


**Profile
of
Fan Sector Pakistan
(2018)**



	<i>Turn Potential into Profit</i>
	Small & Medium Enterprises Development Authority Ministry of Industries and Production Government of Pakistan http://www.smeda.org.pk

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Acronyms

BOI	Board of Investment
CE	Conformité Européene (European Conformity)
CFC	Common Facility Center
CPEC	China Pakistan Economic Corridor
ECO	Economic Cooperation Organization
EU	European Union
GDP	Gross Domestic Product
GS	Geprüfte Sicherheit (German Safety Mark)
GtCCI	Gujrat Chamber of Commerce & Industry
HS	Harmonized System
IEC	International Electrotechnical Commission
ITC	International Trade Center
PCSIR	Pakistan Council for Scientific and Industrial Research
PEFMA	Pakistan Electric Fan Manufacturers Association
PSIC	Punjab Small Industries Cooperation
PSQCA	Pakistan Standards and Quality Control Authority
PVC	Polyvinyl Chloride
SABS	South African Bureau of Standards
SASO	Saudi Standards, Metrology and Quality Organization
SIRIM	Standard and Industrial Research Institute of Malaysia
SME	Small Medium Enterprise
SMEDA	Small and Medium Enterprises Development Authority
SONCAP	Standards Organization of Nigeria Conformity Assessment Program
SWOT	Strengths, Weaknesses, Opportunities & Threats
TDAP	Trade Development Authority of Pakistan
UL	Underwriters' Laboratories
UNIDO	United Nation Industrial Development Organization
USD	United States Dollar

Executive Summary

The fan industry in Pakistan is mainly clustered in four major cities; Gujrat, Gujranwala, Lahore and Karachi. However, almost 98% of the production of the country is centered at Gujrat and Gujranwala. The fan sector comprises over 450 SMEs, of which almost 300 are based in Gujrat and the rest in Gujranwala. The industry produces on average 8 million fans a year.

The analysis of fan sector, whereas, has shown certain level of growth in the past years and then decline in the recent years. The fan sector suffers from low levels of productivity, inadequate technology upgrade and shortage of skilled staff. Moreover, most of the companies operate under locally created brands with only a couple moving to international branding of their products.

Electric Fans are broadly categorized as general-purpose fans that are meant to provide the human comfort for people and the industrial fans, which are used in factories for driving out hot or polluted air for controlling the environment.

The materials used in the manufacturing of fans are electric steel sheets, aluminum, enameled copper wire, ball bearing, steel rods, blades, winding wire and PVC. The involvement of technology in manufacturing process or for that matter in any process is minimal. Most of the units are at micro level about 10 – 12 % can qualify as proper units. There is lack of use of modern manufacturing machines and techniques by the fan industry. Due to these issues, small units are facing problems and issues of quality and productivity. However the large scale manufacturing units are filling this gap.

The workforce engaged in fan manufacturing sector ranges from basic technical workers to the top management positions. Human resource is available and skills are traditionally inherited generally. The owner usually deals with the management issues and marketing related activities. Most of the labor is semi skilled and workers are generally trained on the job.

Standards in the fan industry are of two types; quality standards and safety standards. There are no quality or safety standards for electric fans in Pakistan. Firms that are exporting in the international market are aware of the different certification requirements mainly CE for Europe; UL for the USA; SASO for Saudi Arabia; SABS for South Africa; SONCAP for Nigeria and SIRIM in Malaysia and Sri-Lanka. Most of the firms that export the fans also have in-house capacity for testing requirements.

The sector feels positively about entering newer markets especially where there are possibilities of higher value added. However, the major constraints are lack of information on new markets and limited capacity to meet quality standards compliance

requirements. Production process of fan manufacturing comprises mainly of die-casting, molding, cutting, winding, varnishing, grinding, assembling and painting.

