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SMALL SCALE INDUSTRY ANALYSIS AND PLANNING
REPORT No. 39 (N)

DOMESTIC ELECTRICAL APPLIANCES
(Motor Type)

(NORTHERN REGION)

DEVELOPMENT COMMISSIONER
(SMALL SCALE INDUSTRIES)
MINISTRY OF COMMERCE & INDUSTRY
GOVERNMENT OF INDIA, NEW DELHI

INTRODUCTORY NOTE

The Economic Investigation Branch of the Small Industries Service Institute, New Delhi, has carried out a survey of the Domestic Electrical Appliances (Motor type) Industry in the Northern Region (comprising the States of Punjab, U.P., Delhi, Himachal Pradesh, Rajasthan and Jammu and Kashmir). Small-scale units in this region are making only electric fans and desert coolers and not any other motor type electrical appliance. There are 15 units manufacturing electric fans and 5 units making air coolers. Production of these units amounted to 10,365 electric fans and 271 air coolers during 1957.

It is estimated that the demand for electric fans in the Northern Region will increase from 1·27 lakhs in 1957 to 4·2 lakhs in 1961. There is scope for setting up two new units in Delhi with annual capacity of 4,000 fans each and one unit each at Jaipur and Kanpur with annual capacity of 3,000 fans each.

The demand for air coolers in the Northern Region is anticipated to increase at a slower rate from 271 in 1957 to about 560 in 1961. In view of the existing idle capacity in the units making air coolers, there is at present no scope for setting up new units for the manufacture of air coolers.

NEW DELHI;
December 27th, 1958.

DEVELOPMENT COMMISSIONER
(*Small Scale Industries*)

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Purpose of Survey

The survey of domestic electrical appliances (motor type) was undertaken to ascertain the present position, future outlook and problems of the small-scale units engaged in this line and to make specific recommendations for the smooth development of the industry.

Scope of Survey

There are a number of motor type domestic electrical appliances (shown in appendix I), but only electric fans and desert coolers are being manufactured in this region. Electric fans are manufactured both on small-scale as well as large-scale while air coolers are being assembled exclusively by the small-scale units. One large scale unit in this region is doing assembly-*cum*-production of room air conditioners. Besides, a few units are fabricating cabinets of domestic refrigerators and water coolers; but they have not been included in our survey. The detailed study is confined to electric fans and desert coolers; as the other motor type appliances like washing machines, vacuum cleaners etc., are being wholly imported from abroad. The quantities imported have, however, been indicated in the body of the report. Before the present restrictions were imposed the imports were very small, and not enough for starting an economic unit for their manufacture.

Method of Survey

Information and requisite data were collected from all the 15 small-scale units manufacturing electric fans and 5 units making air coolers in this region by personal visits. Besides, the two large-scale units manufacturing electric fans in the region were also visited for a comparative study. For obtaining information on consumption, demand and distribution, 9 sole distributors, 14 wholesale dealers and 11 retail dealers at the important distributing and consuming centres of the region were contacted. As the air coolers are being sold by the manufacturers directly to the consumers, information on this aspect

was also gathered from them along with the manufacturing data. Requisite statistical and other information pertaining to this industry was also collected from the Association of the Fan Manufacturers at Amritsar, District Industries Officers at Amritsar and Varanasi, the Central Excise Department and the Development Wing of the Ministry of Commerce & Industry.

Reliability of the Data Collected

It was observed that most of the small-scale units do not maintain proper accounts. Moreover, there is no legal binding on them to furnish us correct information for this type of enquiry. Therefore, the statistical data was furnished by them only verbally without referring to their records and was generally based on rough estimates. However, the data regarding output of electric fans was cross-checked with the information received from various sources. Though the data as incorporated in the report have been processed and corrected wherever found necessary yet the statistics may be taken only as estimates and not as actuals.

II—SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Industry Prospects

General Rating—Among the motor type domestic electrical appliances electric fans are rated industry 'A' *i.e.*, having excellent demand prospects. There is good scope for setting up new small-scale units at Delhi, Kanpur and Jaipur.

Air cooler (Desert-cooler) industry is rated 'B' *i.e.*, having moderate prospects. The idle capacity with the existing units can meet the future additional demand for air coolers and, therefore, there is no scope for setting up new units in the remaining years of the Second Plan period.

Demand Outlook—The consumption of electric fans during the period 1954—57 increased at an average rate of 29 per cent per annum in the country and 31 per cent in the Northern Region. In spite of the increased supply of fans there has been much unsatisfied demand. During 1958 the unsatisfied demand in the Northern Region was about 12½ per cent of the estimated demand of about 2 lakh fans.

The increasing national income in the country, changing social outlook of the people accelerated programme of electrification, large house construction programmes, and export drive for earning foreign exchange, will create future demand for electric fans. Keeping these factors in view, it is estimated that the demand for electric fans will increase roughly at the rate of 40 per cent per annum in the Northern Region and 30 per cent in the country up to 1961. Stated in terms of quantities the future demand for electric fans both for internal consumption and exports will increase from 5.2 lakhs in 1957 to about 1.5 million fans in 1961. The demand in the Northern region will increase from 1.27 lakhs in 1957 to 4.2 lakhs fans in 1961.

The consumption of air coolers during the past 4 years 1954—57 increased at an average rate of 21 per cent per annum. The future demand for air coolers is not likely to increase at as fast a rate as in the case of electric fans, because air conditioners with both cooling and heating arrangements are becoming more popular with the class of customers using air coolers. Therefore, the demand for air coolers in the Northern Region is anticipated to increase from 270 in 1957 to about 560 in 1961.

(Paras 18—38)

Competitive Outlook

Large-scale Vs. *Small-scale*—Competition as between large and small-scale manufacturers in the Northern region is confined to electric fans as the air coolers are being manufactured only on small-scale. In the case of fans the competitive position of the small-scale units is weak because quality of their products, generally speaking is poor. But due to the present unsatisfied demand, the small-scale units do not experience difficulty in marketing their products. If, however, the production in the large-scale sector increases to catch up the increasing demand in the country, the small-scale units will have to either go out of the market or improve the quality of their fans considerably.

(*Paras* 39-40)

Northern Region Vs. *Other regions*—In spite of the fact that the Northern region offers better market for fans, all the large-scale units excepting two are located at Calcutta and Bombay. This is because of the early start of the industry at these places. The prices of iron and steel are uniform at all rail heads in India but the transportation and packing charges being quite substantial in case of fans, the producers in the Northern Region have the advantage of being nearer to the consumer. The labour costs are also probably lower in the Northern region.

(*Para* 41)

Competition from Substitutes—With the introduction of electric power the traditional manually operated fans (pankhas) though substitutes for electric fans are fast losing their competitive position. People who can afford, now prefer electric fans.

The *khas* blinds are still widely used as cooling devices in the region; but the electrically operated coolers are gradually becoming popular in Delhi with people in higher income groups. Ordinarily the popularity of air coolers should adversely affect the demand for electric fans; but since the demand for air coolers arises only from a small section of the society, the total demand for electric fans will not be affected.

(*Paras* 44-45)

Employment Outlook

It is envisaged that there is scope for setting up 4 new units with an annual capacity of 14,000 fans in the Northern Region at Delhi, Kanpur and Jaipur. The additional employment created in these units estimated on the basis of the existing employment-output ratio (352 workers producing 10,400 fans) in the existing small-scale units, will be 466 workers.

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The employment in the units manufacturing air coolers will increase from 86 in 1957 to 152 in 1961 if the production as envisaged also increased from 270 in 1957 to 560 coolers in 1961.

(*Paras* 65-66)

New Opportunities for Small Businessmen

The unsatisfied demand for electric fans in the market calls for increased production. The small businessmen can avail of this opportunity and take up the production of fans. There is scope for setting up two new units at Delhi with annual capacity of 4,000 fans each and one unit at Jaipur and Kanpur with annual capacity of 3,000 fans each. The units at Jaipur and Kanpur may preferably concentrate on the manufacture of table fans.

(*Para* 79)

Problems and Recommendations

1. *Raw Materials*—The cost of imported raw materials such as insulating articles, winding wire and resistance wire constitute nearly 20 per cent of production cost of a fan made by the small-scale units in the Northern Region. Due to import restrictions these articles have become scarce and their prices have also shot up. The small-scale units are experiencing difficulties in procuring these materials at reasonable prices. It is, therefore, suggested that the units at Varanasi and Amritsar may jointly import their requirements of raw materials as actual users. The concerned State Directors of Industries may assist these units in this matter.

(*Paras* 59-60)

2. *Quality*—Due to brisk demand for electric fans at present and the consequent ready saleability of the products without regard to quality most of the small scale units do not adhere to the specifications laid down by the Indian Standards Institution. But when the supply position becomes easy such units might be thrown out of the market because of inferior quality of their products. It is, therefore, suggested that the small-scale units in their own interest should make every endeavour to improve the quality so long as the sellers' market exists. Every fan produced by them should be tested before it is sent to the market. For this purpose all units should make arrangements to have proper testing equipment in their workshops. The Small Industries Service Institutes at Delhi, Ludhiana and Kanpur should assist the small-scale units in this matter.

