After doing this, one would expect that the estimates of garment makers in household industry found in the study would be a small proportion of the numbers counted in the census, as the census focused on all types of household industry. The proportion of home-based garment workers to the total in household industry could be expected to be higher in 1998 than 1991 if data for home-based garment workers were available, as there is evidence of new entry into home-based garment making in Ahmedabad.

Another important issue to address is that the counts from the micro study are of enterprises or respondents, versus all workers in the enterprises. Thus, the counts and the population estimates, underestimate the actual number of regular workers in the home-based garment production sector of the city. This will be relevant in assessing the presence and/or extent of an undercount by the census.

3.2 NSSO Data

Before comparing the estimates of value added for garment sector enterprises, it is also important to highlight any differences in the inputs to the calculations. The first difference is that the NSSO data used are based on unpublished data for urban Ahmedabad district while the area included in the micro study is urban Ahmedabad city. Thus, the former includes urban towns in the district Ahmedabad while the latter includes only urban Ahmedabad city, a smaller area. However, Ahmedabad city is the primary urban area in the district so this should be only a minor variation.

Another difference in the data inputs involved in the estimates is that the NSSO Ahmedabad data for the garment sector includes a broader range of enterprise types than the ones included in the micro study. The NSSO unpublished data are for employment in own account enterprises, non-directory establishments and directory establishments in the district's unorganised garment sector and value added per worker is averaged across workers in all three of these enterprise categories.² The micro study

² Definitions of these enterprise types from the NSSO follow. *Own account enterprise*: an enterprise run without regular use of hired labor. *Non-directory establishment*: an establishment hiring fewer than six workers, with these workers being hired and/or family workers. *Directory establishment*: establishments employing six or more workers, with these workers being hired and/or family workers. See NSSO 1998.

involved primarily own account enterprises, with producers working for a contractor included as own account workers for this classificatory purpose, based on number and type of workers versus source of work orders. Only approximately two per cent of micro study respondents had hired workers on a regular basis and would be labelled non-directory establishments. None of the micro study respondents could be categorised in called directory establishments. This difference would lead one to expect that the value added per worker estimate will be higher in the NSSO data since they include directory establishments that are likely to be more productive due to their size and production capacity.

In order to assess the numbers and contribution of own account enterprises, the NSSO carries out a household survey as part of its data collection methodology. This theoretically should capture home-based producers working independent of contractors. By including workers of non-directory and directory establishments in the unorganised sector it should also capture home-based producers working directly for these establishments as piece rate workers. Those working for middlemen may be more difficult to count. Therefore, the NSSO counts of workers in the garment sector of urban Ahmedabad should be higher than or at least equal to those of the micro study since the former involves a larger area and includes employees of non-directory and directory establishments who are not home-based.

It is also important to note that the micro study focused on counting enterprises rather than workers. However, the NSSO calculates economic contribution in the unorganised sector by multiplying number of workers by value added per worker. Therefore, to match the NSSO method, an adjustment was made to the micro study population estimates to account for workers. These adjusted numbers were then used in calculating the contribution of home-based garment producers to the economy. However, this adjustment was not made in calculating the population estimates in Section 4.1, since they were done according to gender and disaggregating the adjustment in this way would be a very complex exercise. Section 4 compares the actual numbers.

4. COMPARISON OF ESTIMATES

4.1 Number of Producers

Table 5 gives the census numbers of male workers in the household industry plus marginal workers, categorised by the strata used in the study of garment workers and then by the number for the remaining 24 wards. The estimates of male-run home-based garment producing enterprises from the micro study and the further counts also are given. Table 6 illustrates the same data for females.

As one can see, in all cases except the standard stratum for males, the estimates of home-based garment producing enterprises exceed those of the total workers in all household industry plus marginal workers provided by the census. One would expect that the home-based garment producer estimates would be only a small proportion of the census numbers, so the extent of the difference in the opposite direction, particularly for females, is extremely telling. The numbers illustrate how by definition the census is able to capture household industries, but in application of the definition in the field, problems clearly arise.

Across the city, 3,369 more male home-based garment producers were found than the total men in household industry and marginal workers from the census of 1991. This is likely to be an underestimation of the difference for two reasons. First, it was assumed that all marginal workers are in household industry when in reality a proportion of them will not be so categorised and second, the micro study estimates do not include all regular enterprise workers who contribute to the enterprise, only the entrepreneurs.