Pakistan's export of fans in 2017 for the Product: 841451 is \$ 28.22 million and for the Product: 841459 is \$ 0.02 million. Pakistan's fans were exported mainly to Asian and African developing countries. Pakistan's Fan Sector mainly exports the product category 841451 Table, floor, wall, window, ceiling or roof fans, with a self contained electric motor of an output ≤ 125 W. Where as Pakistan's imports of Fans in 2017 for the product 841451 were \$ 29.30 million and for the Product: 841459 were \$ 12.36 million that totals up to \$ 41.66 million. According to data of export statistics of ITC Trade Map for the year 2017, Pakistan ranked at 17th among the major exporting countries for fans.

Strategic Trade Policy Framework (STPF) 2015-18 contains the details of the incentives announced by the Government of Pakistan for investors and the eligibility criteria. Besides that "Investment Policy 2013" available on Board of Investment (BOI) website, contains the information pertaining to the incentives for the investors in general and incentives for investors in Special Economic Zones (SEZs) in particular, in the perspective of CPEC. The representative bodies of fan industry are Pakistan Electric Fan Manufacturers Association (PEFMA) and Gujrat Chamber of Commerce & Industry (GtCCI).

1 Introduction

The fan industry in Pakistan is mainly clustered in four major cities; Gujrat, Gujranwala, Lahore and Karachi. However, almost 98% of the production of the country is centered at the two cities; Gujrat and Gujranwala. The fan sector in Pakistan comprises of over 450 SMEs, of which almost 300 are based in Gujrat and the rest in Gujranwala mainly. The fan industry produces on average 8 million fans a year. Out of the total production, approximately 30% fans consist of pedestals, 7% brackets and the remaining 63% are ceiling fans.

The fan manufacturing industry belongs to the light engineering industry category and is one of the industries that existed at the time of independence of Pakistan. Besides the small and medium units, a few units are quite large and have integrated system i.e. from motor winding to high-pressure dies casting. Sales of the fan sector are also fairly concentrated with five large firms in Gujrat and three in Gujranwala, accounting for 40% of total industry sales¹.

Most of the raw materials used by the fan industry are directly or indirectly imported from different countries. Some of the raw materials used in the manufacturing of a fan are: electric steel sheets, aluminum, enameled copper wire, ball bearing, steel rod and PVC. Fan industry profile in Pakistan is given in the table below.

Description	Value
Number of units	450
Total Installed Capacity	9.5-10 Million Fans (Annual)
Current Production	8 Million
Contribution to National Export	0.15%
Sector Employment	25-30,000
Capital Labor Ratio	6 Workers/Million Rs.
Total Estimated Investment	Rs. 5.0 Billion

Table 1: Fan Industry Profile²

The fan sector, whereas, has shown certain levels of growth in the past years and a subsequent decline in the recent years. Fan sector in Pakistan suffers from the low levels of productivity, inadequate technology upgrade and shortage of skilled staff.

Moreover, most of the companies in the fan sector in Pakistan operate under locally created brands with only a couple of them, moving to international branding of their products. The fan industry also requires testing and certifications of their products that is mainly conducted or required for electrical safety. Certifications are normally required

¹ UNIDO, Report on Industrial Sectors May 05, 2010

² PSIC Diagnostic Study for Fan & Light Engineering Cluster, Gujrat 2015-16

for the quality assurance for the export markets, whereas, general performance and safety testing are conducted regardless.

1.1 History & Background

The city of Gujrat in Pakistan is known for its electric consumer fan industry. It is pertinent to mention here that the city of Gujrat remains the largest hub of fan manufacturing in the country despite the expansion of production to the adjoining Gujranwala as well as to Lahore and Karachi over the past few decades.

About 70% of the country's production is centered at Gujrat. Fan & Light engineering industry of Gujrat is engaged in manufacturing of ceiling fans, pedestal fans, bracket fans, table fans, exhaust fans, fan packing, stabilizer, fan spare parts and fan guards.

Fan production belongs to the light engineering industry. Looking at the history, before the emergence of fan production, local metal workshops used to manufacture the components for water pipes (hookas or hubble-bubbles) and water hand-pumps. The fan manufacturing industry in Gujrat was started before the partition of India, as M/s S.A Fans in 1944, through technical skills and experience on fan manufacturing. After partition, many more entrepreneurs started manufacturing fans and got acquainted with the trade in the later years.

