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# Changes in Economic Activity of Males and Females in India : 1911-61

## I. Introduction

ON the basis of current international data on economic activity rates among females, levels of living, industrialisation, etc., it has been suggested that female activity rates form an U-shaped pattern in relation to economic development. According to Sinha<sup>1</sup>, in the early stages of economic development, scope for employment of women narrows as a result of contraction of agricultural and household industries. Though employment opportunities in modern sector grow, these accrue mostly to men on account of unemployment and underemployment prevailing in these countries in the early phase of development. On the supply side, the rising level of family income reduces pressure upon women to take up work as supplementary earners. This trend is reversed at the later stage when the growth of demand for labour in the modern sector exceeds the contraction in the traditional sectors, and women's motivations for work are enhanced by rising wages and the consequent rise in the opportunity cost of leisure.

Jeanne Ridley<sup>2</sup> explains the U-shaped pattern in terms of demographic transi-

1. J. N. Sinha, "Dynamics of Female Participation in Economic Activity in a Developing Economy", in : Registrar General, India, *Papers Contributed by Indian Authors to the World Population Conference, 1965*, New Delhi, 1965.

2. Jeanne Clare Ridley, Demographic change and the role and status of Women. *The Annals of the American Academy of Political and Social Science*, Vol. 375, January 1968, pp. 15-25.

tion which ran parallel to economic transition in the West. In pre-industrialised societies, high mortality, warranting high natality, necessitated preoccupation of women with their biological role of reproduction. But this role could be easily combined with an economic role since economic activities were centred within the family. With industrialisation, economic production was removed from home. While men could transfer their activities outside the home with relative ease, the women's preoccupation with bearing and rearing functions continued to conflict with their economic role. The resistance was particularly strong as long as the natality lagged behind the decline in mortality. At later stages when infant and child mortality were reduced to low levels, it was no longer required to bear a large number of children to insure the survival of a few. Thus, women were enabled to resume an economic role, which they did increasingly in the advanced countries after the World War II.

The two explanations are at best broad generalisations indicating the need of studying in depth the experiences of individual countries in different stages of economic development. Accordingly, the present study attempts an analysis of the experience of India over the last six decades since 1911. It seeks to throw some light on the nature and causes of changes in women's economic activities, vis-a-vis those of men, in the early stages of economic development.

The study is confined to the Indian Union as of 1961, excluding Jammu and Kashmir, Andaman and Nicobar Islands, L.M. and A. Islands, Dadra and Nagar Haveli, Goa, Daman and Diu, NEFA, Nagaland, Pondicherry and Sikkim. The excluded areas contained 1.3 per cent of India's population in 1971.

## II. Source of Data and their Comparability

The present study is largely based on the census data on the size and the industrial distribution of the working force. The concept of working force and its industry classification have varied from census to census, thereby limiting comparability over time. The data from the 1911, 1921 and 1961 censuses seem to form a comparable set, while the 1931 and 1951 census data are not strictly comparable with those of the above three.<sup>3</sup> As compared to the 1961

3. Jaipal P. Ambannavar, "Comparability and adjustment of the Indian Working Force data, Censuses 1911-61" *Artha Vijnana*, Vol. 11, No. 4, December 1969, pp. 521-540.

Census, it has been estimated that the 1931 and 1951 censuses undercounted the working force by 10 and 16 per cent respectively. The undercount was much larger among females than males, and there is enough evidence to show that it was almost entirely confined to the agricultural sector. The 1971 census departed from the past censuses so much as to render its data for females entirely incomparable with those of the earlier censuses.<sup>4</sup> It has been estimated that if the 1971 census had not so departed from the 1961, the working force would have comprised 156 and 71 millions instead of the 149 and 31 millions among males and females respectively.<sup>5</sup> The very large undercount among females is spread over agricultural as well as unorganised non-agricultural activities. Accordingly, the analysis of historical trends in the employment pattern in respect of females, cannot be extended to 1971.

### III. Trends in Worker Rates and Sex Ratio Among Workers

Table 1 presents trends in population, working force, worker rates and sex ratio of the population and working force during 1911-61.

TABLE 1—TRENDS IN POPULATION, WORKERS, WORKER RATES, AND SEX RATIO AMONG WORKERS, INDIA : 1911 TO 1961

(Figures in thousands)

Year	Population (P)		Worker (W)		Worker Rate@		F/M x 1000	
	M	F	M	F	M	F	M	F
1911	.126630	122088	79002	41358	62.39	33.88	964	525
1921	126730	121109	77224	39829	60.94	32.89	956	516
1931	141045	134089	82477	36303	58.48	27.07	951	440
1951	183126	173351	98934	40374	54.03	23.29	947	408
1961	223376	210288	128048*	58791*	57.32	27.96	941	459

\* Including "Persons employed before but now out of employment and seeking work".

