

CHARACTERISTICS OF MANUFACTURING UNITS LOCATED IN INDUSTRIAL ESTATES OF THE PUNJAB: A MICRO ANALYSIS

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ABSTRACT: *In this article, the important characteristics of the sample units of thirteen industrial estates representing all the estates of the Punjab, Pakistan and their units are being analyzed at micro level for critical assessment of the working of the estates and their tenant units on various aspects. . This analysis is based on the data obtained by different departments and collected through a questioner after visiting the selected estates and their sample units and discussion/interviews of owner/manager conducted during visits.*

Key words: *industrial estates, manufacturing units, analysis, Industrial units.*

1. INTRODUCTION

Historically, industrialization is a significant process which has contributed much to the distinctive nature of national, regional and local economies and to geographically uneven trajectories of growth and decline [1]. It has been also realized that the problem of inequality in income distribution is also associated with rapid economic and industrial development [2]. Staley [3] argued that Industrial Estates offer a superb location of representatives of advisory and information services, training program and common facilities to a group of industrial establishments. The fundamental goal of economic development is to improve the welfare of the people. Different Studies (Lewis [4]; Fei and Rains [5]; Jorganson, [6]; Kelly *et al.*, [4]) provided guidelines in shaping policies and strategies which can be useful to achieve this goal. Ellis [8] discussed that Since 1950s it has been broadly accepted that to alleviate the problem of poverty and mass unemployment encountered in the developing countries; industrialization should play a key role in the economic growth of these nations. Several institutional techniques have been developed and applied successfully to the basic problem of initiating and sustaining the development of small and medium scale industries.

Rural-urban migration due to surplus labor of agriculture sector, leads to unemployment in urban area and it becomes very difficult to maintain the social infrastructure at the acceptable level in the urban areas [9]. Inayatullah [10] explained that the haphazardly mushroom growth of industries in towns and cities create social and civic problems. To improve this situation governments have formulated industrial, regional and urban development plans with distinct objectives, two are common of all: increase employment and the optimal location of industry. The industrial Zone, industrial area and Industrial Estate can be used efficiently to achieve above mentioned objectives and to locate industry in accordance with the policy of government, and have the effect of stimulating industrial development in differing degrees [9]. A study conducted by UN [9] differentiates between these terms as an *industrial zone* is merely an area of raw land set aside for industry, *Industrial Area* is a parcel of improved land subdivided into plots for the accommodation of industrial establishments and offered for sale or for lease. Sarma [11] described that Industrial Estate are the extension of the concept of Industrial Area which not only enjoys the advantages of later but some additional facilities such as industrial buildings, different common facilities and services, a management body, financial assistance and other inducements.

Several institutional techniques have been developed and applied successfully to the basic problem of initiating and sustaining the development of small and medium scale industries. The Industrial Estate is an addition to the list [12], which is an approved method of organizing, housing, and servicing industries. It is also an ideal and most economical tool for integrated industrial development and promotion if properly planned and implemented [13], especially in the medium- and small scale-sector for the countries under the process of industrialization [09]. Keeping in view, this current economic philosophy of development, Pakistan's development strategy also concentrated on equal distribution of growth. The promotion of new industries particularly small-scale industries in the less developed and potential areas, is the major strategy to achieve the desire pattern of development. In this perspective Provincial small industrial development corporations were established to stimulate industrialization through Industrial Estates in the respective provinces. Industrial Estates developed by these corporations provide improved tract of lands with necessary infrastructure and services. This developed industrial land is provided to entrepreneurs on lease or sale on the subsidies rates. Due to this subsidy a large amount of public funds are spent for the development of Industrial Estates, therefore, a sound planning is required for a successful Industrial Estate.