Currently, Gujranwala and Gujrat regions are prominent manufacturing hubs of household electrical appliances. This Industry initially originated from the fan industry that existed at a small scale in Gujrat before the partition. However after the partition, the fan industry experienced growth. Since Gujranwala was already famous for the production of iron, steel and other metal products, so the electrical fan manufacturing became a major business in the regions of Gujranwala and Gujrat.

In the early 1950s, M/S Anwar Mechanical Works with the brand name of "Asia Fan" and Climax Engineering Company took the initiative for fan manufacturing in Gujranwala. Simultaneously, some of the units initially started as the suppliers & vendors to M/S Climax and Anwar Industry and over a period of time. Simultaneously, several assembly units also sprang up. At that time, the dealers from all over the country, started purchasing fans from Gujranwala and thus the demand for fans grew rapidly and Gujranwala also become a known city in Pakistan for fan manufacturing.

In 1970s, some of the skilled workers started manufacturing fan components on very small scale and were engaged to supply to the large manufacturing units. Where as, many other small & medium level fan manufacturers came into existence and the fan components were outsourced by most of the large manufacturing units. Some of the assembling units graduated to manufacturing some of the components, assembling, testing and marketing under their brands. This situation resulted in the emergence of

manufacturing units in the un-organized sector as well, each of them manufacturing just one or two components. Thus, the fan industry in Gujranwala also got developed.

In Gujranwala, the golden period of fan cluster was 1970 – 1990, when the Fan industry got a real push and the Climax and Asia Fan also became the leading brands of Fans in the country. Climax Engineering Company Ltd. exhauled the range of electrical appliances production in the region by producing high quality industrial and domestic electrical appliances and apparatus e.g. Transformers, Air-Conditioners, Fan (Exhaust, Ceiling, Pedestal etc.), Electric Motors etc. In 1990s the competition developed in fan manufacturers and profit margin also cut down, so Climax put more focus on the other electrical appliances manufacturing like air conditioners and transformers etc. due to high profit and leading one in these appliance, so that the fan industry developed more in Gujrat.

2 Product Mix

2.1 General Types of Fans

Electric fans are broadly categorized as general purpose fans that are meant to provide human comfort for people and industrial fans which are used in factories for driving out hot or polluted air for controlling the environment. General purpose fans mainly include broad range of Ceiling Fans, Table Fans, Bracket & Circo Fans, Exhaust Fans and Pedestal Fans. Ceiling fans are produced more than 60% out of total fans production. In ceiling fan various sizes manufactured are 48" and 56". Most of the production requirement is 56" ceiling fan. In Pedestal fan, sizes manufactured are 22", 24", 26", but the high production and demand of size is 24" followed by 22" and 26".

The local fan industry produces a variety of fans which include, Ceiling Fan, Bracket Fan, Exhaust Fan, Pedestal Fan, Tilting Box Louvre Fan, Circomatic Fan, Louvre Pedestal / Table Fan, Louvre Bracket Fan, Ventilation Fan.

2.2 Fans Classified as per Energy Consumption

The fans that consume less than 125 watts of energy are generally referred to as the consumer fans (SITC 74341; HS 8414.51). Where as, the fans, which consume over 125 watts of energy, are classified as industrial fans (SITC 74343; HS 8414.59). Pakistan's fan industry mainly produces and deals in consumer fans³.

³ Trade Development Authority of Pakistan (TDAP) Report on Fan Industry of Pakistan,

2.3 HS Code for Classification of Fans

International Harmonized Customs Chapter 84 deals with electric fan trade. Pakistan mainly exports consumer fans, which fall under HS Code 8414.51: The export of industrial fans from Pakistan is almost negligible.

The description of the common products of fans is as follows;

HS Code	Description of Fans
841451	Fans: table, roof etc w a self-cont elec mtr of an output nt excdg 125W
841459	The fans that consume over 125 watts (Industrial Fans)

3 Geographical Concentration

The fan industry in Pakistan is mainly clustered in four major cities; Gujrat, Gujranwala, Lahore and Karachi. However, 98% of the countries production of fans is centered at Gujrat and Gujranwala.