Table 5
Estimates for Males

	Very High	High	Standard	24 wards ³	Total
Census HH Industry + marginal workers	43	2,457	915	3,881	7,296
HB Garment Enterprise Estimate	107	4,510	228	5,820	10,665

³ The counts in the 24 wards included one area that had a very large number of male home-based garment producers. This was seen as an unusual case and not the norm for the ward as the other area had a very small number. Therefore, the estimated number of males in the 24 wards is based on the average of the population estimate with and without the unusual area, i.e. $(4984 + 6656)/2 = 5820$.

The difference between the estimated number of female-run home-based garment producing enterprises in the 43 wards of Ahmedabad and the census numbers in household industry and marginal workers is even more apparent, with there being an estimated 33,642 female home-based garment producers and only 9,292 women counted by the census as in household industry, plus marginal workers. Thus, the micro study found more than three times the number of female producers in the garment sector than those counted by the census as working in household industry, plus marginal workers and again this is an underestimation for the two aforementioned reasons. One can assume that the underestimation of female workers in household industry in general is even greater than illustrated in Table 6. This could be because other sectors with large concentrations of females working in household industry, such as agarbatti-making and bidi-rolling, are likely to have similar numbers working in the home as those found in garment production.

Table 6
Estimates for Females

	Very High	High	Standard	24 wards	Total
Census HH Industry + marginal workers	112	2,931	1,536	4,713	9,292
HB Garment Enterprises Estimate	234	9,320	4,853	19,235	33,642

What the results of the micro study illustrate is the rather extreme undercounting by the census, of those working in household industry, particularly of women in household industry, leading to a potential undervaluation of their contribution to the economy. It highlights the need to re-examine the methodology involved in obtaining counts of household industry, particularly issues such as what questions are asked and of whom. The extreme undercount of women points out the need for greater gender awareness among census staff.

4.2 Estimated Contribution of Home-based Entrepreneurs

In the micro study on home-based garment producers, data were collected to calculate value added. Value added is earnings less the cost of inputs and general expenses. In this case, earnings were calculated on a monthly

basis as the average of the most earned per day and the least earned per day per garment stitched, with this number summed across all garments stitched and multiplied by the number of days worked in a month (Kantor, 2000). Compared to other earnings, data collected in the survey was based on average daily and weekly production levels. This method appeared the most representative of the highs and lows experienced by the producers. In responding to questions about average earning levels, respondents appeared to rely heavily on information called to mind most easily and did not appear able to represent the range of production levels experienced throughout the seasons.

Monthly expenditures on inputs and general expenses, such as equipment rental, transport and electricity, were summed and subtracted from the monthly earnings figure to arrive at monthly value added per respondent. These figures were then inflated by the inverse of the respondents' selection probabilities and summed across respondents to arrive at the estimates of value added per month for the population of home-based garment producers in the 19 study wards. The monthly figures for the sample were multiplied by the number of months worked per year by each respondent to arrive at their annual value added levels. These values were inflated and summed to arrive at the estimated annual value added for the population of home-based garment producers in the 19 study wards.

As stated previously, in order to estimate the number of home-based garment makers in the entire city of Ahmedabad, enumerations were conducted in two areas in each of the 24 wards not included in the study. The results of these enumerations were used to estimate by gender the population figures given in Section 2. These enumeration results were also used to calculate value added figures for the entire citywide population of home-based garment producers. This was done by calculating average monthly and annual value added per enterprise in the 19 wards, based on the estimated aggregate output levels and number of home-based garment producing enterprises in the 19 study wards. This was done across gender and well as by gender. The average output levels (annual and monthly) were then multiplied by the relevant population of garment producers across all 43 wards to arrive at the estimated level of value added contributed per month and year for all home-based garment producers and for males and females in this sector. The key assumption behind using this method of estimation is that average value added levels

will be the same in the non-study wards as in the study wards. This is not an outlandish assumption as there is little reason to suspect that relations of production will differ significantly in the included and excluded wards.