@  $WR = W/P \times 100$ , sex-specific.

4. Jaipal P. Ambannavar, "Comparability of 1971 and 1961 Census Economic Data", *Indian Journal of Labour Economics*, Vol. XIV, No. 2-3.

5. Jaipal P. Ambannavar, "Long-term Prospects of Population Growth and Labour Force in India", *Second India Study Sponsored by Ford Foundation*, New Delhi 1975.

Between 1911 and 1961, the worker rate has fallen for both sexes, decline being 18 per cent for females and 8 per cent for males. This is more sharply reflected by the ratio of female to male workers.

The change in the worker rate between 1911 and 1961 could be traced to variations in (1) the propensity to participate in work as reflected in specific (such as age-specific) activity rates, and (2) the characteristics of the population. As the data on specific activity rates are not available in the earlier census, it is not possible to assess the contribution of the variations in the former to the total change in the worker rates. However, data on population characteristics are available at both points of time, and with the help of specific activity rates available from the 1961 census, it is possible through indirect method of standardisation to assess the extent of change in the worker rate brought about by variations in population characteristics.

An analysis of the worker rate differentials revealed by the 1961 census indicates that work participation is influenced by age, residence, educational level, marital status, etc. The young and old participate in work to a much lesser extent than adults. Urban women's participation is only one-third of that of rural women. Illiterate women and those educated beyond matriculation show higher activity rates than the less educated. Unmarried girls participate in work to a greater extent than married women, except in younger ages, upto 25, and widowed women excel in all but older ages; child bearing and care explain lower activity rates among married women. Changes in these characteristics may, thus, account for variation in the crude worker rate. Table 2 presents the changes in these population characteristics during 1911-61.

Using the method illustrated in" Appendix Table 1, it is estimated that of the total decline in the worker rate among males, 46 per cent could be attributed to changes in the age structure, 10 per cent to urbanisation, and the remaining 44 per cent to unknown causes. Corresponding percentages with respect to the decline in the worker rate among females are : 26, 30 and 44.

This analysis of the components of change in the worker rates does not answer the important question, why the decline in the worker rate was greater among females than among males. The answer lies in the fact that the worker rate differentials by characteristics such as age, rural-urban residence, educational level, marital status, etc., are much greater for females than males, for

TABLE 2-TRENDS IN CERTAIN POPULATION CHARACTERISTICS  
INFLUENCING WORKER RATES FOR MALES AND FEMALES,  
INDIA, 1911 TO 1961

Year	Percentage of Population							
	in 15-59 age age group		in Urban Areas@		Literate@@		Mean age at Marriage£	
	Male	Female	Male	Female	Male	Female	Male	Female
1911	56.9	56.9	5.93	5.01	11.0	1.0	20.3	13.2
1921	56.0	55.9	6.74	5.51	12.4	1.7	20.7	13.7
1931	55.9	55.7	7.74	6.36	14.0	2.3	18.7	12.7
1951	56.2	55.3	12.85	11.25	28.6	9.1	19.9	15.6
1961	53.5	52.9	15.03	13.23	40.6	15.4	21.6	15.9

@ In urban localities with 20,000 and over inhabitants.

@ @ Literate as percentage of population aged 5 and over, sex-specific.

£ Figures upto 1931 relate to India and Pakistan together.

example, the rural-urban difference in the worker rates. While the crude worker rates among males in rural and urban areas are 58 and 53 respectively, the corresponding rates among females are 31 and 10. So, the changes in any of these characteristics during 1911-1961, have brought about greater decline in the crude worker rate among females than males. The change in the age structure has almost been similar for both sexes, but this would have resulted in a decline of about 3.8 per cent in contrast to that of 5.1 per cent in the crude worker rate for females, if the 1911 age-specific activity rates had been the same as in 1961. Similarly, the changes in the urban proportions was almost the same for both sexes, but urbanisation would have resulted in a decline in the crude worker rate of 5.9 per cent for females in contrast to one of 0.9 per cent for males, if the 1911 age-specific activity rates and the age composition of rural and urban populations had been the same as in 1961.