Electric fans are manufactured in many areas of Gujranwala. However the majority of manufacturing units are located on G.T. Road from Nagar Phatak to Kangni Wala Bypass, Small Industrial Estate (SIE) and in surroundings of Gondlanwala Road and Khokherki.

According to “PSIC Diagnostic Study for Fan & Light Engineering Cluster, Gujrat 2015-16”, Gujrat has 298 industries of Fan & Light Engineering excluding cottage industries. The fan industry also develops supporting industries like plastic, aluminum casting, steel etc. The products being manufactured in Fan & Light Engineering cluster in Gujrat mainly include the domestic fans like bracket fans, pedestal fans, table fans, ceiling fans, circumatic fans and exhaust fans. Out of these 298 units, 102 units are located in Small Industrial Estate, the remaining units are scattered on various areas of the city including the following;

- G.T Road – 94 units
- Sultan Abad – 25 units
- Kalra Punwan – 12 units
- Abdul Majeed Hashmi Road – 10 units
- Badshahi Road – 8 units
- Rehman Shaheed Road – 5 units
- Jalalpur Ring Road – 6 units
- Begham Pura – 4 units
- Shadullah Road – 4 units
- Faiz Abad – 3 units
- Scattered units – 25 units

The 25 scattered units are located on Maqbool Abad, Qudrat Abad, Cha Tarang Road Kalupura, Eid Gah Road, Bilal Masjid Road, Palace Colony, Hasan Aziz Road, Shadiwal Road, Lala Chak, Qamar Salvi Road, Dr. Rabbani Road and Banth Giri Road.

4 Analysis of Business Operations

4.1 Value Chain

The value chain of Fan Sector in Pakistan is as given below;

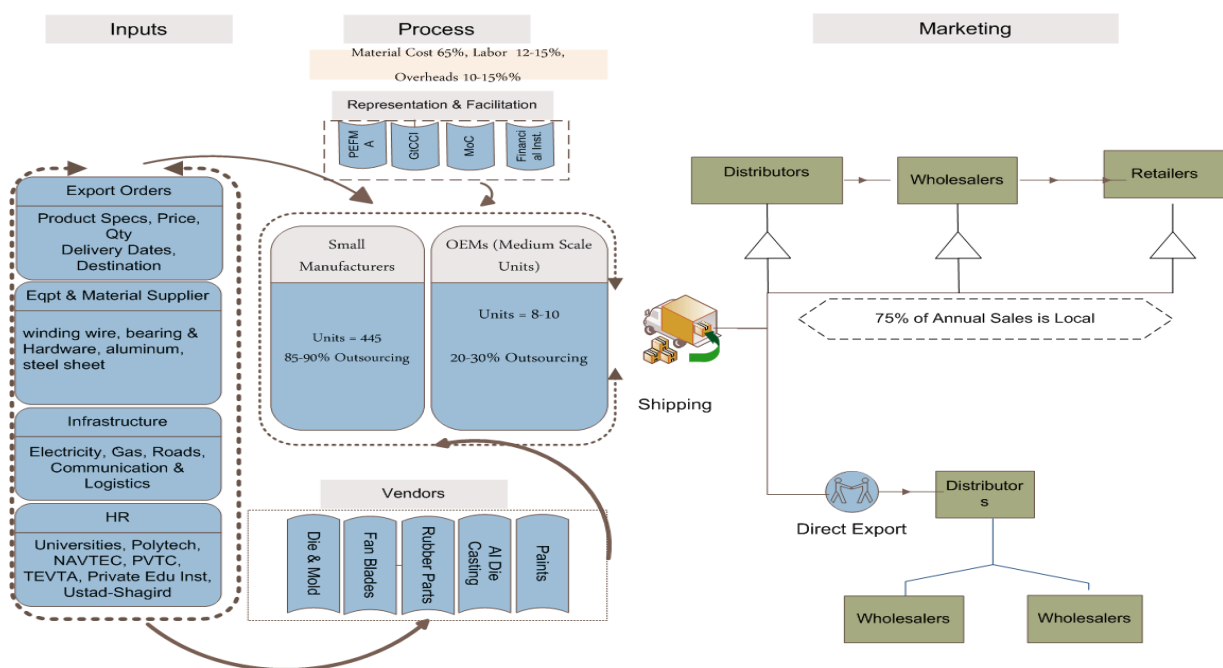


Figure 1: Value Chain of Fan Sector in Pakistan

4.2 Raw Material

The common raw materials used in manufacturing of fans are electric steel sheets, aluminum, enameled copper wire, ball bearing, steel rods, blades, winding wire and PVC. Almost 50% of the raw material is imported which also reflects significant cost variability. However, where local material is used (aluminum steel sheet) quality is not consistent. Unfortunately, energy efficiency is not available in Pakistani fans.