The term, Industrial Estate is used as a generic concept to designate "a planned complex of industrial enterprises offering developed sites and including, in many cases, pre-built factory accommodation and provision of services and facilities to the occupants" [14]. Industrial Estates were introduced at the end of 19th century but as a new device of industrial development, it was adopted extensively in 1940s [14,15]. It is defined as "an area of land developed and subdivided for use by number of industrial enterprises. It is established and controlled according to a plan incorporating zoning and restrictive regulations. The management, organization and maintenance of the Estates is for the benefit of both, the developing organization, and the tenants; and usually provides facilities for use like streets and roads, rail lead tracks, water, power, sewerage and sanitation, fire-station, banks, post and telecommunication, medical facilities, recreational facilities, common service facilities (workshop, storage, etc.), arrangements for technical and economic assistance (advice-demonstration—training), factory buildings (general purpose or "custom-made") and housing for labor" [13]. A number of terms are being used synonymously for "Industrial Estates" in different countries

and in the relevant literature such as Industrial Park (USA), Industrial District (USA; Nepal), Industrial Area (India; Mexico), Industrial Town or City (Mexico; Brazil; Ghana), Industrial Tracts (USA), Industrial Subdivision (Puerto Rico), Industrial Zone/Nucli (Italy), Trading Estate (United Kingdom), Industrial Trading Estate (United Kingdom; Pakistan), Industrial Plaza/Region (Russia), Industrial City (Mexico) and Industrial Estates (United Kingdom; Canada; India; Pakistan; Ceylon; Jamaica; and elsewhere). Normally the term "Industrial Estate" is used for smaller Areas while "Industrial Districts or Industrial Areas" are used to those covering larger areas [13].

In this article, the important characteristics of the sample units of thirteen industrial estates representing all the estates of the Punjab, Pakistan and their units are being analyzed at micro level for critical assessment of the working of the estates and their tenant units on various aspects. . This analysis is based on the data obtained by different departments and collected through a questioner after visiting the selected estates and their sample units and discussion/interviews of owner/manager conducted during visits.

It is observed that collection of proper information from the individual units is a painstaking job. In most cases, individual units do not publish their financial and statistical statements. They also appear to be rather reluctant to discuss freely about internal matters relating to finance, production, management, employment, profits etc. The usual tendency of most entrepreneurs is to exaggerate their operational problems, higher production costs etc., and to underestimate their incomes, govt. assistance and facilities

enjoyed. But there are a few confident and dynamic entrepreneurs who discuss such matters freely and respond well to the various queries in a spirit of cooperation. The required source materials were collected and individual views were obtained through a questionnaire and discussion. After meticulous scrutiny of the mass of information, processing was done for getting the most relevant and authentic information which is being focused in this article.

In this article, the important characteristics of the sample units of thirteen industrial estates representing all the estates of the Punjab, Pakistan and their units are being analyzed at micro level for critical assessment of the working of the estates and their tenant units on various aspects. . This analysis is based on the data obtained by different departments and collected through a questioner after visiting the selected estates and their sample units and discussion/interviews of owner/manager conducted during visits.

2. THE SAMPLE ESTATES AND THE UNITS

The sample has been taken from the following 13 Industrial Estates representing 72% of the total estates. The 13 sample Industrial Estates have been established at the total area of 1569.62 acres, divided in to 4703 (table1) plots for industrial establishments. A very small number (25) of plots is vacant and are not allotted yet, rests of the plots have been allotted. The 12 sample Industrial Estates established by the PSIC possess industrial plots of different sizes ranges from 5 Marlas to 4 kanal, however, in QIE minimum plot size is 14 marlas and maximum is 23 acres.

Table 1:- Total Area and Total Plots of Sample Estates

Sr. No.	Name of Estate	Establishing Year	Total Area (Acres)	Total No. of Plots
1	SIE-I Gujranwala	1967	103.05	408
2	SIE-II Gujranwala	1981	106.9	551
3	SIE Gujrat	1961	71	422
4	SIE Sialkot	1961	98.05	380
5	SIE-I Lahore	1962	9.75	41
6	SIE Kasur	1998	80	326
7	SIE Faisalabad	1980	244	1020
8	SIE Sargodha	1980	51.75	254
9	SIE Sahiwal	1985	52	188
10	SIE Mian Channu	1992	70.62	157
11	SIE Khanewal	1999	65	313
12	SIE Bahawalpur	1962	52	204
13	QIE Lahore	1960	565	439
TOTAL			1569.12	4703