It is evident, thus, that urbanisation has mostly been responsible for the comparatively greater decline in the crude worker rate for females. An answer to the question why urbanisation in India has so far inhibited women's participation in economic activity may, therefore, throw some light on changes in the pattern and nature of economic activities during 1911-61. The answer seems to lie in lack of change in the socio-economic and demographic environ-

ment that discourages women's participation in urban activities. In rural areas, agriculture and household industries account for nearly all activities and these are mostly conducted in family enterprises where women continue work with child care and household chores. In contrast, urban activities are mostly conducted in large scale enterprises where employment requires some level of education necessitates long distance travel and absence from home for certain regulated hours everyday. This greatly conflicts with women's traditional functions of childbearing, childcare and housewife. The circumstances that inhibit women's work participation in urban areas, have not changed. The marginal nature of rural-urban fertility differences indicate that urban women have as much responsibility for childbearing and childcare as the rural. Since household chores are not mechanised and childcare not institutionalised, as they are in industrialised societies, urban women find it difficult to participate in regular activities while taking care of children and household chores. Further, social conventions governing women's contact with opposite sex have not significantly changed and husbands tend to discourage wives from taking up employment.

Let us further consider whether urbanisation has been accompanied by a structural shift in the employment away from agriculture and/or by such changes, in the nature and organisation of non-agricultural activity, as would affect the relative share of women.

#### IV. Trends in the Employment Pattern : Females Versus Males

The process of urbanisation in India, has not been accompanied by a shift in the employment in favour of secondary and tertiary activities. In 1911, the percentage of population living in urban localities with 20,000 or more inhabitants was 5.5, and the percentages of the total working force engaged in manufacturing and in all other non-agricultural activities were 9.6 and 24.4 respectively. The corresponding figures in 1961 were 14.2, 9.5 and 23.0 respectively. Thus, in 1911 a much lower level of urbanisation was associated with somewhat larger proportions of the working force in the non-agricultural sector and manufacturing.

The failure of structural change in employment to accompany urbanisation can be traced to the fact that the growth of modern industry in towns and cities

dealt a death blow to the rural household industry. With changing technology and scale of production there was a shift in the location of industry from rural to urban centres, specially large metropolitan cities. These changes were unfavourable to women's participation in work. The trend in the employment pattern consequently differed between the sexes, as is evident from the following Table 3.

TABLE 3-TREND IN THE PERCENTAGE INDUSTRIAL DISTRIBUTION OF MALE AND FEMALE WORKING FORCE, INDIA, 1911 TO 1961

<i>Industrial Division</i>	<i>Male</i>					<i>Female</i>				
	1911	1921	1931	1951	1961	1911	1921	1931	1951	1961
0	74.31	75.30	74.99	72.99	72.69	78.10	79.86	79.93	83.73	86.32
1	0.24	0.26	0.26	0.48	0.57	0.23	0.28	0.23	0.27	0.28
2&3	9.36	9.04	8.72	9.75	10.15	10.04	8.72	8.29	7.73	8.18
4	1.08	0.94	1.12	1.20	1.40	0.69	0.69	0.74	0.60	0.41
5	0.46	0.44	0.40	0.42	0.37	0.77	0.72	0.76	0.54	0.27
6	5.42	5.68	5.61	6.21	5.31	5.22	5.20	4.84	2.85	1.38
7	1.57	1.25	1.38	2.03	2.29	0.17	0.16	0.12	0.29	0.11
8	7.55	7.08	7.52	6.92	7.21	4.79	4.38	5.11	3.98	3.05
Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
Number @	79002	77224	82477	98934	127569*	41358	39829	36303	40374	58758*

@/n thousands.

\*Excluding "persons employed before, now out of employment and seeking work". N. B. : For description of industrial divisions, please see Table 4.

During 1911-51, the number of female workers in the non-agricultural sector decreased by 2.5 million while that of the male workers increased by 6.4 million. During 1951-61, there was an increase in non-agricultural sector, amounting to 8.1 million for males but to only 1.5 million for females. The proportion of workers engaged in agriculture decreased somewhat for males but increased substantially for females. It would appear, thus, that agriculture has been the only expanding source of employment for females.

As shown in Table 4, the sex ratio of workers decreased from 524 in 1911 to 461 in 1961 in all activities; the decrease was marginal one from 550 to 547 in agricultural activities but a very substantial one from 446 to 231 in non-agricultural activities.