The raw materials required for manufacturing electrical fans include metal sheets, aluminum, winding papers, wires, router stator, different chemicals and spare parts etc. These raw materials are easily available in the market are as given below;

- **Blades** are made of aluminum sheets. Aluminum, which is one of the main raw materials, is imported from various countries in the form of aluminum waste. The waste is melted and is reshaped into aluminum sheets of different gauges to be used as per the specification of the product.
- **Top & Bottom Covers** are low grade cast iron components bought from foundry units and machined in-house. Also low grade hard plastic is used for top & bottom covers manufacturing for cost cutting purpose.
- **Capacitors** imported from China, Taiwan, Korea and also 1-2 units in Gujranwala and 2 units in Gujrat and 1 in Lahore are manufacturing locally.
- **Bearings** imported from China and sold through various suppliers
- **Rotor Stators** many small manufacturers are supplying this component
- **Canopies** are made of plastic & cover the hanging portion of down rod and provide good appearance. Many units are involved in manufacturing of canopies and easily available in the market. Haq brother is the famous name and major supplier of canopies and other plastic accessories.
- **Down Rod** comes in many lengths, a metal pipe used to suspend the fan from the ceiling.
- Enameled Copper Wire / Aluminum Wire
- Copper is the best conductor but aluminum is used due to the cost cutting and lack of awareness to customer. Wires are imported from china and also manufactured locally.
- **M.S Shafts** made of mild steel and many units are manufacturing in Gujranwala and supplied to the fan industry.

4.3 Technology

The involvement of latest technology in the manufacturing process or for that matter in any process is minimal in the fan industry. Most of the units are at micro level about 10 – 12 % can qualify as proper units. There is lack of use of modern manufacturing machines and techniques. Due to these issues small units are closing down. However the large size manufacturing units are filling this gap.

The machineries used by the fan manufacturing units depend upon the size and funds available of the units. The small manufacturers are using traditional production techniques with second hand machineries to manufacture the low cost fans while the medium size manufacturers are somehow able to use machineries and processes which would ultimately impact the quality of the end product, while large size manufacturers are distinguished by their ability to acquire new machinery and production techniques.

Common Machineries⁴ used in the processes for fan manufacturing are;

- Lathe machine
- Bench drilling machine
- Winding machine
- Shaper machine
- Grinding machine
- Hand coil machine for pedestal fans
- Die for blade bending
- Rotary die casting machine
- Dies for body casting
- Semi-automatic press for rotor stator
- Air compressor and gun for painting

The large scale manufacturers are using even more advanced machineries than the medium and small manufacturers like as given below;

- CNC wire cut machines
- Enameled copper wire plant
- Lacing machine
- Coil shaping machines
- Automatic winding machines
- Capstan lathe machine
- Automatic die stamping power press.

Apart from these machineries, further electrical devices are being used for testing purposes of electrical fans mentioned below;

- Watt meter
- RPM meter
- Test chamber to check air delivery (available in medium and large manufacturing units)
- In-house laboratory (available in large manufacturing units only).

The suppliers of the machineries used by the SMEs are hardly available in Gujrat but the same machinery is available from the nearby city of Gujranwala.

⁴ PSIC Diagnostic Study for Fan & Light Engineering Cluster, Gujrat 2015-16

4.4 Workforce

The workforce engaged in fan manufacturing sector ranges from basic technical workers to the top management positions. The labour is either engaged on regular, contractual or seasonal basis. From the basic operational tasks the labour performs laborious technical work. Fan sector employment stastics are given in the table below.