Source: Field Survey

Table 2:- Types of Industries in the Sample Units

Sr. No.	Types of Industries	No. of Units	%age
1	Chemicals and chemicals products	45	13.43
2	Textile and garments	47	14.02
3	Food manufacturing	51	15.22
4	Iron and Steel Products	27	8.05
5	Electrical Machinery	15	4.48
6	Machinery except electrical	25	7.46
7	Metal products	18	5.40
8	Plastic Manufacturing	10	3.00
9	Paper and paper products	17	5.07
10	Footwear	08	2.40
11	Transport equipments	10	3.00
12	Furniture	14	4.20
13	Beverages	10	3.00
14	Leather products	11	3.30
15	Pharmaceutical	06	1.80
16	Mineral Products	09	2.70
17	Light Engineering	11	3.30
18	Recycling	01	0.30
TOTAL		335	100

Source: PSIC

Table 3:- Number of Industries according to their Period of Establishment in the Sample units

Sr. No.	Period of Establishment	No. of Industries	Percentage
1	1960-70	41	12.24
2	1971-80	88	26.27
3	1981-90	96	28.66
4	1991-2000	49	14.63
5	2001-2010	61	18.21
TOTAL		335	100

Source: Field Survey

Table 4:- Distribution of Sample Units by Type of Ownership

Sr. No.	Type of ownership	No. of units	Percentage
1	Government	0	0
2	Private Partnership	93	27.76
3	Proprietorship	204	60.90
4	Foreigner	0	0
5	Private limited companies	23	6.87
6	Public limited companies	0	0
7	Others	15	4.48
TOTAL		335	100

Source: Field Survey

Table 5:- Distribution of Sample Units by Source of Financing

Sr. No.	Source of Financing	No. of units	Percentage
1	Self-Financing	259	77.31
2	Loaning	76	22.69
TOTAL		335	100

Source: Field Survey

Table 6:- Classification of Industries according to their Number of Employees in the Sample Units

Sr. No.	No. of workers	No. of Industries	Percentage
1	0-20	171	51.04
2	21-40	68	20.30
3	41-60	51	15.22
4	60 +	45	13.43
TOTAL		335	100

Source: Field Survey

Table 7:- Reasons to Come in the Industrial Estates

Sr. No.	Reasons	Percentage
1	Availability of cheap land/ factory plots	61.25
2	Availability of raw materials	14.37
3	Facilities and economies	12.38
4	Nearness to the town	9.85
5	Nearness to market	2.15
TOTAL		100

Source: Field Survey

Table 8:- Source of Technology

Sr. No.	Source of Technology	No. of units	Percentage
1	Experience/Tradition	171	51.04
2	Technical Education	34	10.15
3	Technical personnel appointed	130	38.81
TOTAL		335	100

Source: Field Survey

Table 9:- Source of Raw Material used by Industries in the Sample Units

Sr. No.	Source of Raw Material	No. of Industries	Percentage
1	Local / National	174	51.94
2	Imported	27	8.06
3	Both	134	40
TOTAL		335	100

Source: Field Survey

Table 10:- Source of Energy Used by the Industries in the Sample Units

Sr. No.	Source of Energy	No. of industries	Percentage
1	Electricity	226	67.46
2	Coal	0	0
3	Gas	18	5.37
4	Oil	0	0
5	Both Electricity + Gas	91	27.16
TOTAL		335	100