TABLE 4-TRENDS IN THE NUMBER OF FEMALE WORKERS PER 1000 MALE WORKERS IN INDUSTRIAL DIVISIONS, IN INDIA, 1911 TO 1961

<i>Industrial Divisions</i>	<i>Female Workers Per 1000 Male Workers</i>				
	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>
Total Working Force	524	516	440 <sup>e</sup>	408 <sup>e</sup>	461
Agricultural and Allied <sup>a</sup>	550	547	469 <sup>e</sup>	468 <sup>e</sup>	547
Non- Agricultural <sup>b</sup>	446	421	353	246	231
1. Mining and Quarrying	489	539	378	230	225
2 & 3. Manufacturing	561	498	419	323	372
4. Construction	333	376	289	203	135
5. Electricity, Gas, etc. <sup>c</sup>	870	846	836	535	334
6. Trade and Commerce	504	472	380	187	120
7. Transport, Storage, etc. <sup>d</sup>	58	66	37	59	22
8. Services <sup>e</sup>	332.	319	299	235	195

(a) Including "general labourers" in 1911, 1921, and 1931, and similar groups in 1951 and 1961. Division O.

(b) Excluding "general labourers" and similar groups.

(c) And Water and Sanitation, (rf) And Communications.

(e) Unreliable because of the undercount of agricultural workers, specially of female workers.

In the light of these changes we may focus our attention on employment trends in manufacturing, services, and trade and commerce activities, accounting together for about 91 per cent of the female workers in the non-agricultural sector in 1911. Appendix Tables 2 and 3 present trends in the numbers of male and female workers in major and important minor groups of manufacturing and services.

For the present purpose we divide the manufacturing activities into two broad groups; the new and the old. The former comprises paper and paper

products; printing and publishing; rubber, coal, petroleum and their products; transport equipment, machinery and electrical equipment. These are highly organised, capital intensive and urban centred.<sup>6</sup> The number of total workers (both sexes) in these activities shot up from 87 thousands in 1911 to 119, 728 and 1486 thousands in 1931, 1951 and 1961 respectively (or as a percentage of total manufacturing workers, from 0.8 in 1911 to 8.4 in 1961). The number of female workers increased by only 71 thousands, from 12 thousands in 1911 to 83 thousands in 1961. Thus, the growth of these new manufactures has largely benefitted males.

The second category is further divided into three groups on the basis of trends in the size of employment where the total employment has (1) contracted in the long-run, (2) contracted in the earlier decades but expanded later and (3) expanded in the long-run.

The first group is formed by processing of foodgrains, bread and bakery products, vegetable oils, nets, ropes etc., footwear and their repair, and earthen ware and pottery. Total employment in this group decreased from 3704 thousands in 1911 to 2586 thousands in 1961 (its share in manufacturing workers decreasing from 32 to less than 15 per cent). The decline being comparatively much greater for females in each of these industries, there was a general reduction in sex ratio of workers as shown in Table 5.

TABLE 5—TRENDS IN THE RATIO OF FEMALE TO MALE WORKERS IN IMPORTANT GROUPS OF MANUFACTURING WHICH SHOW LONG-TERM DECLINE IN TOTAL EMPLOYMENT, INDIA, 1911 TO 1961

<i>Manufacturing Activities</i>	<i>Female Workers Per 1000 Male Workers</i>				
	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>
Processing of foodgrains	12075	7779	7065	1520	831
Bread and other bakery products	1644	1466	1662*	447	64
Production of vegetable oils	688	656	595	347	458
Nets, ropes, cordage, etc.	1962	1295	**	**	1236
Footwear and their repair	232	201	141	88	81
Earthenware and pottery making	572	540	490	402	507

\*Excluding biscuit makers.

\*\*Comparable classification not available.

6. In 1961, more than 75 per cent of the workers in these industries were in non-household, wage paid and urban located employment.

The steep decline in the ratio in foodgrains processing was the net result of a rise in male employment from 76 to 334 thousands and a decline in female employment from 809 to 286 thousands between 1911 and 1961. It is partly true that mechanisation of rice and flour milling resulted in the loss of employment for females while opening up some employment opportunities for males. A considerable part of increase in male employment is attributable to the household sector where females usually predominated in the earlier decades. During 1951-61, the total employment in this activity increased by about 219 thousands as a result of the increased food production and the encouragement given to the hand-pounding of rice etc., in the areas covered by the Community Development programmes. It appears, therefore, that the decline of female employment was to a significant extent, due to the competition from males. With the rising pressure of population on land, particularly after 1921, males have increasingly tended to encroach upon some of the non-agricultural activities traditionally belonging to women.

The total employment in the production of bread and other bakery products decreased from 376 thousands in 1911 to 64 thousands in 1961 as a result of a gradual transfer of this activity from the household to the factory. The decline was much greater among females (from 234 thousands to 4 thousands) than among males.

Processing of vegetable oils had been another source of substantial employment for females in the earlier decades. The total employment decreased from 534 thousands to 321 thousands, due partly to mechanisation (i.e. oil mills replacing the bullock driven "ghanies") and partly to the reduced demand resulting from the substitution of imported kerosene in the place of vegetable oils for lightening purposes.<sup>7</sup> The loss of employment was again much greater among females.