(*Para* 61)

Financial Requirements

3. *Fixed Capital*—The existing small-scale units manufacturing electric fans are too inadequately equipped. Though it is not possible to indicate the amount of capital that would be required by the units for additional machines or for replacing the old machinery, yet the need of the small-scale units for better and additional machinery is imperative. It is, therefore, recommended that they, with the help of Small Industries Service Institutes (Delhi, Ludhiana and Kanpur) should immediately draw up programmes of rationalization and procure the needed machinery from the National Small Industries Corporation on hire-purchase basis.

(*Paras* 67-68)

4. *Working Capital*—Out of 15 small scale units in the region 12 have indicated their requirements of additional working capital for expanding their production as well as for marketing functions. In view of the excellent demand prospects for electric fans, the State Bank of India may extend credit facilities to this industry at Varanasi, Amritsar, Goraya, Patiala and Ludhiana under its Pilot Project Scheme for extending credit facilities to the small-scale industries.

(*Paras* 69—71)

5. *Management*—The most pressing problem of managements is their deteriorating relations with labour. Besides, some of the small-scale units find it difficult to maintain proper accounts as prescribed under the Central Excise rules. The Business Management Section of the Small Industries Service Institutes, Delhi, Kanpur and Ludhiana may help in providing guidance to the units in respect of their dealings with labour and maintaining proper accounts.

(*Para* 73)

6. *Organisation*—At Amritsar there already exists an association of fan manufacturers whereas at Varanasi no such association has so far been formed. The units at Varanasi are advised to form themselves into an association in order to assist each other in solving their common problems. The units at Goraya, Ludhiana and Patiala in the Punjab may join the association at Amritsar. The State Directors of Industries, U.P. and Punjab may help in formation of these associations and as far as possible ensure that the associations are consulted in all matters relating to Government assistance to the industry.

(*Paras* 74-75)

7. *Taxes*—Electric fans are subject to the Central Excise duty at the rate of Rs. 10 per ceiling fan and Rs. 5 per table

fan. There were no complaints about the incidence of the duty but the cumbersome and time-consuming formalities of depositing tax money in treasuries and delay in getting the stocks released are causing much hardships to the small-scale manufacturers. The Central Board of Revenue may, therefore, consider the possibility of authorising their inspecting staff to collect the amount of duty from the manufacturers on the spot or adopting other simpler collection procedures, *e.g.*, deposit in post offices or State Bank of India offices.

(*Para* 77)

III—INDUSTRY TRENDS & STATISTICAL SUMMARY

Growth of the Industry

It was in 1924 that the first unit namely M/s India Electric Works Ltd., Calcutta started manufacturing electric fans in India. The success of this pioneering company encouraged others to enter the field. The first unit in the Northern Region was set up at Amritsar in 1942 on a small-scale basis. During Second World War, due to heavy decline in imports, the indigenous industry expanded. A number of units were started in Lahore and Rawalpindi now falling in West Pakistan. With the partition of the country, Hindu and Sikh entrepreneurs migrated to India and set up the units at Amritsar, Patiala, Ludhiana, Goraya and Delhi. Of all the centres in Punjab, Amritsar has become the most important. There are 7 units at this place as against one each at the other places in Punjab. Varanasi in U.P. is the other important centre where the manufacture of electric fans has developed on small-scale. There are 4 small-scale units working in Varanasi at present. In all, there are 15 small-scale units in the Northern Region with annual manufacturing capacity of 27,300 fans.

2. The first large-scale unit in the Northern Region for the manufacturing of electric fans was set up in 1947 at Delhi and another unit started working at Rampur in 1954. There are only two large-scale fan manufacturing units in the Northern Region as against 19 in the whole of India. The production capacity of these two units is 35,500 fans per annum as against 425,000 fans in all the 19 large-scale units.

3. A few small-scale units were, till recently, manufacturing electric fans at Bareilly, Lucknow, Gurdaspur, Jullundur, Ferozepur and Delhi. But these units have ceased producing fans due to various reasons such as lack of finances, diverting production to other lines and levy of central excise duty.

4. Air coolers generally known as desert coolers began to be manufactured in Delhi during 1942. There are four units manufacturing air-coolers in Delhi at present and all of them are working on a small-scale basis. Outside Delhi there is only one unit in the Northern Region, located at Jullundur. This unit took up the manufacture of air coolers in 1957 as a part of its other manufacturing activities.

Industry Statistics

(*a*) *Number of Units.*—5. There are 15 small-scale and 2 large-scale units manufacturing electric fans and 5 small-scale units manufacturing air coolers in the Northern Region (given in appendix II). The number of units located at various places is given in table I.

TABLE I

Number of units manufacturing Electric fans and Air coolers in Northern Region—1957

State	Centre	No. of units			Remarks
		Small scale	Large scale	Total	
		(*i*) *Electric Fans*			
Delhi ..	Delhi ..	1	1	2	
U.P. ..	Varanasi ..	4	—	4	
	Kanpur ..	—	1	1	
Punjab	Amritsar ..	7	—	7	
	Goraya ..	1	—	1	
	Patiala ..	1	—	1	
	Ludhiana ..	1	—	1	
	TOTAL ..	15	2	17	
		(*ii*) *Air Coolers*			
Delhi ..	Delhi ..	4	—	4	
Punjab	Jullundur ..	1	—	1	
	TOTAL ..	5	—	5	
	GRAND TOTAL ..	20	2	22	

SOURCE : Field investigations.

6. It will be seen from table I that Amritsar is the most important centre where 7 out of a total of 15 small-scale units in the region manufacturing electric fans are located. Next in importance comes Varanasi in U.P. where 4 units are working. The remaining 4 units are scattered at other centres of the Punjab and Delhi. Out of 5 units manufacturing air coolers 4 are located in Delhi and one is working in Jullundur.

(*b*) *Employment*—7. Average daily employment in electric fans and air coolers manufacturing units was 352 and 86 respectively during 1957. Details of the employment in different units located at various centres is given in table II.

TABLE II

Employment in Small-scale units manufacturing Domestic Electrical Appliances (Motor type)—Northern Region—1957

State	Centre	No. of units employing workers between				Total No. of workers employed in the units	Remarks
		1—5	6—10	11—20	21—50		
				(*i*) *Electric Fans*			
Delhi ..	Delhi ..	—	—	—	1	48	
U.P. ..	Varanasi	1	2	—	1	62	
Punjab	Amritsar	2	1	—	4*	191	
	Goraya	—	1	—	—	7	
	Ludhiana	—	—	1	—	12	
	Patiala .	—	—	—	1	32	
	TOTAL	3	4	1	7	352	
				(*ii*) *Air Coolers*			
Delhi ..	Delhi ..	1	—	1	2	79	
Punjab	Jullundur	—	1	—	—	7	
	TOTAL ..	1	1	1	2	86	
GRAND TOTAL ..		4	5	2	9	438	

SOURCE : Field investigations.

*Employment in one of these units is 58 workers but as the investment is less than Rs. 5 lakhs it is taken as small-scale unit.

Capacity and Production

8. The installed capacity during 1957, in the small-scale units as ascertained during field investigations was reported to be 27,300 electric fans as against 35,500 in large scale units. The installed capacity for air coolers in this region is 910. Actual production during the same year of 1957 was 10,365 fans and 217 air coolers in small-scale units and 20,564 electric fans in large-scale sector. Detailed statistics relating to capacity and production are given in table III.

TABLE III

Capacity and production of units manufacturing Electric fans and Air coolers—Northern Region (1957)

State	Centres	No. of units	Installed capacity (Nos.)	Production		Remarks
				Quantity (Nos.)	Value (Rs. '000)	
			(*i*) *Electric Fans*			
			(*a*) **Small-scale Units**			
Delhi ..	Delhi ..	1	3,500	450	69·50	
U.P. ..	Varanasi	4	6,200	3,138	222·28	
Punjab	Amritsar	7	12,300	5,227	493·56	
	Goraya ..	1	500	180	23·27	
	Patiala ..	1	3,000	1,261	112·60	
	Ludhiana	1	1,800	109	12·53	
	TOTAL ..	15	27,300	10,365	933·74	
			(*b*) **Large-scale Units**			
Delhi ..	Delhi ..	1	25,500	19,100	3122·46	
U.P. ..	Rampur ..	1	10,000	1,464	192·30	
	TOTAL .	2	35,500	20,564	3314·76	
			(*ii*) *Air Coolers*			
			(*a*) **Small-scale Units**			
Delhi ..	Delhi ..	4	550	246	333·20	
Punjab	Jullundur	1	360	25	9·90	
	TOTAL ..	5	910	271	343·10	

SOURCE : (*i*) Field investigations.
(*ii*) Development wing for large-scale units.

9. It will appear from the above table that about 38 per cent of the installed capacity is being utilized in the small-scale units manufacturing electric fans. This wide gap between the capacity and actual production is probably explained by the fact that the capacity stated by some of the units is exaggerated. Lack of proper management, irregular supply of raw materials and non-availability of adequate working capital are some of the other factors responsible for the unutilized capacity in the units.