As mentioned previously, an adjustment was made to account for the total number of workers in the home-based garment producing enterprises so that the method of calculating contribution would match that used by the National Accounts (workers multiplied by value added per worker). The share of hired and family workers to the total number of workers from the count in the 19 study wards was calculated and used to determine the additional workers in the population of home-based producers in the 19 wards and in the 43 wards. This figure was 19.5 per cent (211/1082). Based on this method, it was determined that in the 19 study wards an additional 4,664 workers should be included in the count, based on the following formula.

$$y / (19252 + y) = 0.195,$$

with y = the estimate of enterprise hired and family workers in the population of enterprises in the 19 ward area.

Thus, the total number of home-based garment workers in the 19 wards is 23,916. This number was then used to calculate value added per worker, given in Table 7, by dividing the value added estimate for the population of enterprises in the 19 ward study area by the total number of workers. The same calculation was done to determine the additional workers in the 43 wards, with this number being 10,733.

Table 7
Estimate of Value Added Contribution in 1998 Prices, Citywide

	Value added estimates, 19 wards	Estimated population of workers 19 wards	Average value added per worker	Estimated population of workers 43 wards	Citywide estimates of added contribution
Monthly	33,022,682 (US\$ 773,365)	23,916	1.381 (US\$ 32)	55,040	76,010,240 (US\$ 1.78 million)
Annually	341,200,000 (US\$ 7.99 million)	23,916	14,267 (US\$ 334)	55,040	785,255,680 (US\$ 18.4 million)

Note: US\$1 = Rs 42.7, throughout

The NSSO, in its 51st Round, surveyed unorganised sector manufacturing units across India to estimate number of enterprises, employment, inputs, outputs and value added (NSSO, 1998). This round was implemented in 1994-95 and all financial data were reported at 1980-81 prices. To compare the NSSO figures with those estimated above, the former were converted to 1998 prices, with these figures given in Table 8.

Table 8
NSSO Estimates for Own Account Enterprises, Non-directory Establishments and Directory Establishments, 1994-95, at 1998 Prices, Urban Ahmedabad

	Number of employees	Value added per worker	Contribution
Garment industry	5,966	35,624 (US\$ 834)	212,532,784 (US\$ 4.98 million)

Unpublished NSSO data were available for unorganised sector employment, value added per worker and number of enterprises operating in industry code 265, the garment industry, in all three enterprise types in urban Ahmedabad (Unni, 2001). Table 8 shows the estimated value added contribution of these employees to the city's economy. What they highlight is how the NSSO, like the census, undercounted those working in the garment sector. The total number of employees the NSSO estimates as active in the sector, in all three types of enterprises, is considerably fewer than those estimated in the micro study, even though the NSSO number theoretically includes home-based own account producers, dependent workers working for non-directory and directory establishments and workers located in small scale workshops. Section 3.2 laid out the expectation that the NSSO estimates of numbers of workers would be higher due to its focus on workers in all three enterprise types. This clearly is not the case, with the micro study accounting for approximately nine times as many workers in this sector. This is because of NSSO missing many home-based producers in their data collection phase. While the organisation includes a household survey in its data collection strategy, it is unlikely that dependent workers would be counted this way; they would be counted as employees of the firms from which they receive work. This means that those dependent home-based producers working for middlemen may be missed and many other dependent workers also are likely to be missed to the extent that the establishments for which

they work do not keep records of their workers or do not want to report accurately the number of their workers. Another reason for the difference in numbers may be gender bias, in that interviewers may not be aware of women's work in this sector and may not make an effort to enquire carefully about women's work beyond their traditional unpaid household work. Thus, as with the census, current survey methods do not perform well in accounting for those working within their homes.

A better estimate of contribution then becomes the product of the number of workers in household industry as estimated by the census and the value added per worker as estimated by the NSSO. The census data are still an underestimation, but their numbers are larger than the figure provided by the NSSO. Also, this method most closely matches that used in the National Accounts to estimate economic contribution from the unorganised manufacturing sector. Table 9 provides this estimate.