The decline of employment in footwear making is mainly due to mechanisation. The industry passed from village artisans to factories, leading to the disintegration of the village community.<sup>8</sup> The loss of employment was much greater among females than males because some of the displaced male artisans found employment in the urban footwear factories.

7. D. R. Gadgil, *The Industrial Evolution of India in Recent Times*, 4th Edition, p. 166. g. *Ibid.*, p. 165.

The earthenware and pottery is one of the few activities where the method of production has not changed. This is why the sex ratio among these workers has decreased much less than in others. The total employment had, however, decreased as a result of competition from metal ware industry.<sup>9</sup>

Production of cotton textiles<sup>10</sup> is the most important activity where the total employment contracted in early decades but expanded later. These activities engaged 3595 thousands of workers in 1911 and 5344 thousands in 1961 (constituting 31 per cent of the total manufacturing workers in both years). The sex ratio of workers in this activity decreased from 640 in 1921 to 427 in 1951 and rose to 704 in 1961. The explanation lies in the differential growth of the household and mill sectors, since the sex composition of workers in the two differs greatly.<sup>11</sup> Comparing the census data for the household and mills sectors combined with those based on the returns of the textile mills, it appears that a large part of the rise in cotton textile employment during 1911-51 had occurred in the mills sector. During 1951-61, however, the household sector ("Khadi" and handloom) claimed a large part of the rise in employment on account of the government limiting the mill production and subsidising the handloom products.

Industries, showing long-run expansion of employment are : butter and other dairy products, sweetmeats and condiments, tobacco products, textile garments, made-up textile goods, and structural clay products. The activities engaged about 874 thousands workers in 1911 and 3384 thousands in 1961 (constituting 8 and 19 per cent of the total manufacturing workers in the respective years). The trends in the sex ratios of these workers are given in Table 6.

The sex ratios of workers increased in all activities except textile garments (i.e. tailors) where the decline of female workers has been attributed to the income effect.<sup>12</sup> These activities, usually carried out in households and with

9. *Ibid*, pp. 164-65.

10. Including cotton ginning, cleaning, pressing and bailing, and spinning and weaving of cotton textiles, but excluding dyeing, bleaching and printing.

11. In 1961 there were 1174 female workers per 1000 male workers in cotton spinning and weaving other than in mills (minor groups 231, 235 and 236) in contrast to only 68 in mills (minor group 232).

12. V. N. Kothari, Long-term trends in the employment pattern in India, *Indian Economic Journal*, Vol. VII No. 4, April 1960, p. 438.

the methods of production showing little change, have favoured female employment. The growth of their employment occurred largely after 1931, and is associated with the growth of urban population (e.g. dairy products and structural clay products produced in rural and sold in urban areas, and textile garments), growth of white sugar industry (e.g. sweetmeats and condiments) and changing habits of the Indian population (e.g. tobacco products, including "bidi").

TABLE 6—TRENDS IN THE RATIO OF FEMALE TO MALE WORKERS IN IMPORTANT GROUPS OF MANUFACTURE WHERE TOTAL EMPLOYMENT HAS EXPANDED, INDIA, 1911 TO 1961

<i>Manufacturing Activities</i>	<i>Female</i>	<i>Workers Per 1000</i>		<i>Male Workers</i>	
	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>
Butter and other dairy products	961	1209	**	971	2013
Sweetmeats and condiments	278	234	282	623	672
Tobacco products	436	576	470	556	612
Textile garments (i.e. Tailors)	531	447	292	137	140
Made-up textile goods*	1376	1974	**	**	2099
Structural clay products (Bricks etc.)	329	236	256	262	363

\*Except wearing apparel, nets, ropes, cordage, etc.

\*\*Comparable classification not available.

Female employment in all the three groups taken together had increased from 3628 to 4138 thousands while the corresponding increase in male employment was as much as from 4544 to 7176 thousands. In addition, female employment in other traditional activities (not covered by the three groups) had decreased.

In the services division, while the number of female workers decreased by 189 thousands, that of males increased by 3237 thousands. Services may be divided into two broad groups : (i) the better-paid services where a certain level of education is a precondition for employment; and (ii) the low-paid services which are largely manual. The total employment in the first group—consisting of public administration, educational and scientific, medical and health, and legal and business—expanded considerably, benefitting males to a larger extent than females. The second group—consisting of domestic service,

laundry, hair dressing, religious and charitable, etc., claimed about 60 percent of the male and 88 per cent of the female workers in the services division in 1911; its total female employment has gradually decreased. The sex composition of employment in different groups of services varied during the period as shown in Table 7.