Source: Authors own calculations

Table 11:- Utilization of Plots in Sample Estates

Sr. No.	Name of Estate	Total No. of Plots	Total Allotted	Plots Colonized	Units		
					Functional	Non Functional	Total
1	SIE-I Gujranwala	408	408	408	218	35	253
2	SIE-II Gujranwala	551	551	453	261	32	293
3	SIE Gujrat	422	422	422	234	2	236
4	SIE Sialkot	380	380	380	230	5	235
5	SIE-I Lahore	41	41	40	22	7	29
6	SIE Kasur	326	326	17	5	5	10
7	SIE Faisalabad	1020	1020	992	421	260	681
8	SIE Sargodha	254	254	215	73	78	151
9	SIE Sahiwal	188	187	173	123	50	173
10	SIE Mian Channu	157	157	46	18	19	37
11	SIE Khanewal	313	289	30	7	4	11
12	SIE Bahawalpur	204	204	204	29	27	56
13	QIE Lahore	439	439	439	250	46	250
TOTAL		4703	4678	3819	1891	570	2415

Source: PSIC

Table 12: - Industry wise Factors for Lower Capacity of Utilization

Sr. No.	Type of Industry	Factors
1	Chemicals/Chemical products	Problem of Raw materials, Power shortage
2	Engineering/Electrical goods	Problem of power shortage and lack of labor efficiency
3	Furniture/Woodcraft, Iron & Steel Fabrication	Problem of competition, Finance, Power shortage
4	Plastic products and Food products	Problem of marketing, Competition from out-side/larger units and inferior technology, Power shortage
5	Others	Problem of marketing and fluctuation of demand Power shortage

Table 13:- Market Regions of Industries in the Sample Units

Sr. No.	Region of Market	Number of Industries	Percentage
1	Local	147	43.88
2	National	80	23.88
3	International	108	32.24
TOTAL		335	100

Source: Author's own calculations

Table 14:- Entrepreneurs Opinions on Industrial Estates

Sr. No.	Opinion	No. of entrepreneurs	Percentage
1	Satisfied	132	39.40
2	Partially satisfied	89	26.57
3	Not satisfied	83	24.78
4	No opinion	31	9.25
TOTAL		335	100

Source: Field Survey

Table 15:- Entrepreneurs Opinions on Suitability of Site of Industrial Estates

Sr. No.	Opinion of Entrepreneurs	No. of entrepreneurs	Percentage
1	Yes	290	86.57
2	No	45	13.43
	TOTAL	335	

Source: Field Survey

3. DISTRIBUTION OF SAMPLE UNITS: A MICRO ANALYSIS

Under this section, micro level study of the various sample units of the selected thirteen Industrial Estates according to their characteristics is being presented:

3.1 Types of Industries

Different 18 major industry groups have been identified during investigation. The food industry comprises the largest number, (15.22%), textile manufacturing ranked on second with 14.02% while chemical and chemical products industries constitutes 13.43%. The distribution of the sample of 335 functioning units which were surveyed by major industry groups is presented in the table 2.

3.2 Period of Establishment

Period of establishment is divided according to decades. Only 41 industries reported that they were established during 1960-70, while 88 industries were established during the period of 1971-80. The number of industries which were established during 1981-90 is 96. A rapid increase in the number of establishment is observed after 80's due to the change of government policy of "Liberalization" which affected the growth of industries positively. Table 3 exposes the whole situation.

3.3 Type of Organization

As large number of the functioning sample units is functioning either as proprietorship or private partnership firms, followed by a very few private limited companies. The Pattern of ownership or organization of the units is shown in Tables 4.

3.4 Funding Pattern

Most of the units have used their own resources to establish their production plants after having allotted plots. Only 22% units have invested borrowed fund having been financed by various banks, financial institutions and the PISC. Distribution patterns of sample units by source of financing are shown in Table 5.

3.5 Employment Situation

The investigation indicates that employment situation varies from industry to industry Minimum number of workers in any unit is 3 people while maximum no is 450. The details are given in table 6. The situation varies at estate level according to size and level of success of the estate. The SIE-Mian Channu provide job to 368 people while SIE-Faisalabad is providing job to about 12000 people.

3.6 Background of Entrepreneurs

An important objective of the Industrial Estates was to provide opportunities to techno crafts and other entrepreneurs of the region. It was observed during the survey that reasonable number of entrepreneurs belong to the qualified young group. When asked why they decided to

come inside the Industrial Estates, the table 7 describes the factors/reasons which were expressed in order of preference.