10. Among the large-scale units the one at Delhi produced during 1957 about 75 per cent and that at Rampur only about 15 per cent of the installed capacity. The main reason for so much short fall in the Rampur unit was said to be their having taken up the production of fans very recently. They had not gone into full swing at the time the information was collected.

11. As regards air coolers, hardly 30 per cent of the installed capacity was utilized in 1957. The actual production in Delhi units was about 40 per cent of the installed capacity but in the unit at Jullundur only 25 air coolers were manufactured as against the capacity of 360. The output of the Jullundur unit was less because the production of air coolers was started recently and only as a side line.

Trends in Production

12. As will appear from table IV, the production of electric fans in the small-scale units in this region increased from 4,307 in 1954 to 10,356 in 1957 and that of air coolers from 154 in 1954 to 270 during 1957.

TABLE IV

Trends in production of Domestic Electrical Appliances (Motor type) in the Small-scale units—Northern Region—1954—57

(in number)

State	Centre	No. of units (1957)	Production				Remarks
			1954	1955	1956	1957	
			(*i*) *Electric fans*				
Delhi ..	Delhi ..	1	500	850	450	450	
U.P. ..	Varanasi	4	1,695	1,606	2,895	3,138	
Punjab	Amritsar	7	2,112	2,943	5,076	5,227	
	Goraya ..	1	—	83	162	180	
	Patiala ..	1	—	—	1,656	1,261	
	Ludhiana	1	—	—	57	109	
	TOTAL ..	15	4,307	5,482	10,296	10,365	
			(*ii*) *Air Coolers*				
Delhi ..	Delhi ..	4	152	178	213	245	
Punjab	Jullundur	1	—	—	—	25	
	TOTAL ..	5	152	178	213	270	

SOURCE : Field investigations.

13. The production of electric fans in the 19 large-scale units in the country which are registered with the Development Wing under the Industries Development and Regulation Act, 1951, has also been increasing substantially from year to year as will appear from the following figures :

TABLE V

Trends in production of Electric fans in the Large-scale units

Year	Production (Nos.)
1954	238,800
1955	282,000
1956	338,932
1957	524,664

SOURCE : Monthly Statistics of the production of selected industries of India (Published by the Director of Industrial Statistics, Government of India).

Investment

14. Almost all the small-scale units are located in rented premises and, therefore, their own investment in land and buildings is relatively negligible; but in order to indicate the total investment in these units the value of land and buildings has been capitalised at 6 per cent of the annual rent paid by the units. The major portion of fixed investment in the small-scale units manufacturing electric fans is in the form of plant and machinery which forms about 20 per cent of the total investment. Working capital accounts for a little over 61 per cent of the total investment. The break-up of the investment is given in table VI.

TABLE VI

Investment in the Small-scale units manufacturing Domestic Electrical Appliances (Motor type)—Northern Region—1957

(Rs. '000)

State	Centre	No. of units	Fixed capital			Working capital	Total capital investment
			Land & Bldg.	Plant & Machinery*	Total		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(i) Electric fans				
Delhi ..	Delhi ..	1	25·00	20·00	45·00	50·00	95·00
U.P. ..	Varanasi	4	39·30	40·50	79·80	68·50	148·30
Punjab	Amritsar	7	137·40	145·56	282·96	486·60	769·56
	Goraya	1	10·00	14·50	24·50	10·00	34·50
	Patiala ..	1	20·00	32·00	52·00	175·00	227·00
	Ludhiana	1	15·00	11·60	26·60	7·00	33·60
	TOTAL ..	15	246·70	264·16	510·86	797·10	1,307·96

TABLE VI—Contd.

(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
			(ii) Air Coolers				
Delhi ..	Delhi ..	4	73·60	69·00	142·6	131·0	273·6
Punjab	Jullundur	1	8·00	15·00	23·0	25·0	48·0
	TOTAL ..	5	81·60	84·00	165·6	156·0	321·6

SOURCE : Field investigations.

*The capital invested in plant and machinery is the market value as stated by the manufacturers.

15. It will be seen from the above table that investment on fixed capital is 39 per cent of the total capital invested by the small scale units manufacturing electric fans while in the units manufacturing air coolers, investment on fixed capital is 51 per cent of the total capital invested.

16. It will also be observed from table VI that in the small-scale units manufacturing electric fans average investment (including capitalised value of land and buildings) per unit works out to Rs. 87,190 and fixed investment amounts to Rs. 34,060. The units at Goraya, Ludhiana and Varanasi are much below this average. Similarly in the units manufacturing air coolers, average investment comes to Rs. 64,320 per unit and fixed investment at Rs. 33,120. This goes to show that in this industry comparatively large amount of working capital is required. This is because of the seasonal demand of the products. The break-up of investment in the two large-scale units in the region is given in table VII.

TABLE VII

Break-up of investment in Large-scale units manufacturing Electric fans in the Northern Region—1957

(Rs. lakhs).

State	Centre	No. of units	Fixed capital			Working capital	Total capital investment
			Site & Bldg.	Plant & machinery	Total		
Delhi ..	Delhi ..	1	3·36	4·71	8·07	20·07	28·14
U.P. ..	Rampur	1	1·63	3·53	5·16	2·95	8·11
	TOTAL ..	2	4·99	8·24	13·23	23·02	36·25

SOURCE: Field investigations.

17. It will appear from the above figures that fixed capital in large-scale units accounts for about 37 per cent of the total investment and the rest 63 per cent is working capital.

IV—DEMAND AND COMPETITIVE OUTLOOK

Demand

18. *Consumption Trends*—The demand for electric fans and air coolers arises from individual consumers for domestic use, industrial and commercial establishment, Government offices and public undertakings. It has not been possible to estimate the consumption of these appliances by each source separately in this region. However, for estimating the total consumption of electric fans and air coolers in the country as well as in the Northern region, the usual method of indigenous production *plus* imports *minus* exports has been applied.

19. *Electric fans*—There are 19 large-scale units in India, including the 2 units in this region, which manufacture electric fans. Besides, fans are being manufactured by a large number of small-scale units. The production figures of the small-scale units are, however, available only for the Northern region. Therefore, the production figures of the large-scale units in the country *plus* those of the small scale units in the Northern Region could only be taken into account, in working out the all-India trends in consumption. The statistics of imports maintained before 1957 do not indicate separately the number of complete fans imported but have been accounted for under 'Electric fans and parts thereof' and that too, in value only. However, from the import figures of 1957, it has been worked out that 60 per cent of the total value of imports constituted parts of electric fans and 40 per cent imports of complete electric fans. In order to arrive at the import figures of complete electric fans during the years prior to 1957 it has been assumed that the percentage of imports of complete electric fans and parts thereof was the same at that in 1957. For converting the value figures of imports into quantities, the average c.i.f. price at Rs. 116 per electric fan during 1957 has been reckoned as the c.i.f. price of fans during the previous years also. On this basis the

consumption trends of electric fans in the country during the last four years from 1954 to 1957 are given in table VIII.

TABLE VIII

Consumption trends of Electric fans in India—1954—57

(in number)

Year	Indigenous poduction	Imports*	Exports	Net consumption in India (2+3—4)	Percentage increase in consumption over the preceding year
(1)	(2)	(3)	(4)	(5)	(6)
1954	243,107	4,415	10,869	236,653	—
1955	287,482	7,092	16,456	278,118	15
1956	349,228	8,705	11,532	346,401	20
1957	535,020	2,807	15,760	522,067	51

SOURCE: *Col.* 2 : Indigenous production figures have been arrived at by adding the figures for organised units given in the Monthly statistics of production of selected industries of India, to the figures of production in small-scale units of the Northern region. These figures exclude production of small-scale units in other regions of the country.

Col. 3 & 4 : Accounts relating to Foreign (Sea, Air and Land borne) Trade of India.

*The import figures have been converted into quantity according to the method explained in para 19.

20. It will be seen from table VIII that consumption of electric fans in India increased by 15 per cent, 20 per cent and 51 per cent during 1955, 1956 and 1957 respectively over the preceding year the average rate of increase being 29 per cent per annum.

21. The trends in consumption of electric fans in the Northern region have been calculated on the basis of sales of the brands manufactured by the large-scale units in the country as effected through the sole distributors, *plus* the number of fans produced by the small-scale units which are mostly consumed within the region. Further it was learnt from dealers that 40 per cent of the imports of fans have been consumed in the Northern Region. For working out the consumption trends this share of imports in this region has also been taken into account as follows :

TABLE IX

Consumption trends of Electric fans in Northern Region—1954—57

(in number)

Year	Production in small scale units within the region	Sale of large scale units through sole distributors in Northern region	Imports	Consumption in the Northern Region (2+3+4)	Percentage increase in in consumption over the previous year
(1)	(2)	(3)	(4)	(5)	(6)
1954	4,307	39,700	1,766	45,773	—
1955	5,482	50,600	2,837	58,919	29
1956	10,296	77,100	3,482	90,878	35
1957	10,356	115,600	1,123	127,079	28

SOURCE : Field investigations.