TABLE 7—TRENDS IN THE RATIO OF FEMALE TO MALE WORKERS IN IMPORTANT GROUPS OF SERVICES, INDIA, 1911 TO 1961

<i>Female Workers Per 1000 Male Workers</i>					
	1911	1921	1931	1951	1961
All Services	332	319	299	235	195
Public Administration	27	76*	27	36	32
Education and Scientific	103	121	127	198	232
Medical and Health	732	581	546	385	310
Religious and Charitable	209	201	154	175	75
Recreational	345	363	226	252	107
Domestic	627	551	551	553	558
Hotel	338	327	211	110	69
Laundry	826	826	760	704	784
Hairdressing	220	172	151	88	25

\*Unreliable because of wrong enumeration in the princely state of Hyderabad.

The decline of employment in domestic laundry, hair dressing, and religious services is mainly due to the contraction of demand. In urban areas, the full-time domestic servant is being replaced by part-time help, the laundry is getting mechanised, the home delivery of barber's service is getting out of fashion, and the importance of religious element in all festivities and ceremonies is diminishing.<sup>13</sup> In rural areas, these occupations were hereditary in nature, and they have declined with the disintegration of the village community. The increasing pressure of population on land and the land reforms implemented after 1947, have reduced the number of landed classes and large cultivating households which usually employed such workers. Rural development pro-

13. *Ibid.*

jects like construction of dams and roads, seem to have absorbed some workers from agricultural labour families<sup>14</sup> which also supplied domestic servants.

A sharp decline in the sex ratio of workers has occurred in trade and commerce. The employment has decreased for females and increased for males in response to change in the location and organisation of trade and commerce activities. In the earlier decades, a large part of the rural trade was carried at the weekly village fairs, where small traders used to bring their goods for selling. But, with the growth of transport facilities and of towns as convenient centres of trade and commerce, a number of small traders have lost their business to the larger traders in towns. The weekly village fairs have completely disappeared in recent times.

In the division of electricity etc., distinction may be made between (i) electricity, gas and water supply where the scope for employment of women has always been limited, and (ii) sanitation where the number of females was almost as large as that of males in 1911. The total employment in the former group has grown from barely 7 thousands to 254 thousands (from 7 thousands to 245 thousands for males), whereas in sanitation it has decreased from 673 thousands to 373 thousands (from 316 thousands to 148 thousands for females). In urban areas, the use of tractors and trucks for carrying garbage and the introduction of flush system wherever modern water supply is provided has reduced the requirement of sweepers.<sup>15</sup>

There are two types of construction activities : construction and maintenance of (i) rails, roads, bridges, waterways and canals; and (ii) buildings. Employment has expanded in both types of activities, particularly after 1931, but the sex ratio of workers has decreased. A large part of the increase in employment in the construction of buildings has probably occurred in the urban areas where female workers are at a disadvantageous position. In the former type of activities, although the application of earth-moving and stone-crushing machines has adversely affected the female employment, the application of human labour in absolute terms has been increasing. It seems the decline, in the share of females in these activities, is mainly due to competition from males.

14. V. M. Dandekar, *Use of Food Surpluses for Economic Development*, pp. 91-109.

15. V. N. Kothari, *op. cit.*

The census data analysed above do not give separate information for factories where also the share of females has declined. "Whereas in 1927, 17 per cent of all the factory workers were women, this proportion has been declining steadily. In 1956, the percentage was only 10. In cotton textiles industry, 19.4 per cent of the employees were women in 1927, in 1950 only 9.5 per cent were female employees."<sup>16</sup> According to the latest data, the percentage share of woman in total factory employment in 1967 was about the same as in 1956. The trends since 1927 are presented in Table 8.

TABLE 8—TRENDS IN THE PERCENTAGE SHARE OF FEMALES IN FACTORY EMPLOYMENT, INDIA, 1927-67

	(Figures in Thousands)					
	1927*	1937*	1947@	1950@@	1956@@	1967@@
A. Total Workers	1432	1676	2275	2504	2885	3734
B. Female Workers	243	238	264	282	302	395
C. B as % of A	17.0	14.2	11.6	11.3	11.9	10.6

\*Relates to British India. @Relates to 9 part A states and 3 part C states (viz., Ajmer, Delhi and Coorg). @@Relates to Indian Union. SOURCES:

(1) India, Labour Bureau, Ministry of Labour, *Economic and Social Status of Women Workers in India*, Publication No. 15, Delhi, 1953.