Table 9
NSSO and Census Estimates for Own Account Enterprises,
Non-directory Establishments and Directory Establishments, 1994-95,
in 1998 Prices, Urban Ahmedabad

	Number in household industry, plus marginal workers, census 1991	Value added per worker, NSSO 51st Round	Estimated Contribution
Garment Industry	16,588	35,624 (US\$ 834)	590,530,912 (US\$ 13.8 million)

What both Tables 8 and 9 show is that the estimated total value added for garment industry in urban Ahmedabad district for own account enterprises, non-directory and directory establishments is less than that estimated for the population of home-based garment producers in urban Ahmedabad city. This difference flows from differences in the estimates of number of workers made by the three sources and the higher total value added estimate from the micro study is not made up for by the much larger value added per worker figure provided by the NSSO. This difference in value added was expected, due to the NSSO data including value added for all three types of enterprises, with the contribution of directory establishments pushing the figure higher. Data for the textile

sector in urban Gujarat support the higher value added figures in directory manufacturing establishments, with value added per worker in directory textile manufacturing establishments alone equalling Rs 79,741 and for own account and non-directory establishments equalling Rs 38,438 (Unni 2001).

One aim of this section was to show how much home-based garment producers contribute to the economy by computing their share of value added in the garment sector of Ahmedabad. However, this cannot be done due to the fact that the study's estimates are greater than those provided by the secondary sources. The study's figures can be compared to those for value added for all manufacturing in Gujarat state, understanding that the figure for state-level manufacturing value added is likely to be an underestimation due to undercounts of home-based producers. The value added figure for all manufacturing enterprises and establishments in the unorganised sector in urban Gujarat in 1994-95 is Rs 10.2 billion (Unni, 2001). Thus, the share of the population of home-based garment producers in Ahmedabad in this total is 7.7 per cent (785 billion/10.2 billion). Again, though, the accuracy and usefulness of this figure is questionable due to the likelihood that many producers, particularly home-based producers, are likely not to have been counted in the NSSO enumerations. This highlights the need for greater attention to accounting for both own account and dependent home-based producers in the household surveys conducted by the NSSO. Accounting for dependent workers through household surveys rather than through enterprise surveys may allow for more accurate estimates of their presence.

5. GENDER DIFFERENCES IN CONTRIBUTION

The numbers in Table 10 illustrate the gender difference in contribution levels within the home-based garment sector in Ahmedabad. These estimates are based on value added per enterprise, as disaggregating the share of workers attributable to female- and male-run enterprises was a difficult exercise and less important here since the numbers are not compared to any external estimates. The figures show that female home-based garment producers contribute substantially less per enterprise than males. Thus, while there are more than three times as many female home-based garment producers at the aggregate level, women's value added contribution is only 1.4 times that of men (Rs 447.4 million for females versus Rs 329.3 million for males). This is because at the producer level, the value added per enterprise for men is 2.3 times greater than that for women's enterprises (Rs 30,800 versus Rs 13,300). Thus, men are more economically successful than women in this sector.

Table 10
Estimate of Value Added Contribution at 1998 Prices Citywide
by Gender

	Value-added estimates, for 19 ward population	Estimated population of home-based enterprises, 19 wards	Average value added per enterprise	Estimated population of home-based enterprises, 43 wards	Citywide estimates of value-added contribution
Males (monthly)	14,735,082 (US\$ 345,084)	4,845	3,041.30 (US\$ 71)	10,665	32,435,465 (US\$ 759,613)
Males (annually)	149,600,000 (US\$ 3.5 million)	4,845	30,877.19 (US\$ 723)	10,665	329,305,263 (US\$ 7.7 million)
Females (monthly)	18,287,598 (US\$ 428,281)	14,407	1,269.35 (US\$ 30)	33,642	42,703,642 (US\$ 1.0 million)
Females, (annually)	191,600,000 (US\$ 4.5 million)	14,407	13,299.09 (US\$ 311)	33,642	447,408,010 (US\$ 10.5 million)

The micro study from which these estimates were derived sought to examine gender differences in success outcomes and determine why any differences exist (Kantor, 2000). It determined that this gender difference in economic outcomes is in part due to gender segregation in types of garments stitched, with men having a monopoly on stitching men's western clothes which are high value added products, and women having a monopoly on finishing work and stitching salwaar pants, which are lower value added jobs. It also was found that women have less experience and training than men, leading to lower quality work and lower value added outcomes.

The results of the micro study have led to some recommendations regarding how to improve economic outcomes among home-based garment producers, improving their individual livelihoods as well as their contribution to the economy. These will be discussed in Section 6, along with recommendations regarding how to improve counts of home-based enterprises.