22. It will appear from table IX that the increase in consumption of electric fans in the Northern Region has been at the rate of 29%, 35% and 28% during 1955, 1956 and 1957 respectively over the preceding year, the average annual rate of increase being 31 per cent.

23. It may be pointed out that consumption trends as worked out from the production figures and sales do not reveal the true picture of demand for electric fans in the Northern Region. It was learnt from the dealers and sole distributors of fans that there was plenty of unsatisfied demand especially of ceiling fans of 48" sweep in Delhi and table fans of 16" sweep in U.P. and Rajasthan. If there had been more supplies of these types of fans, the consumption figures would have been higher than indicated in table IX.

24. *Air Coolers*—It was ascertained from the manufacturers of air coolers that their entire production is being consumed within the region. There is no import or export of the types of coolers produced. Therefore, the production trends may be taken as indicative of the consumption trends of air coolers in the Northern region. The production figures as given in table IV indicate that consumption of air coolers has been

continuously increasing from year to year. There was an increase of 17%, 20% and 27% in 1955, 1956 and 1957 respectively over the preceding year with an average increase of about 21 per cent per annum.

25. The demand for air coolers is at present mostly confined to Delhi but the manufacturers are making efforts to expand their markets to other places in the region particularly at the State capitals.

26. *Domestic Refrigerators*—The consumption trends of domestic refrigerators for the country as made up of indigenous production *plus* imports are given in table X. It has not been possible to ascertain the consumption of domestic refrigerators separately for the Northern Region.

TABLE X

Consumption trends of Domestic refrigerators in India—954—57

Year	Indigenous production	Imports	Total comsumption in India (2+3)
(1)	(2)	(3)	(4)
1954	1,008	5,613	6,621
1955	528	6,643	7,171
1956	756	7,438	8,194
1957	942	3,055	3,997

SOURCE : (*i*) Monthly Statistics of the production of selected industries of India.
(*ii*) Accounts relating to foreign trade (Sea, Air and Land Borne) of India.

27. It would appear from table X that consumption of domestic refrigerators was on the increase up to 1956 but during 1957 there was a sharp decline owing primarily to the fall in imports. Had no restrictions been imposed on imports there would have been much more consumption of domestic refrigerators in the country than indicated in Table X. The indigenous production has not been able to fill the gap created by the restriction on imports.

28. *Room Air-conditioners*—There were only 8 units manufacturing room air-conditioners in the country in 1957 and one of these units is located in the Northern Region. All these units are organised on large-scale basis. The production of air-conditioners increased from 5,824 units in 1956 to 6,983 in 1957. The production in one unit located in this region

increased from 556 air-conditioners in 1956 to 1,056 air-conditioners in 1957. The import figures for room air-conditioners are available separately for 1957 only under the heading of 'air-conditioning machinery'. During that year 4,066 air-conditioners were imported. The consumption of air conditioners in the country during 1957 may, therefore, be taken as indigenous production of 6,983 units *plus* the imports of 4,066 units making a total of 11,049 units. From July, 1957 onward the import of room air-conditioners has been completely banned

29. The other motor type appliances like vacuum cleaners' washing machines etc. are not yet being manufactured in the Northern Region. Therefore, the consumption of these appliances is wholly from imports. A separate account of the imports of these appliances was not maintained before January, 1957 and, therefore, it is not possible to present their consumption trends. The import of these appliances in 1957, was 487 'vacuum cleaners' valued at Rs. 288,336 and 309 washing machines valued at Rs. 4,40,849.

Factors Governing Demand

30. The demand for domestic electrical appliances (motor type) is influenced by a variety of factors both economic and social. Hot climate is, however, the basic cause necessitating the use of air circulation and cooling devices. The increasing supply of electricity in the country will definitely create more demand for electric appliances. Another factor governing the demand for the appliances is the rising living standard of the people. The economic prosperity resulting from the implementation of the Second Plan and shift from lower to higher income groups will increase the demand. People are also becoming more and more electricity minded. The availability of service-after-sales facilities also influences demand, especially for air coolers. The export promotion drive and various facilities being offered by the Government in this connection would also create additional demand for the appliances.

31. The lower income groups in India cannot as yet afford to own fans. The higher income groups especially in Delhi are shifting from air-circulating to air-cooling and air-conditioning. It is really the middle classes who form the bulk of the customers for electric fans. The purchases made by the Union and State Governments for use in their offices and staff quarters also is an important factor influencing the demand.

32. The demand in different towns varies according to intensity of various above described factors operating there. Further the huge construction activities and increased tempo

* SOURCE : Monthly Statistics of Foreign Trade of India—December, 1957.

of economic development at Delhi, Kanpur, Lucknow, Jaipur, Chandigarh, Ludhiana, Jullundur, Amritsar and Patiala are the important reasons for the large demand arising at these places. Again the comparatively higher demand at Delhi is due to the higher industrial and commercial development, and expansion of Governmental organisation. The demand for air coolers is mostly confined to Delhi mainly because of the presence of a large number of Government officials eligible for air-cooling amenities, foreign people from cold countries, and larger number of wealthy people living in Delhi than elsewhere in the region. The comparatively cheap electricity tariff is also one of the considerations creating local demand. The electricity tariff in Delhi is only 20 Naya Paisa per unit as against 30 N.P. and above at other places and that accounts for the relatively higher demand for electrically operated appliances in Delhi.

33. Apart from the above mentioned factors the demand in a particular area or during any season is also influenced by other transitory causes. Conversion from D.C. to A.C. system of electricity which is being affected at Delhi and Lucknow has created more demand for A.C. fans. Better sales organisation, ready stock and preference for popular brands due to better service and lower consumption of electricity in their running and easy terms of payments, are some of the other factors influencing the demand for fans.

Estimation of Future Demand

34. The principal factors which govern the demand for electric fans, air coolers and other motor type domestic electrical appliances have been enumerated and discussed in the above paragraphs. It has not, however, been possible to assess the impact of these factors on the future demand for appliances. For electric fans the Development Council for Light Electrical Industries had estimated in 1954 that the demand for electric fans might be of the order of 4·5 lakhs per year by 1960-61. It may be mentioned that the actual production during 1957 was more than 5·35 lakh fans and still there was much unsatisfied demand. Therefore, the estimate of the Council obviously seems to be considerably on the low side. The Planning Commission also considered this calculation to be an under-estimate and they have placed the internal demand between 5·0 to 5·5 lakh fans per annum by the end of the Second Five-Year Plan. The Planning Commission further envisaged that due to the liberalised terms of claiming drawbacks of import duty on raw material used for the manufacture of fans meant for exports, there appeared good prospects of increasing the exports of electric

fans from 15,760 in 1957 to about 50,000 fans per annum by 1961. The total requirements of electric fans both for internal consumption and exports abroad were, therefore, estimated by the Planning Commission at 5·50 to 6·00 lakhs per annum by 1960-61.

35. The consumption trends of fans as presented in tables VIII and IX reveal that the consumption of electric fans increased during the period 1954—57 at an average rate of 29 per cent per annum in the country and 31 per cent in the Northern Region. The market enquiries in the Northern Region indicate that since 1956 there has been much shortage of fans and large number of prospective buyers could not buy them. During the current year of 1958 the demand in the Northern Region, according to the estimates of the distributors, was about 2 lakh fans whereas the supply received in the market was only 1·75 lakhs. Thus there was an unsatisfied demand to the extent of about 25,000 fans, *i.e.*, by 12 per cent in this region.

36. The Planning Commission has estimated an increase in national income by 25 per cent at the end of the Second Five-Year Plan as against only 15 per cent in First Five-Year Plan. The increase in national income is expected to be reflected in the earnings of various income groups, thus making more and more people comfort minded. The accelerated programme of electrification of the countryside and urban areas will also create more customers for electric fans. The huge programme of house construction envisaged during rest of Second Plan period both private and public—will lead to increased demand for electric fans. The import of electric fans—both table, ceiling and parts thereof have been completely stopped since the licensing period of October, 1957. This will also give greater fillip to the demand for indigenously produced fans. Besides, the exports of electric fans as shown in table VIII have been continuously increasing from year to year. There was an increase of about 49 per cent in the exports during 1957 over that of 1954. The Export Promotion Council for engineering goods is assisting intending exporters and Government is offering various incentives for the export of fans. The simplified and liberalised rules allowing the drawbacks of customs duty paid on the imports of raw materials in the manufacture of fans meant for exports are also likely to further increase exports. Taking all these factors into consideration it is estimated that the demand for electric fans will increase roughly at the rate of 40 per cent per annum in the Northern region and 30 per cent in the country up to 1961. Converted in terms of quantity the future demand for electric fans both for domestic consumption and exports, is expected to increase from 5·2 lakhs in 1957 to about

1·5 million fans in 1961. The demand in the Northern region will increase from 1·27 lakhs in 1957 to 4·2 lakhs fans in 1961.