(2) India, Labour Bureau and Planning Commission, *Women in Employment (1901-1956)*, New Delhi, 1958, pp. 16-28.

(3) India, C. S. O., *Statistical Abstract of India, 1970*, New Delhi, 1972, pp. 427-428.

As an explanation for the decline in the share of females in factory employment it has been stated, "Protective Laws which regulate their time and hours of work and seek to provide amenities and social security for women workers, not only involve extra expenses but create difficulties in the employment of women. In the older factories the need for rationalisation and modernisation has arisen, and it is contended that the retention of women in the altered set-up is not always possible."<sup>17</sup>

16. Judith Blake, "Demographic Science and Redirection of Population Policy", Symposium on *Public Health and Population Change*, University of Pittsburgh, 1964.

17. Padmini Sengupta, *Women Workers of India*, pp. 26-29.

## V. Socio-Economic and Demographic Implications

Women have maintained their share in agricultural employment. Their contribution to the incomes of the agricultural families has not perhaps changed. Hence, women's socio-economic status in agricultural families is not likely to have changed for the worse.

On the other hand, women's share in the non-agricultural sector has declined because of the destruction of rural industry in competition with new technology. In the families thus affected, women are likely to have lost economic independence and the social status that goes with it. This is particularly true of the families which have migrated to urban areas.

The relationship between fertility and economic activity among women raises the question about the possible effect of this decline in the female share in non-agricultural activities on fertility. Investigations conducted in several east European countries and Egypt show that it is the female participation in organised non-agricultural activities alone that necessitates lower fertility. This is largely true of the situation in India as well and it is not unlikely that the decline of female share in non-agricultural activity has tended to increase fertility but the effect is not likely to be significant as women in organised wage employment never constituted a significant proportion of the total working force.

Several suggestions such as changes in family structure, provision of institutionalised care of children in large cities and towns, education of women upto higher levels, etc., have been put forward with a view to raising women's participation in organised employment and thus bring about a reduction in fertility. But in over-populated developing countries like India, employment opportunities are not enough even for men. In such a situation, prospects for raising women's participation in wage-employment do not seem to be bright for at least a few more decades.

APPENDIX

TABLE I—ESTIMATION OF COMPONENTS OF CHANGE IN THE WORKER RATE (WR) AND THEIR PERCENTAGE CONTRIBUTION TO TOTAL CHANGE, INDIA, 1911-61.

<i>Age Group</i>	MALES		
	<i>1911 Population</i>	<i>1961 Age-Specific WRs</i>	<i>(Figures in Thousands)</i> <i>Expected Workers in 1911</i>
A. 0-14	48500	9.41	4564
15-34	43180	88.51	38219
35-59	28872	96.97	28997
60 +	6078	76.49	4649
Total	126630	—	75429
<hr/>			
B. Population in Localities of		<i>1961 WRs</i>	<i>Expected Workers 1911</i>
20,000 or more inhabitants	7509	53.19	3994
Less than 20,000 persons	119121	58.06	69162
Total	126630	—	73156

A. Correction Ratio for Age Standardisation of the 1961 WR = Actual Workers in 1911 i.e., 79002, divided by the expected workers in 1911 i.e., 75429 = 1.047369.

B. Correction Ratio for Urban-Rural Standardisation of the 1961 WR = Actual Workers in 1911 i.e., 79002, divided by the expected workers in 1911 i.e., 73156 = 1.07991.

1. Age standardised WR in 1961 = Actual WR in 1961 i.e., 57.32 X 1.047369 ... 60.04
2. Actual WR in 1961 ... 57.32
3. Contribution of all other changes in WR, 1911-1961 (2 — 1) ... 2.72
4. Total changes in WR i.e., 1911 WR minus 1961 WR (62.39 - 57.32) ... 5.07
5. Contribution of changes in the age structure (4 — 3) ... 2.35
6. 5 as a percentage of 4 ... 46.35
7. Urban standardised WR in 1961 = Actual WR in 1961 x 1.07991 i.e.,  
57.32 x 1.07991 ... 61.90
8. Actual WR in 1961 ... 57.32
9. Contribution of all other changes to changes in WR (8 — 7) ... 4.58
10. Total change in WR i.e., 1911 WR minus 1961 WR (62.39 - 57.32) ... 5.07
11. Contribution of changes in the level of urbanization to total change in  
WR, 1911-61 = (10 - 9) ... 0.49
12. 11 as a percentage of 10 ... 9.66
13. Contribution of changes in all other factors = (4) — ( 5+ 11) ... 2.23
14. 13 as a percentage of 4 ... 43.98

NOTE : Similar calculations for females also.