Description	Employment
FORMALLY EMPLOYED	35-40,000
INDIRECTLY EMPLOYED	140-160,000
Total	200,000

Table 2: Fan Sector Employment at Gujrat & Gujranwala⁵

Human resource is available and skills are traditionally inherited generally. The owner usually deals with management issues and marketing related activities. Most of the labor is semi-skilled and is trained on the job. There is no specialized marketing or accounts department in small units. They facilitate their sales only on the basis of personal contacts and no proper accounts are maintained by the small units, therefore certain problems related to access to finance, tax return, monitoring and evaluation are faced.

Looking at the HR needs of the fan sector, it is evident that skilled labor is required for manufacturing of fans, however currently the sector is supported by little semi-skilled and unskilled labor. Semi-skilled and unskilled labor is available in Gujrat. SME's fulfill their labor needs from unskilled labor due to seasonal operations. However, large entrepreneurs face difficulty in finding the skilled labor due to lack of availability of training facilities.

4.5 Compliance to National & International Standards and Certifications

Compliance to standards and certification is the area in fan manufacturing that needs due attention. Standards in the fan industry are of two types; quality standards and safety standards. There are no quality or safety standards for fans in Pakistan. Firms that are exporting are aware of the different certification requirements mainly CE for Europe; UL for the USA; SASO for Saudi Arabia; SABS for South Africa; SONCAP for Nigeria and SIRIM in Malaysia and Sri-Lanka. Firms that export also have in-house capacity for testing requirements⁶.

Majority of the electric fans manufacturers in Gujrat follow SASO (Saudi Arabia Standards Organization) standards, which are derived from IEC (International Electrotechnical Commission) standards. CE marking and UL (Underwriters'

⁵ PSDF Report on Upskilling Punjab's Fan Industry Cluster

⁶ Pakistan Institute of Trade & Development Sector Brief on Fan Industry

Laboratories) standards are the two international safety standards, which have strict requirements to meet. UL certification is for US market and CE mark certification is for European market. The requirements of CE mark certification are stricter as compared to those of UL. Another safety standard is GS (German Safety Mark). CE mark certification does not require surveillance testing, but GS does. After a proposed amendment, CE mark certification will also need surveillance testing in future.

4.6 Marketing, Sales & Distribution Channels

The fan sector feels positively about entering newer markets especially where there are possibilities of higher value added. However, the major constraints are lack of information on new markets and limited capacity of the firms to meet quality standards compliance requirements.

Manufacturers have developed contacts with the distributors all over the country and place their product on the market through these outlets. The distribution channel moves goods from producer to consumer, as shown below;



It will be interesting to know that small manufacturers and vendors of fans usually supply their products to the wholesalers and retailers of other cities. Small units don't have brand names. Sales agents are also working in this sector. They book the orders from other cities and supply the required quantity after purchasing from the small manufacturers. Some of the manufacturers also have their own retail stores for distribution of their products.

5 Production Process Flow

Production process of fan manufacturing is explained below;

5.1 Die-Casting

The process of die-casting is used to make some of the parts of the electric fan. Casting is done by melting the metal in the furnace and then pouring the molten metal into a die to get the part in the shape of the die. Normally the rotary furnace is used for this purpose, which takes furnace oil and/or natural gas as fuel and the dies are made of high quality steel alloy. The die-cast in case of pig iron casting is called 'Daigi Dhallai', in

the local language. It does not produce a good quality finish, i.e. the cast parts need further processing for finishing.

5.2 Molding

The plastic parts used in the electric fans are made by the process of molding. The plastic grains are melted and formed into the required shape. A piston is used to inject the melted plastic from the cylinder into the die through the nozzle, as it is done in the injection. So, the process is called injection molding and the machine used for such process is called injection-molding machine.

5.3 Cutting

Some parts of these fans are made up from metal sheets. The different steps involved in the production of such parts involve the sizing of the metal sheet into appropriate size (shearing) and cutting the pieces of required shape and size (coining, blanking and punching) using the cutting press. This process is especially used in making the core of electrical fields, i.e. rotor and stator. The commonly used cutting press is the locally manufactured ordinary power cutting press (10 to 25 tons force). Whereas, some of the large scale manufacturers use the stepping press (force 70 tons or higher), which is more useful for large-scale production. The stepping press has certain advantages over the ordinary power press, which include time saving, material saving, less labor etc.