3.7 Source of Technology

In course of survey, it was observed that in most cases, there was no formal source of technology used by the entrepreneurs. About 51% of them obtained the know-how through experience either in existing family business or as first generation venture set up by the entrepreneurs, nearly 10% having technical qualifications like Engineering Degree or Diploma while in 39% cases, the entrepreneurs appointed technical personnel for special work. The various sources of technology used by the sample units are indicated through table8.

3.8 Sources of Raw Materials

The sample units derive their requirements of raw material used by their plants for finished products from different source regions which is being presented in table 9.

3.9 Sources of Energy

The table 10 informs that 67.4% out of total surveyed industries use electricity as a source of energy, while 5.3% use gas and rest 27% use both of sources to run their factories. This situation is being displayed in table10.

3.10 Utilization of Plots

Out of 4703 plots in the sample estates, 4678 plots have been allotted to prospective entrepreneurs for industrial purposes and 3819 plots were colonized. At the time of survey total number of installed units was 2415. Out of these, in 570 units production has been suspended for various reasons. In a few cases, re-allotment has been made against non-functioning and non interested entrepreneurs but it has been found in course of the investigation that a few units have not yet vacated their plots even though the production has stopped and machinery has been removed. Such cases have come to notice in the Industrial Estates of Bahawalpur and Sahiwal.

It is also observed that in view of poor maintenance of estates, lack of facilities and managerial problems the Industrial Estates of the south Punjab has not been able to attract new units which tend to prefer better alternative location. In the Industrial Estate non-functioning units have certain problems other than locational consideration such as financial consideration and problem of managing and lack of technical knowledge at Sargodha and Bahawalpur and non availability of raw material at Sahiwal. At Faisalabad estate many units have discontinued operations for higher cost of production and problem of finance because they have to face competition with large entrepreneurs. The latest position of allotted plots, their colonization and functional

and non-functional units in the sample estates is presented in the table 11 for better assessment of utilization.

3.11 Capacity of Utilization

The author's survey could not find any unit in the sample estates achieving 100 per cent utilization of production capacity. The factors for lower capacity of utilization for some industries are shown in table 12.

One of the important factors, affecting the efficiency of any industrial unit is the level of utilization of the installed capacity, and the units are generally led to face the following problems if they fail to use the capacity optimally:

- Higher cost of production;
- Blocked capital to the extent of non-utilization;
- Insufficient work for the workers;
- Lower rate of returns;
- Adverse effect on smooth functioning of machinery;
- Power shortage due to present spell of load shedding.

3.12 Marketing of Products

Most of the sample units arrange their marketing on individual efforts. Common marketing arrangement for same or similar products of different units was not noticed in the investigation. The efforts of the government are insignificant in the overall marketing problem of the units. There is no show room or display facility in the sample estates. By and large; the sample units are carrying on their marketing operations in the following pattern:

The Table 13 reports that a significant number of units (32.2%) export their finished products to the countries like US, Middle East, South Africa and Far East. The knitwear, sports, Shoes and leather industries are major export oriented industries.

3.13 Operational Problems

The author's survey observed and identified a number of operational problems faced by the various industrial units of the sample Industrial Estates which are presented below:

- Power shortage and breakdown;
- Scarcity of raw materials;
- Shortage of skilled labor and their instability;
- Inadequacy of finance, specially short-term finance;
- Lower utilization of production capacity and waste of resources on account of idle capacity;
- Competition from large enterprises;
- Higher cost of production;
- Marketing problem.

In the sample units, the entrepreneurs pointed out in course of investigation that the various incentives provided by the government are in practice, not available in time because of formalities, and insufficient amounts are released after long waiting. According to entrepreneurs' opinion another cause of the loss of production or of utilization of production capacity works is inability of the estate management to attend to reported complaints instantly and remove the difficulty reported. Further, most of the facilities such as post office, canteen, central workshop and training centers, transport and banking facilities which the scheme provides for are not available in the most of the Industrial Estates of the Punjab.