TABLE 2— EMPLOYMENT TRENDS IN MAJOR GROUPS OF MANUFACTURING AND SERVICES, INDIA, 1911 TO 1961

<i>Industrial Divisions and Major Groups</i>	<i>Male Workers ('000)</i>					<i>Female Workers ('000)</i>				
	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>
Manufacturing	7398	6983	7189	9642	12944	4151	3474	3011	3119	4809
Food, Beverages, and Tobacco	767	683	757	1400	2041	1343	958	811	770	1155
Textiles and Textile Products	2780	2557	2755	3490	4106	1718	1542	1396	1505	2364
Wood and Wooden Products	1060	996	1056	1238	1578	371	296	295	378	580
Paper, Printing and Publishing	42	39	42	158	286	Neg	1	Neg	7	11
Leather and Leather Products	893	851	784	681	731	193	183	120	71	73
Rubber, Coal, Petroleum, etc.	Nil	1	2	32	70	Nil	Neg	1	2	3
Chemicals and Chemical Products	23	19	38	105	261	12	6	16	21	60
Non-Metallic Mineral Products	715	746	619	745	1083	401	362	279	248	414
Basic Metals and Their Products	576	556	574	821	1134	76	86	51	61	63
Machinery and Electrical Equipment	NC	NC	NC	167	218	NC	NC	NC	3	5
Transport Equipment	10	14	19	228	569	Neg	Neg	Neg	4	4
Miscellaneous	531	522	543	576	868	37	39	41	47	77
Services	5963	5466	6199	6843	9200	1982	1745	1853	1607	1793
Public Administration	1697	1550	1575	2153	3192	46	118*	42	78	101
Educational and Scientific	206	249	370	648	1456	21	30	47	128	338
Medical and Health	114	117	148	332	487	84	68	81	128	151

Religious and Charitable	781	660	695	403	411	163	133	107	71	31
Legal and Business	141	142	126	247	255	5	6	1	12	4
Recreational	237	160	180	223	222	82	58	41	56	24
Domestic	1461	1336	1754	1138	984	916	737	966	630	548
Laundry	611	566	592	558	656	505	468	450	392	514
Hair-Dressing	687	631	660	590	624	151	109	100	52	16
Hotel-Services	27	54	100	522	747	9	18	21	57	52
Other Services	Nil	Nil	Nil	29	167	Nil	Nil	Nil	2	14
Electricity, Gas, Water and Sanitation	364	341	329	412	470	317	288	275	220	157
Electricity, Gas, and Water Supply	7	9	17	132	245	Neg	2	2	27	9
Sanitary Services	357	332	312	280	225	316	286	273	193	148

\*Wrongly enumerated in Hyderabad State.

Neg : Negligible.

NC : No Classification.

**TABLE 3-EMPLOYMENT TRENDS IN IMPORTANT MINOR GROUPS OF MANUFACTURING, INDIA,  
1911 TO 1961**

<i>Important Minor Groups of Manufacturing</i>	<i>Male Workers ('000)</i>					<i>Female Workers ('000)</i>				
	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>	<i>1911</i>	<i>1921</i>	<i>1931</i>	<i>1951</i>	<i>1961</i>
Processing of Foodgrains	67	66	52	163	344	809	516	367	248	286
Bread and Bakery Products	142	128	102	83	60	234	189	171	37	4
Production of Vegetable Oils	316	291	320	242	220	217	191	191	74	101
Making of Nets, Ropes, Cordage etc.	79	83	NCC	NCC	106	155	107	NCC	NCC	131
Footwear and their Repair	656	619	536	491	579	152	124	75	43	47
Earthenware and Pottery Making	557	502	516	434	470	319	271	253	175	238
Cotton Textiles	1842	1593	1773	2057	2304	1107	1020	938	970	1623
Wood and Wooden Products	311	258	273	400	853	335	253	270	348	564
Butter and Other Dairy Products	3	7	NCC	63	50	3	8	NCC	61	100
Sweetmeats and Condiments	83	49	76	147	288	23	11	21	92	194
Tobacco Products	21	21	77	361	604	9	12	36	201	369
Textile Garments (Tailors mostly)	366	341	425	643	899	195	153	124	88	126
Made-up Textile Goods*	36	30	NCC	NCC	121	.49	59	NCC	NCC	254
Structural Clay Products (Bricks, Tiles etc.)	65	93	69	170	278	21	22	18	45	101

\*Except wearing apparel, nets, ropes, cordage etc.

NCC : No Comparable Classification.