37. *Air Coolers*—Market enquiries indicate that the demand for air coolers will not increase in future at as fast a rate as in the case of electric fans. Because there is now a tendency among the class of people using air coolers to prefer room air conditioners as they have the double advantage of cooling as well as heating. However, if the past rate of growth in consumption of air coolers is maintained, which was on an average 21 per cent during the last 4 years of 1954—57, the future demand for air coolers will not be more than 560 in 1961.

38. We have not attempted to estimate the future demand for room air conditioners and domestic refrigerators, as they are not suited to small-scale production. As for other appliances, like washing machines, vacuum cleaners, etc., their consumption in the country is wholly made up of imports from abroad. The figures of imports (as given in para 29) are available for 1957 only when imports of these appliances were allowed on a restricted basis. It is, however, learnt that demand in the years when there were no restrictions, was also very small; and not much increase in demand is expected in future.

Competition

39. *Large-scale* Vs. *Small-scale*—Competition as between large and small-scale manufacturers in the Northern region is confined only to electric fans as the air coolers are being manufactured only on small-scale. It is ascertained from the market that consumers generally prefer to purchase fans of well reputed brands which are mostly the products of large-scale units. This preference is explained by the fact that the consumer is generally particular to possess such brand which is known to be durable, has efficient performance and consumes less of electricity. The products of the large-scale units with brands Crompton, Behala, Usha, Orient and Kassels are considered to contain all the above qualities while fans of most of the small scale units in this region are reported to consume more electricity and begin to show defects in performance after they have been in use for some time.

40. One small-scale unit at Varanasi is making small size 10" table and pedestal fans under the brand name 'Cini'. This brand has gained good reputation in the market and there is demand for it. As in many parts of Delhi and Lucknow the electric current is D.C. and 'Cini' fan is made to work on both

A.C./D.C currents, this also explains the popularity of the brand. This brand, it was noticed, is preferred by small shopkeepers because it is easily portable and comparatively less costly. Fans manufactured by a few other small-scale units at Amritsar and Patiala are also quite satisfactory in performance and shape but their market is mostly local. The competitive position of the small-scale units is weak; because the quality of their products, generally speaking, is poor; but due to unsatisfied demand the small-scale units do not, at present, experience much difficulty in marketing their products. If, however, the production in the large-scale sector increases in future to catch up the increasing demand in the country, the small-scale units will have to go out of the market, or improve the quality of their fans considerably.

Northern Region Vs. Other Regions

41. Out of 19 large-scale units only two are working in the Northern region, 11 in West Bengal (Calcutta), and 4 in Bombay. The Northern region offers comparatively better market for fans but due perhaps to the early start in Calcutta, the industry is concentrated there. The transportation and packing charges being quite substantial in case of fans, the producers in the Northern region have competitive advantage of being nearer to the consumers. The labour costs are also probably lower in the Northern region.

Competition Among States Within the Region

42. As regards the location of units within the region Punjab stands at the top. Out of 15 small-scale units working in the region, 10 are located in Punjab, 4 in U.P. and only one in Delhi. The location of the units in the Northern region does not seem to have been much influenced by comparative advantages but the units have been started at different places mainly because the manufacturers happened to be living there. The manufacture of air coolers is concentrated in Delhi with 4 out of 5 units due mainly to the nearness of market.

43. In so far as marketing of the fans is concerned, Delhi is the biggest distributing centre in the Northern region, followed next by Kanpur in U.P. and Jaipur in Rajasthan. The predominating position of Delhi is probably due to the presence of more resourceful dealers, who can afford to invest in maintaining larger stocks of the fans available in their godowns ready for immediate delivery. The retail dealers at small places in the neighbouring areas purchase their requirements in small lots from Delhi rather than directly from the manufacturers. This has made Delhi the biggest distributing market for electric fans.

Competition from Substitutes

44. Hand fans (pankhas) were and are used universally wherever there is no electricity. With the coming of electricity, people who can afford them prefer electrically operated fans. Thus the traditional pankhas though substitute for electric fans, are fast losing their competitive position.

45. The *Khas taties* are still widely used as cooling device in the region but the electrically operated coolers are gradually becoming popular in Delhi with the people in higher income groups. The popularity of air coolers will adversely affect the demand for electric fans but since the demand for air coolers arises from a very small section of the society the total demand for electric fans will not be affected.

V—DISTRIBUTION AND MARKETING FACTORS

Trade Channels

46. *Electric Fans*—As the demand for electric fans in this region is much more than the actual supply, a seller's market prevails for this commodity. While the organised small-scale units sell their products through their sole distributors, the other small and cottage units sell both through local dealers and directly to consumers as their market is generally local. The Government purchases are made directly from the manufacturers.

47. *Air Coolers*—Most of the air cooler manufacturers have their own sales sections and do not engage any intermediaries. A few of the cottage type workers are making air coolers either on order from the consumers or the contractors who secure orders for supply to the Government departments.

48. *Pricing policies and practices*—The manufacturers, both large-scale and small-scale, have fixed maximum retail prices of their brands to which is also added a Central Excise duty of Rs. 10 on each ceiling fan and Rs. 5 per table fan. The small-scale units allow a discount to their distributors generally varying from 15 per cent to 20 per cent over the list prices. The discount is shared by the three parties, *viz.*, distributors, wholesale dealers and retailers according to the bargaining capacity of each. Generally the distributors retain about 2½ per cent, wholesale dealers another 2½ per cent to 5 per cent, and the rest goes to retailers who also bear the cartage charges from Railway Station to their godowns, municipal octroi duties and storage expenses. The retail dealers also sometimes allow a discount to the customers so as to overcome the consumers' preference for the brands of the well-known large-scale units. The rate of such discount varies within 5 per cent of the list price depending upon the competition in the market. Local sales tax is charged extra over the sale price.

49. *Distribution cost and Mark-ups*—The distribution costs of the manufacturers consist of advertisement, packing, transportation, service-after-sale facilities, and interest on inventory carry over during the offseason. The dealers spend on cartage, municipal octroi duty, shop establishment, installation services and interest on investment. The dealers' expenses and profits are covered by the discount allowed by the manufacturers.

These charges have already been taken into account while the prices were being fixed by the manufacturers.

50. In case of local deliveries the units have to spend only a negligible amount on packing and transportation. Most of the small-scale units have local sales. The packing charges for out-stations for ceiling and table fans come to about Rs. 2-8-0 and Rs. 2 per fan respectively. The railway freight varies according to the distance of the destination. The small-scale units generally do not offer service-after-sale facilities in the distant markets, but do provide such service to the local customers. As the percentage of defects detected in the fans sold is claimed to be less than 5, no separate staff is engaged for this purpose and factory employees are drafted for this work whenever required. Demand for the fans being seasonal, the interest on inventory carry over for the six months of winter constitutes a substantial portion of distribution costs. The interest charges alone, on a ceiling fan costing Rs. 150 on the basis of 5 months carry over at the rate of 10 per cent per annum, come to Rs. 6·25 N.P. Total distribution cost (excluding interest charge and manufacturing cost) up to Delhi market for a ceiling fan produced at Amritsar as incurred by a manufacturer works out to nearly Rs. 6·60 N.P.

Working Capital Requirements for Marketing Functions

51. The requirements of working capital for marketing functions to a small-scale unit—say at Amritsar making 2,000 fans per year on f.o.r. deliveries to Delhi assuming that the unit has generally to carry over an inventory of 800 fans for period ranging from 2 to 8 months, will be Rs. 1,35,000 as under : —

	Rs.
1. Working capital for making 800 fans @ Rs. 150 per fan ..	1,20,000
2. Interest charges on working capital required for inventroy for 800 fans on an average	5,000
3. Godown rent and salary of chowkidar @ Rs. 100 per month for 12 months	1,200
4. Packing charges of about 1,500 fans (leaving a margin of 500 fans for local sale where packing is not necessary) at Rs. 2·50 N.P. per fan	3,750
5. Cartage from godown to Railway Station @ Re. 0·25 N. P. per fan for 1,500 fans	375
6. Railway freight in Goods Train @ Rs. 2·25 N.P. per fan for 1,500 fans	3,375
7. Miscellaneous	1,500
TOTAL ..	1,35,200
or say ..	1,35,000

VI—PRODUCTION ASPECTS

Plant and Equipment Requirements

52. The equipment and machinery required for the manufacture of electric fans are: lathes, drilling machines, coil winding machine, grinders, presses, an hacksaw and an air-compresser, welding equipment, baking oven, cupola or casting crucibles, jigs, dies and tools, testing equipment, etc. etc. According to the model scheme prepared by the Small Industries Service Institute, New Delhi, the machinery with complete testing equipment and tools in a unit with a capacity of 4,800 fans per annum will approximately cost Rs. 2,00,000. If the covers, body and rotors are die-casted, the die-casting machine will cost another Rs. 1 lakh.

53. *Air Cooler*—For the manufacture of air coolers (without blower and motor, which are purchased from outside) the machines required are a lathe, a power operated drill, a grinder, welding equipment, sheet metal machinery such as shearing, bending, etc., and hand tools. The cost of this equipment will be about Rs. 30,000.