3.14 Management Constraints

The survey found that the estate Management has the following constraints which affect smooth and efficient management:

- Insufficient allotment of fund for repairs and maintenance roads, sewerage, and essential fittings of the estates;
- Shortage of staff necessary for proper management of estates;
- Lack of security arrangement;
- Delayed/inadequate sanctions.

Out of the sample estates, the QIE, SIE-I Gujranwala and SIE- Sialkot which are relatively better placed in respect of locational merits, also suffers from the above-named constraints. The other estates are inferior in respect of staff strength and other facilities. It is therefore evident that the standard of management is poor or inadequate. Another factor pointed out by the management authorities is the reluctance of individual entrepreneurs to pay maintenance charges in time and lack of proper co-operation and co-ordination.

3.15 Opinion Survey on Industrial Estates

For an evaluation of the performance of Industrial Estates, the sample units were interrogated as to whether their expectations in joining to Industrial Estates for running industrial units were achieved? The opinions expressed in terms of their satisfaction were recorded and processed. The result of their expression is presented in the Table 14.

Although the opinions expressed were subjective in nature, they nevertheless indicated the entrepreneurs' opinions regarding facilities and amenities provided in the Industrial Estates and the general response of the estate authorities in respect of their complaints and difficulties. To minimize the dissatisfaction and partially satisfaction it is suggested that authorities should devote more time and attention to improve relations with tenant units and heed to their difficulties to improve services to them. Reciprocally, the units should also display a spirit of co-operation and the positive attitude.

The opinion of entrepreneurs regarding the provision of different financial facilities like loan provisions, tax concession and easy credit schemes etc was observed and response was very interesting and a mix. Most of the industrialist stated that government does not provide such type of facilities or never implement such policies. Only a few number of industrialist answered that government had provided them tax exemption in the first five year of establishment or after that.

The choice of site for Industrial Estates is an extremely important one, and site selection is very difficult task. All the relevant advantages of the different sites have to be carefully assessed and suitability of site for the establishment of different units must be considered. The opinion of entrepreneurs was asked whether the Industrial Estate is suitable place for their factory or not. Table 15 reports about the opinion of entrepreneurs in this regard.

4. CONCLUSION

The findings about important characteristics and different aspects of the working of the 335 randomly selected sample unit from thirteen Industrial Estates, having total area of 1569 acres and industrial provision 4703, ranges from 5 Marlas to 4 kanal, representing whole the population of 1845 functional units of all the estates have been analyzed at micro level for critical assessment of the working of the estates and their tenant units and reflected with the help of different statistical tables. It is observed that a very small number (25) of plots is vacant and are not allotted yet; rests of the plots have been allotted. A rapid increase in the number of establishment is observed after 80's due to the change of government policy of "Liberalization" which has positively affected the growth of industries.

Total 1845 units are in functional condition while 570 units are closed due to different reasons such as lack of experience, financial problems and due to off season. The functional units are producing a variety of products. Food industry comprises the largest number, (15.22%) and textile manufacturing ranked on second with 14.02%. The most of the functional units are under private owner ship as sole proprietorship (60.90%) using their own resources without loaning. The graduate owners are 48 % while 10 % Owners are equipped with technical education. The basic idea behind the establishment of Industrial Estates is to accommodate and promote the SSI. Most of the units present in the estates falls in the category of small scale industries having total number of worker less than 20 (51%). One of the objectives of the Industrial estates is to cultivate the local resources, 51% units use the raw material come from the local region and also market their products in the local market (43%). Electricity is the major power source for units (67.46%). Shortage of power supply due to load shedding is a major problem for operational of the units. It is also a cause of low utilization of capacity among the units along with other causes such as shortage of raw material, finances and completion with other units. 39% of entrepreneurs were satisfied for the establishment of their plants in the Industrial Estates regarding their expectations to join while a huge number of entrepreneurs are satisfied about the site of Industrial Estate.

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