5.4 Winding

Winding is the process of coiling the enameled copper wire in the slots of the core of the electric fields. This process is done manually, before the introduction of automatic outer slot winding machine (used in winding of ceiling fan stators). But the inner slot winding is still done manually. Some large scale manufacturers use imported inner slot coil and wedge inserter machines, which helps them in improving the mass production, material saving, improvement in quality and labor saving etc.

5.5 Varnishing

After the enameled copper wire is coiled on the core and the electrical field is formed, the copper wire is varnished and then baked in the oven to dry up. This process is done to ensure that there is no chance of short circuit in the electrical field and to keep the coils intact.

5.6 Grinding

This process is used in finishing some of the components, which are either made by die-casting or cutting. For such purpose, either the cylindrical grinding machine or lathe machine is used.

5.7 Assembling

As, various parts and components of fan are made by different vendors, so their standards and measurements may differ slightly. Hence, these parts and components may need some customization/ standardization, so that they can easily fit together to produce a product. These dynamic customizations may involve some drilling, grinding, welding, forging etc. apart from the standardized designs/ drawings.

5.8 Paint

After all the processes of assembling/ fittings the finished product is painted. There are two types of commonly used paint technologies, which are the powder coating and enamel. The powder coating is the modern method, in which the surface to be painted is ionized first and then powdered paint is sprayed on that surface and heated in the oven to produce high class finish. It is drying process and mostly used in the painting of different appliances like fans etc. The enameling is wet process, in which the oil-based enamel is sprayed over the required surface and then dried either in the oven or in open air to produce the finish. Schematic diagram of the production process flow of fan manufacturing is shown in the process flow diagram below.