Production Techniques

54. *Electric fans*—Manufacture of electric fans can be divided into three sections:—

A. Foundry work,

B. Machining,

C. Winding, fitting, testing, etc.

55. Foundry work consists of pattern making, moulding and casting. This process is used for the manufacture of grey iron casting. The latest process of manufacture of the parts is by die-casting. This process of manufacture ensures better finished articles. But none of the small-scale units in the Northern Region is following this method.

56. The parts like shafts, bush bearings, etc. are manufactured in the machine shop. Stampings, which are generally supplied from outside are pressed together in a mandril. Then copper bars are inserted into the slots. Both ends of the rods are short-circuited by copper endrings which are brazed with the bars. The modern method of making rotors is by pressure

die-casting. But none of the small-scale units is in a position to adopt this method as it requires a capital of Rs. 2 to 3 lakhs on machines, dies, fixtures, etc.

57. Windings of coils to be fitted into the stator is done either with a hand-operated machine or motor-driven winding machine. The coils are fitted into the slots and connected, dipped in special insulating varnish and then baked in thermostatically controlled oven. Then the parts are assembled together. Every fan is afterwards tested mechanically and electrically but most of the small-scale units have no testing equipment in their workshops. Lastly different parts are either spray painted, electroplated or anodized.

58. *Air Coolers*—The cabinets of air coolers are manufactured by cutting and shaping G.I. sheets into proper sizes and designs. The work is done mostly with hand tools. The different parts are welded and rivetted together and lastly painted either with a hand brush or spray-painting equipment.

Raw Materials

59. The raw materials used for the manufacture of electric fans (A.C. and D.C.) are as under :

1. Winding wires
2. Resistance wires
3. Bearings
4. Condensers
5. Insulating materials (Empire cloth, empire tube, Egyptian tape, letheroid, Fibre sheets ebonite rod prespahn paper and bakelite sheets)
6. Paints and varnishes (Synthetic lacquers, synthetic primer, thinners, nitrocellulose lacquers, zinc white, black and white enamel, etc.)
7. Screws
8. M. S. rods
9. Silicon sheet stampings
10. Pig iron
11. Oils and greases.

60. The first two items and most of the insulating materials are imported from U.K., U.S.A. and other Western countries. The materials at S. Nos. 4 and 9 are imported as well as locally manufactured. The rest of the articles are indigenously made. Field investigations revealed that the small-scale units in the Northern Region use imported raw material to the extent of about 20 per cent of the total cost. So far these units have been procuring their requirements of the imported articles from established importers. Recently due to general shortage of foreign exchange the imports of these articles have been considerably curtailed. For example the import of insulating material has been restricted to 50 per cent and ball bearings to 7½ per cent. The small-scale units are, therefore, experiencing difficulties in procuring these raw materials at reasonable prices. It is suggested that the units at Amritsar and Varanasi may get together and jointly import their requirements of raw materials as actual users.

Quality

61. Most of the small-scale units were not found to be very much enthused about improving the quality of the products or adhering to the specifications laid down by the Indian Standards Institution. This attitude of theirs is probably due to their products having ready sale and also because of their inability to engage the services of qualified technicians. It may be pointed out that when the supply position of fans produced by the large-scale units becomes easy, there is every apprehension that most of the small-scale units might be thrown out of the market because of the inferior quality of their products. It is, therefore, suggested that the small-scale units in their own interests should make every endeavour to improve the quality of their fans now when the sellers' market exists. Every fan produced by them should be pre-tested before it is sent to the market. Many of the small-scale units do not have testing facilities. It is, therefore, recommended that the small-scale units should make arrangements to have testing boards in their workshops. A testing board, it is learnt, costs about Rs. 5,000.

Labour and Employment

62. *Present Employment*—Manufacturing processes of electric fans require technical skill and therefore, the percentage of skilled workers employed in this industry is higher than that of unskilled workers. The classified distribution of the labour in small-scale units is given in table XI.

TABLE XI

Classified distribution of workers in Small-scale units manufacturing Electric fans and Air coolers—Northern Region—1957

State	Centre	No. of units	Labour employed				
			Skilled	Un-skilled	Clerical	Super-visory	Total
			(i) Electric fans				
Delhi ..	Delhi ..	1	40	5	1	2	48
U.P. ..	Varanasi	4	43	6	7	6	62
Punjab	Amritsar	7	99	62	12	18	191
	Goraya	1	5	--	1	1	7
	Patiala ..	1	26	2	2	2	32
	Ludhiana	1	8	--	2	--	12
	TOTAL ..	15	221	75	25	31	352
			(ii) Air Coolers				
Delhi ..	Delhi ..	4	61	11	4	3	79
Punjab	Jullundur	1	3	4	--	--	7
	TOTAL ..	5	64	15	4	3	86

SOURCE : Field investigations.

63. Table XI indicates that the skilled workers form about 63 per cent and 75 per cent of the total labour employed in the units manufacturing electric fans and air coolers respectively. The percentage of skilled workers is much more than the average at all other centres, except at Amritsar where the skilled workers form only about 52 per cent of the total labour force. Almost all the units engage a clerk or two to deal with the correspondence. Technical supervisors are employed in all the units and the non-technical supervisory work is looked after by the owners or partners. The units in the Northern Region generally train workers in their own factories. At first they are engaged as unskilled workers or apprentices and then in due course of time they become skilled workers. Average daily rates of wages paid to different categories of workers employed in this industry at different centres are given in table XII.

TABLE XII

Average daily rates of wages in the Small-scale units manufacturing Domestic Electrical Appliances (Motor type) in Northern Region—1957

State	Centre	No of units investigated	Daily wages in Rs. paid to				Remarks
			Supervisory	Skilled	Unskilled	Clerical	
			(*i*) *Electric fans*				
Delhi ..	Delhi ..	1	7·00	3·00 to 5·00	1·50 to 2·00	3·00	
U.P. ..	Varanasi	4	5·00	2·50 to 4·00	1·25 to 1·50	3·00	
Punjab	Amritsar	7	6·00	3·00 to 4·00	1·50 to 1·75	4·00	
	Goraya .	1	—	- -	1·50 to 1·75	-	
	Patiala .	1	6·00	2·50 to 3·50	1·75 to 2·00	2·00 to 3·00	
	Ludhiana	1	6·00 to 7·00	3·00 to 4·00	1·50 to 2·00	3·00 to 4·00	
			(*ii*) *Air Coolers*				
Delhi ..	Delhi ..	5	7·00 to 10·00	3·50 to 4·50	1·25 to 2·50	3·00 to 4·00	
Punjab	Jullundur	1	—	3·00 to 4·00	1·50 to 2·50	—	

SOURCE : Field investigations.

64. Table XII indicates that the wages at Ludhiana and Delhi for all types of labour are comparatively higher than at other places. The wages of skilled workers are almost double those of unskilled workers and better than those of clerical staff.

The wages at Varanasi are lowest of all the places. The variations in wages at different places are influenced mainly by such local conditions as supply of labour and other employment opportunities.

Future Employment

65. As will appear from table XI the existing employment in the small-scale units manufacturing electric fans and air coolers is only 352 and 86 respectively in the Northern Region. The future employment can be projected on the basis of trends in demand of the products. As estimated in chapter IV the future demand for electric fans during the next 4 years in the Northern Region is likely to increase from 1·27 lakhs fans in 1957 to 4·2 lakhs in 1961. Roughly speaking, the employment should also increase *pari passu* with the increase in demand, but keeping in view the difficulties in starting new units or increasing the production in the existing units because of various factors discussed earlier in the Report it is not likely that the future employment will increase correspondingly. Moreover, as much of the installed capacity in both the large-scale and small-scale units in the Northern Region is lying idle; the increasing demand is likely to be met partly by utilizing the existing capacity. We have envisaged elsewhere in the report that four new units in the small-scale sector with a production programme of 14,000 fans per year can be set up in the Northern Region. On the basis of the existing employment-output ratio in the small-scale units (352 workers produce 10,400 fans per year) each worker produces nearly 30 fans in a year. Accordingly the additional employment created in the 4 new small-scale units with a production programme of 14,000 fans per year will be 466 workers.

66. *Air Coolers*—The future demand for air coolers is estimated to increase from 270 in 1957 to 560 in 1961. The employment in the existing units in the region is only 86; thus each worker produces nearly 3·5 air coolers per annum. On this basis the additional employment for producing another 190 air coolers will be 66 workers by 1961.

VII—FINANCIAL REQUIREMENTS

Fixed Capital

67. The investment of the existing 15 small scale units manufacturing electric fans and 5 units manufacturing air coolers in fixed capital on the basis of stated market value of installations is as follows :—

	(Rs. '000)	
	Electric fans	Air coolers
1. Land and Building (capitalised value)	246·70	81·60
2. Machinery and equipment ..	264·16	84·00
TOTAL ..	510·86	165·60

SOURCE : Table VI.