6. RECOMMENDATIONS

6.1 Improving Counts

The recommendations offered here to improve counts of those working in household industry are nothing new, but quite clearly need a greater commitment in terms of implementation. First, information requested at the household level tends to be influenced by who within the household is queried. In the South Asian context, asking a male household head about the economic activities of household members may lead to an undercount of women's economic participation, inside or outside the home, due to a lack of recognition of women's economic contribution or the stigma attached to women working for income. It may be better to query elderly members of the household or other female family members in order to obtain less gender biased data. This is not a guaranteed method of improving counts of workers in household industry, as women themselves often do not categorise themselves as workers. It was, however, the recommended method of enumeration in the micro study of home-based garment workers.

Researchers may need to pose detailed questions regarding work within the home for money, disaggregated by types of activities, in order to improve data quality in terms of both male and female workers in household industry. One reason why the counts resulting from the micro study were better than those of the census may have been the study's focus on one activity and work location compared to the census' need to count workers across all industries and work locations. Sensitivity to multiple economic activities and the seasonality of some household industries also can improve estimates. Finally, the extreme undercount of women points out the need for greater gender awareness among enumerators and the need to use more female enumerators, particularly when speaking to female household members. Better training of census enumerators is necessary in order to ensure that questions are asked objectively and to instill a greater gender sensitivity regarding women's work.

An effort to improve data quality in terms of counts of those working in household industry is justified by the importance of this work to many sectors of the economy. More accurate counts can lead to a better

understanding of the contribution of household industry to the economy and to a justification of policies and programmes to support those working within the home in order to improve their livelihoods and conditions of work. It is hoped that the evidence provided here for the number and economic contribution of home-based garment producers in Ahmedabad will lead to an increased commitment to better accounting for home-based production by all data collection agencies in India. Poor enumerations of these enterprises clearly lead to underestimations of economic output, an outcome in no one's interest.

6.2 Improving Economic Outcomes

While the economic contribution of home-based producers is often underestimated, when it is properly accounted for, it is often rather low, particularly for women. In order to address the low economic performance of home-based enterprises, this paper will conclude with recommendations regarding strategies to help improve value added outcomes for home-based garment producers, particularly females. Some factors which are central to improving women's value added outcomes include, expanding training offers, increasing access to credit and changing perceptions regarding women as stitchers. Two recommendations assisting both men and women include helping producers to make connections with higher value added purchasers on own account and on a macro scale, working to reorient the garment industry in Ahmedabad so that it serves more markets outside of the city.

The evidence from the micro study indicated that skills training in sewing would directly increase women's economic success (Kantor, 2000). It does this by improving quality levels, which could then assist women in obtaining work orders for higher value added garments within those types already stitched or could assist them in diversifying the range of garments stitched, another factor directly increasing economic outcomes. By increasing the quality of production, skills training could also result in women gaining better access to markets outside of Ahmedabad. This could then influence the piece rates earned or market prices for final goods, potentially improving women's value added.

If training programmes focused on skills important to garment production beyond sewing, they could have wider reaching effects.

Training in design, cutting, marketing and general business skills could help women move into own account production or if they already produce on own account, it could help them move into markets serving higher end final customers. It also helps to ensure that a producer has a steady stream of work, in that those producers with high quality, who promptly complete finished goods will be more likely to receive constant work levels from direct customers or suppliers.

While access to credit was not found to directly influence women's economic outcomes, increasing capital levels did (Kantor, 2000). Most stitchers bought their current sewing machines through hire purchase agreements with retailers, implying access to credit is an important input prior to capital investments. Therefore, access to credit is a necessary facilitative element in enhancing capital investment among many home-based garment producers. Providing opportunities to access credit for investment should clearly be coupled with the previously mentioned programme interventions in training in order to ensure that investments in capital provide a return. If work orders are not available at a level to justify more capital investments due to the large supply of producers, interventions to support capital investments may be worthless. Therefore, interventions related to accessing new, higher value markets in the city and beyond should first be devised and implemented. Access to new technology may directly aid in accessing these markets, as new technology may improve the quality of production, just as skills training will.