68. The model scheme prepared by the Small Industries Service Institute, New Delhi, indicates that the investment in machinery, tools, testing equipment and furniture of a unit manufacturing 3,600 motors should ordinarily cost about Rs. 1,52,000 compared with the standard of the model scheme, the existing units are inadequately equipped. Though information about fixed capital requirements of the individual units, is not available, yet some of the units certainly require additional machinery for replacement and expansion. The machinery installed at present is old and not fit for precision work. Though it is not possible to indicate the amount of capital that would be required by the units for additional machines or for replacing the old machinery, the need of the small-scale units, if they are to survive, is imperative. It is, therefore, recommended that they with the help of Small Industries Service Institute—should immediately draw up programmes of rationalization and procure the needed machinery from National Small Industries Corporation on hire-purchase basis.

69. *Working capital*—The units generally obtain funds required for working capital from indigenous money lenders on the hypothetication of finished goods. In such cases personal relations are equally important to as well as credit worthiness of the party for obtaining credit. The interest paid on such loans varies between 10 and 15 per cent per annum. In

addition the party seeking loan has to bear the cost of transportation, both inward and outward to the godown of money lender and to pay the wages of a chowkidar. This source of credit, is, therefore, expensive.

70. Out of 15, only 12 units intimated their requirements of additional working capital for expanding their production as well as for marketing functions. The break-up of the requirements centre-wise is given in table XIII.

TABLE XIII

Additional working capital requirements of 12 *Small-scale units manufacturing Electric Fans*

State	Centre	No. of units requiring accommodation	Amount required (Rs.)
U.P. ..	Varanasi ..	2	52,000
Punjab ..	Amritsar ..	7	2,80,000
	Goraya ..	1	12,000
	Patiala	1	68,000
	Ludhiana ..	1	68,000
	TOTAL ..	12	4,80,000

SOURCE : Field investigation.

71. In view of the excellent demand prospects of the electric fans, the State Bank of India may extend credit facilities to this industry under its pilot project scheme for extending credit to small-scale industries. The units have been advised to approach the Bank.

VIII—ORGANISATION AND MANAGEMENT PROBLEMS

Locational Factors

72. Varanasi and Amritsar, where the units are at present concentrated, have no special locational advantage for this industry. The raw materials are procured mostly from Bombay and Calcutta. Simply because the owners happened to be the residents of these places the units were set up there. Keeping the demand prospects in view, Delhi, Jaipur and Kanpur offer better scope in the Northern Region for setting up new units. There is no dearth of skilled workers at Delhi and Kanpur, whereas in Jaipur supervisory technicians and armature winders will have to be brought from outside. The new units will have to arrange the supply of raw materials, especially iron and steel, by obtaining quota certificates from the respective State Directorates of Industries.

Management Problems

73. The most pressing problem of the management is their deteriorating relations with labour. The manufacturers avoid registration under the Factories Act; thus the labour is denied facilities which they would be otherwise entitled and that causes resentment among workers. Some of the units, which are very small, find it difficult to maintain accounts as prescribed under the Central Excise Rules for the determination and payment of excise duty. The Business Management Section of the Small Industries Service Institute may help as requested in providing guidance to the units in respect of their dealings with labour and maintenance of proper accounts.

Organisation

74. The small-scale units owned by the technical persons and directly supervised by them are in a comparatively advantageous position. Because of the technical knowledge of the owner and direct supervision of the workers, he produces better results. In the Northern Region some of the flourishing small-scale units were started by skilled workers who were trained in the large-scale units. Only one unit at Varanasi is owned and supervised by a qualified technical man who also got practical training in one of the big concerns at Calcutta. The fans produced by this unit under the trade mark 'Cini' have gained good reputation in the market.

75. At Amritsar there already exists an association of the fan manufacturers, whereas the manufacturers at Varanasi have not so far formed any association. The units are advised to form themselves into an association in order to assist each other in solving their common problems. The units at Goraya, Ludhiana and Patiala in the Punjab may join the association at Amritsar. The State Directors of Industries, Uttar Pradesh and Punjab may help in formulation of these associations and so far as possible ensure that the associations are consulted in all matters relating to Government assistance to the industry.

IX—GOVERNMENTAL FACTORS

Taxes

76. Electric fans are subject to a Central Excise duty which was first introduced in 1954. The duty is levied at the rate of Rs. 10 per ceiling fan and Rs. 5 per table fan. The manufacturers are required to maintain proper accounts of their production for inspection by the Central Excise officials who have to be satisfied about the number of fans produced. The manufacturers are required to pay excise duty before they take out their stock for sale in the market from the bonded warehouses.

77. None of the units complained about the incidence of excise duty, as the impact is shifted to the consumers without impairing the demand prospects. But they all felt that the cumbersome and time-consuming formalities like depositing the tax-money in treasuries and delay in getting their stocks released for sale cause them much hardship, and waste of time. The formalities make greater inconvenience to the small-scale units particularly due to their limited holding capacity. The Central Board of Revenue may, therefore consider the possibility of authorising their inspecting staff to collect the amount of duty from the manufacturers so that they will not have to go to the treasuries.

78. Apart from the Central Excise duty, the electric fans are subject to the state sales-tax at the rates varying from 6 1/4 per cent to 7 per cent. It was ascertained from the dealers that the consumers generally are reluctant to pay the sales-tax over the list price. But if the list price is quoted at a little higher rate it would create lesser adverse reactions from the consumers. It was, suggested by the dealers that in order to overcome the consumer reluctance to the payment of sales-tax the Government may increase the central excise duty and abolish the sales-tax. This matter involves question of financial relation between the Central Government and the State Governments which do not fall within the purview of this report. Moreover, the mere reluctance to pay taxes cannot be an argument for changing the structure of taxation.

X—NEW OPPORTUNITIES FOR SMALL BUSINESSMEN

79. The unsatisfied demand for electric fans in the market calls for increased production. The gap between demand and supply in the Northern region during 1958 is estimated by the dealers at about 75,000 fans, and this gap is likely to widen still further in the years to come. The small businessmen can avail of this opportunity and take to the production of fans. Delhi, Jaipur and Kanpur are more suitable places for setting up new units in the Northern region. In Delhi at least 4 more units each with a capacity of 4,000 fans can flourish economically. At Jaipur one factory with a capacity of 3,000 fans will suffice for the present. There also appears to be scope for at least one unit at Kanpur with a capacity of 3,000 fans. Considering the nature of demand at Kanpur and Jaipur, the new units there should preferably concentrate on the manufacture of table fans.

APPENDIX I

List of Domestic Electrical Appliances (*Motor type*)

1. Coffee Grinder.
2. Egg beater.
3. Electric mixer (food and drink mixers etc.).
4. Milk shaker.
5. Juice extracting machine.
6. Electric shaver.
7. Hair drier.
8. Electric washing machine.
9. Massager.
10. Vacuum cleaner.
11. Floor Polishing machine.
12. Desert cooler.
13. Water cooler.
14. Refrigerator.
15. Fans (ceiling, table and pedastal).
16. Air circulator.
17. Electric stirrer.

APPENDIX II

List of Units Manufacturing Domestic Electrical Appliances (Motor type) in the Northern Region (1957)

(*i*) *Large-scale units manufacturing electric fans.*

1. M/s Rampur Engineering Co. Ltd., Rampur, U.P.
2. Matchwell Electric Works, Subzi Mandi, Delhi.

(*ii*) *Small-scale units manufacturing Fans.*

1. M/s Kajaria Electric Works, Gai Ghat, Varanasi, U.P.
2. M/s National Winders, C. K. 21/25, Sahah Gopaldas Street, Varanasi, U.P.
3. M/s Anand Fan Makers, C. K. 15/11, Gobindpura, Roshan Katra, Varanasi, U.P.
4. Basant Electric Works, Jalpadur Road, Kashipura, Vina Nath-ka-Gola, Varanasi, U.P.
5. Central India Electric Works, Amjal Khan Road, New Delhi.
6. M/s Jaura Engineering Works (P) Ltd., Putligahr, Azadnagar, Amritsar.
7. M/s Universal Engineering Works, Inside Sultanwind Gate, Amritsar.
8. M/s G. S. Kay Industries, Outside Sultanwind Gate, Amritsar.
9. M/s India Paramount Industries, G.T. Road, Amritsar.
10. Metropole Sound Products, G. T. Road, Amritsar.
11. M/s G. S. Bimra and Sons, Chitra Talkies, Amritsar.
12. M/s K. M. Corporation, Opposite Gole Bagh, Amritsar.
13. M/s Punjab Toka Works, Rly. Road, Goraya, Punjab.
14. M/s Imperial Electrical Industries, Factory Road, Ludhiana, Punjab.
15. M/s Punjab Machinery Works Ltd., Millerganj, Ludhiana, Punjab.

iii) Small-scale units manufacturing air coolers.

1. M/s Hind Refrigeration (India) Ltd., 46-Queensway, New Delhi.
2. M/s Hind Automobile Corporation, XV-1916, Paharganj, Multani Dhanda, New Delhi-1.
3. India Air Coolers, 21-Daryaganj, Delhi.
4. M/s Shaikh Noor & Co., Mohalla Niyaran, G. B. Road, Delhi.
5. M/s Masand Industries, G. T. Road, Jullundur.

LIST OF SMALL INDUSTRY SCHEMES

No.	Subject
1.	How to Manufacture Football.
2.	Wood Sheathed Slate Pencils.
3.	Tool Room Shop.
4.	Small Centre Lathes.
5.	Enamelled Single and Double Cotton covered Copper Wires.
6.	Activated Charcoal from the Rice Husk.
7.	Panel Pins and Wire Nails.
8.	Caffeine from Tea Waste. (Out of Stock).
9.	Writing Inks.
10.	Milk of Magnesia (Magnesia Magna).
11.	Nickel Sulphate from Nickel. Catalyst Waste of Hydrogenation Factories.
12.	Combined Chrome & Vegetable Tannery.
13.	Soil Pipes.
14.	Sheep Skin Tannery.
15.	Refining Saltpetre.
16.	Chrome Tannery for Cow and Calf Upper Leather.
17.	Industrial Hand-Gloves.
18.	Electroplating Unit (Small and Medium).
19.	Common Crockery Wares and L.T. Insulators.
20.	Roofing Tiles.
21.	Storage Batteries.
22.	Electrical Accessories.
23.	Glass Beads.
24.	Manufacture of Radio Components. (Out of Stock).
25.	Sole Leather.
26.	Manufacture of Electric Cables (Out of Stock).
27.	Plastic Toys and Plastic Articles.
28.	Holdalls.
29.	Leather Goods Manufacturing Unit.
30.	Cast Iron Foundry.
31.	Ferrous and Non-Ferrous Industry.
32.	Malleable Cast Iron.
33.	Model Carpentry Workshop.
34.	Barbed Wires.
35.	Hexagonal & Square head Machine Screws.
36.	A Pattern Shop.
37.	Brass Utensils.
38.	Liquer Ammonia.
39.	Puri Glass Bangle Industry.
40.	Vacuum Flask Industry.
41.	Glass Ampoules.
42.	Glass Phials.
43.	Neon and Glow Sign Industry.
44.	Scientific Glass Apparatus.
45.	Paints and Varnishes.
46.	Footwear.
47.	'Leather Goods' factory for production of Hand-bags, Purses, Folio bags, etc.
48.	Specialised Lady Shoe Production Unit.
49.	Specialised Gents Shoe Production Unit.
50.	Specialised Chappal Production Unit.
51.	Electric Motor Stampings, Fractional & Electric Motors and Electric Motor Components.
52.	Electrical Appliances Transformers and Fractional H.P. Motors.
53.	Chalk Crayons.
54.	Cycle Leather Saddle Tops.
55.	Vitreous Enamel Wares.

List of Small Industry Schemes—*contd.*

No.	*Subject*
56.	Squirrel Cage Induction Motors (3 Phase—5 H.P.).
57.	Fractional H.P. Motors (Fitted into Electric Hand Tools).
58.	Fractional H.P. Motors (Split Phase Squirrel Cage Type).
59.	Star Delta Starters and Metal Clad Switches.
60.	Chokes & Transformers for Flourescent Tube Lights and Radios.
61.	Cycle Dynamos with Lamp Fittings.
62	Electric Motors (1/16 to 10 H.P.).
63	Thermostatic Controlled Electric Irons.
64.	Automobile Electrical Accessories.
65.	Refrigerators.
66.	Domestic Electrical Appliances.
67.	Batteries.
68.	Assembly of Radio sets for Medium Waves Band.
69.	Automobile Dynamos.
70.	Loud Speakers.
71.	Small Chokes & Transformers.
72.	A Small Carpentry Unit.
73.	Buff Calf Leather for Chappal Uppers.
74.	Leather Jerkins.
75.	Cemented Sandals.
76.	Chrome Laces.
77.	Low Tension Porcelain Insulators.
78.	Pressure Die-castings of Non-ferrous Alloys.
79.	Safety Razor Blades.
80.	Cast Iron Metric Weights.
81.	Handmade Matches.
82.	Polythene Packing Material.
83.	Box and Willow Sides.
84.	C.T.S. Cables.
85.	Drawing & Filter papers.
86.	Mushroom Type Automobile Valves.
87.	Safety Pins.
88.	Tin Cans & Tin Printing.
89.	Mosaic Floor Tiles.
90.	Hand Moulded Fire Bricks and Special Refractory Shapes.
91.	Table Blowing Glass Toys and Biological Birds.
92.	Decorated Glass Wares.
93.	Prestressed Concrete Poles.
94.	Fruit & Vegetable Preservation.
95.	Cutting of Glass Articles.
96.	Hollow Glass Beads.
97.	Fire Bricks.
98.	Salt Glazed Sewer Pipe.
99.	Shuttlecocks.
100.	Transfer Decoration, Gold Lining and Painting on Crockery Articles.
101.	Fishing and Landing Nets.
102.	Boot Polish.
103.	Stainless Steel Utensils.
104.	Electric Motors.
105.	Footwear Factory with capital investment of Rs. 28,000.
106.	Footwear factory with capital investment of Rs. 10,000.
107.	Western type footwear.
108.	Chrome pigments.
109.	Absorbent cotton.
110.	Steel Furniture.
111.	Clinical school type and industrial thermometer.
112.	Glass toys.
113.	Combined Switch Fuses.
114.	Bolts and Nuts.
115.	Potassium Permanganate.
116.	Mild Steel Round Drums.
117.	Brush ware.
118.	Reclamation of Lead Antimony Alloy from Battery Scrap.

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LIST OF SMALL SCALE INDUSTRY ANALYSIS & PLANNING REPORTS (contd.)

No.	*Subject*
54.	Diesel Engines (Stationary type) (Northern Region).
55.	Industrial Fasteners (Western Region).
56.	Sanitary Fittings (Southern Region).
57.	Machine Tools (All India).
58.	Glass Scientific Apparatus (Eastern Region).
59.	Industrial Fasteners (Northern Region).
60.	Fruit & Vegetable Preservation & Canning Industry (All India).
61.	Beam Scale (Eastern Region).
62.	Industrial Fasteners (Southern Region).
63.	Cutlery (Southern Region).
64.	Umbrella Ribs (All India).
65.	Sewing Machines and Parts Industry (Western Region).
66.	Domestic Utensils (Northern Region).
67.	Plastic & Rubber covered wire (Western Region).
68.	Sewing Machines & Parts (Souththern Region).
69.	Pipe Fittings (Southern Region).
70.	Leather Footwear (Western Region).
71.	Umbrella Assembly Industry (Southern Region).
72.	Paint, Varnish & Lacquer Industry (All India).
73.	Preparatory Machinery for Art-Silk & Silk Weaving Industry (Western Region).
74.	Plastic and Rubber covered wire (Southern Region).
75.	Domestic Electric Appliances, Motor type (Northern Region).
76.	Fountain Pens and Nibs (Southern Region).
77.	Domestic utensils (Northern Region).
78.	Domestic Electric Appliances Heater type (Southern Region).
79.	Domestic Electric Appliances, Heater type (Northern Region).
80.	Picking Band and leather Belting (Western Region).
81.	Cutlery (Northern Region).
82.	G. I. Mallable Pipe Fitting Industry (Northern Region).
83.	Plastic Goods Industry (Southern) Region).

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LIST OF SMALL INDUSTRIES SERVICE INSTITUTES

1. Small Industries Service Institute, 56, Sunder Nagar, New Delhi.
2. Small Industries Service Institute, 20, Rutland Gate, Madras.
3. Small Industries Service Institute, 4, Camac Street, Calcutta.
4. Small Industries Service Institute, 40/40A, Cawasjee Patel Street, Fort, Bombay-1.
5. Small Industries Service Institute, B.XV, 1679, Ferozepur Road, Ludhiana.
6. Small Industries Service Institute, 113/80, Swaroop Nagar, Kanpur.
7. Small Industries Service Institute, Boring Road, Patna.
8. Small Industries Service Institute, Darpan House, Chandni Chowk, Cuttack.
9. Small Industries Service Institute, Bharalumukh, Gauhati.
10. Small Industries Service Institute, 10, Industrial Estate, Polo Ground, Indore.
11. Small Industries Service Institute Near Police Parade Ground Trivandrum.
12. Small Industries Service Institute, 193, 6th Cross Road, Gandhi Nagar, Bangalore-9.
13. Small Industries Service Institute, Iftakar Mansion, 79, Azambad, Hyderabad.
14. Small Industries Service Institute, Ismail Road, Jaipur.
15. Small Industries Service Institute, School of Designs Building, Karan Nagar, Srinagar.
16. Small Industries Service Institute, 416, Mandi Syed Khan, Agra.
17. Small Industries Service Institute, Sahakar Bhawan, Trikor Bagicha, Rajkot.
18. Small Industries Service Institute 15, Colvin Road, Allahabad.
19. Small Industries Service Institute Bachi Lodge, Club Road, Hubli.

PRINTED IN INDIA BY THE MANAGER, GOVERNMENT OF INDIA PRESS, FARIDABAD AND PUBLISHED BY THE MANAGER OF PUBLICATIONS, DELHI, 1

COVER DESIGNED AND PRINTED BY THE MANAGER

PHOTO-LITHO WING, G.I. PRESS, NEW DELHI.