Conversations with actors in Ahmedabad's garment sector beyond home-based producers brought to light perceptions of female garment producers. Female producers were often seen as best suited to the small work of sewing on buttons and hemming, as well as stitching petticoats and salwaar pants, all low piece rate, low skill production activities. This reflects findings of studies in other industries which showed that employers perceive women as performing detail work much better than men and that this work is often low paid and defined as low skilled, generally because it reflects skills typically held by women, which women obtain prior to entering paid work (Elson and Pearson, 1981; Stichter, 1990; Sinclair, 1991). The types of garments stitched within the home-based garment sector reflect these perceptions, with women stitching women's and children's garments, doing finishing work or a mix of garments. Very few women stitch only men's western clothes, the high skill, higher piece rate garments. Changing perceptions regarding the

skills women bring to stitching work and helping women take up all garment types will assist them in improving their economic outcomes.

It was found that home-based garment producers of either gender working only as dependent workers – home workers – produced the least value added while those serving a mix of final customers, that is, both individuals and contractors, performed the best (Kantor, 2000). This highlights the need to assist home-based producers in accessing final markets directly. This may give them more leverage in dealing with suppliers and may increase their control over the amount of work orders they receive, keeping their income more stable. The previous recommendation regarding training programme involving aspects relevant to garment production beyond sewing also applies here. Training in accessing markets and in general business skills can help home-based producers take greater control over their enterprises. Direct assistance in accessing markets would also be recommended through events such as NGO-sponsored trade fairs.

The final recommendation has a long-term perspective. It focuses on the issue of the saturated market served by most home-based garment producers in Ahmedabad. Most producers work either for direct customers in their community or for suppliers who often serve only the local or city market. Only 30 per cent of the respondents in the study served markets outside of the city and most of these served markets within Gujarat (Kantor, 2000). For the garment sector to provide sustainable livelihoods for home-based producers, a shift of focus to serving a wider, perhaps national, market is necessary. This would imply that Ahmedabad city government officials, supported by state officials and industrialists, need to make a conscious effort to make Ahmedabad into a garment centre. The result of this would be a greater demand for garments produced in the city and as long as home-based producers can meet the quality requirements, they should see an increase in work. This is a real possibility for Ahmedabad in that there have been discussions of turning the land and infrastructure of the many closed textile mills in the city into garment production centres (Banerjee, 1998). This infrastructure, coupled with synergy with the currently operational textile mills, could make the concept a reality. The bigger challenge may lie in ensuring that home-based producers, particularly women, benefit from the any proposed developments. The above recommendations will help, but strong advocates for these producers will also be necessary.

References

- Anker, Richard (1983), "Female Labour Force Participation in Developing Countries: A Critique of Current Definitions and Data Collection Methods", *International Labour Review*, 122 (6): 709-73.
- Anker, Richard, M.E. Khan and R.B. Gupta (1988), "Women's Participation in the Labour Force: A Methods Test in India for Improving Its Measurement", *Women, Work and Development*, 16, Geneva: ILO.
- Banerjee, Sharmistha, "Thimbles on, Mill-owners Get Ready for the Stitch in Time", *The Times of India* (Ahmedabad), July 24, 1998.
- Census of India (1991), *Economic Tables, Series 1, India, Part III-B*, New Delhi: Government of India.
- Dixon-Mueller, Ruth and Richard Anker (1988), *Assessing Women's Economic Contribution to Development*, Training in Population, Human Resources and Development Planning, Paper No. 6, Geneva: ILO.
- Elson, Diane and Ruth Pearson (1981), "The Subordination of Women and the Internationalisation of Factory Production" in Young, K.C., Wolkowitz and R. McCullagh (eds), *Of Marriage and the Market: Women's Subordination in International Perspective*, London: CSE Books.
- Kantor, Paula (2000), "Gender Differentials in Microenterprise Success Among Home-based Garment Makers in Ahmedabad, India, Unpublished dissertation, Chapel Hill: University of North Carolina at Chapel Hill.
- National Sample Survey Organization (NSSO) (1998), *Unorganised Manufacturing Sector in India: Its Size, Employment and Some Key Estimates*. 51st Round, New Delhi: NSSO.
- Sinclair, M. Thea (1991), "Women, Work and Skill: Economic Theories and Feminist Perspectives" in Redclift, N. and M.T. Sinclair (eds), *Working Women: International Perspectives on Labour and Gender Ideology*, London: Routledge.
- Stichter, S (1990), "Women, Employment and the Family: Current Debates" in Stichter, S. and J. Parpart (eds), *Women, Employment and the Family in the International Division of Labour*, Philadelphia: Temple University Press.
- Unni, Jeemol (2001), Personal communication.