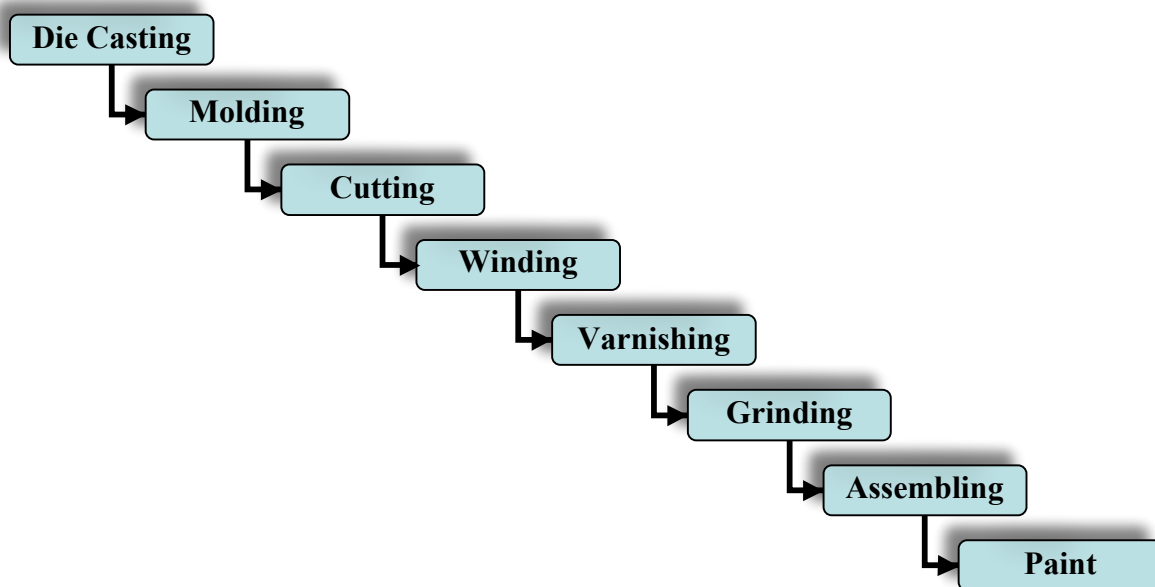


Figure 2: Process Flow Chart of Fan Manufacturing

6 Production Statistics

On the average, 8 million⁷ fans are produced per annum. Category-wise production of around 63% goes to ceiling fans, 30% to Pedestal fans, and remaining 7% to bracket fans. About 7-8 companies are large scale manufacturing units, that have composite integrated system i.e. from motor winding to high pressure dies casting. These units have induced higher level of investment on adoption of modern technology and automated process. Since, fan production is seasonal activity, which remains in demand during the first 6 months of the year, therefore, the large companies switch to alternate production of washing machines, geysers and recently into motorcycle parts. That is why the big fan manufactures are also known as auto parts makers.

However, the local fan industry is mostly dominated by the small firms and as such, does not benefit from economy of scale. This is a critical reason why the fan industry is not able to compete costs with the international competitors. The capacity of an average scale manufacturing unit is up to 400 fans per day which is no comparison to China where average production per day is reported to be about 40,000 fans. One of the solutions to address this issue could be through mergers of companies or creating standardization in production processes, common facility centre, joint sourcing of materials and joint production. It is estimated that 10% of the installed capacity production of fan sector is export oriented.

7 International Trade

This section reflects the status of Exports & Imports of fans of Pakistan. Under sub sections mentioned below trade history is given to recognize historical trade trends. The data in this section is taken from ITC Trade Map.

7.1 Pakistan's Trade with the World

Information / data pertaining to Pakistan's exports to the world, major trading partners of Pakistan, Pakistan's Imports from world and major Suppliers in world export market is given in the subsections below.

7.1.1 Pakistan's Exports to the World

⁷ TDAP Report on Fan Industry of Pakistan

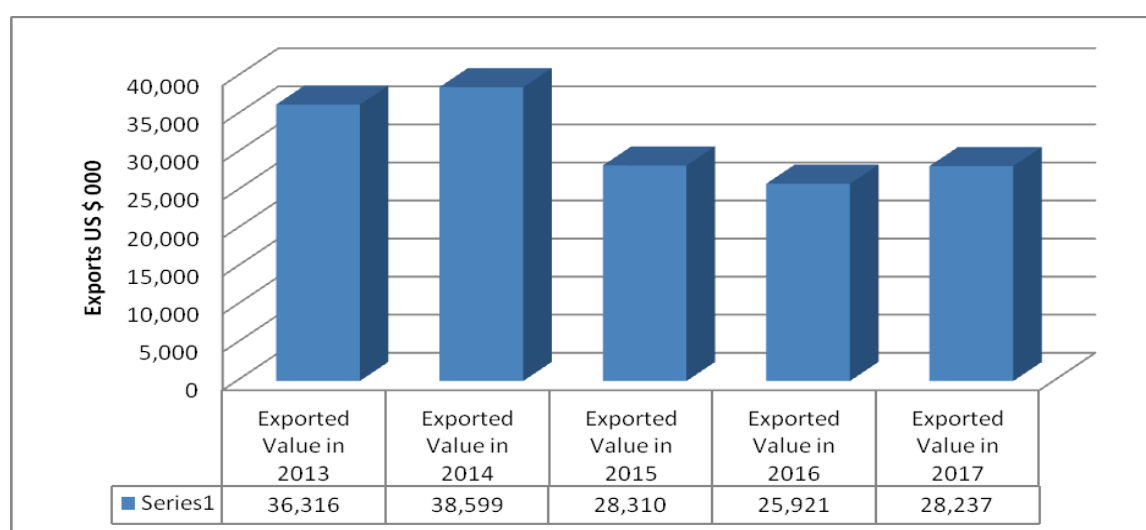
Pakistan's exports of fans in 2017 are given in the table below;

(US \$ 000)		
HS Code	Description	Pak Exports
841451	Fans: table, roof etc w a self-cont elec mtr of an output nt excdng 125W	28,217
841459	The fans that consume over 125 watts (Industrial Fans)	20
Total		28,237

Source: ITC Trade Map

Table 3: Pakistan's Exports of Fans in 2017

Year wise trend of Pakistan's exports of fans 2013-17 is given in the chart below;



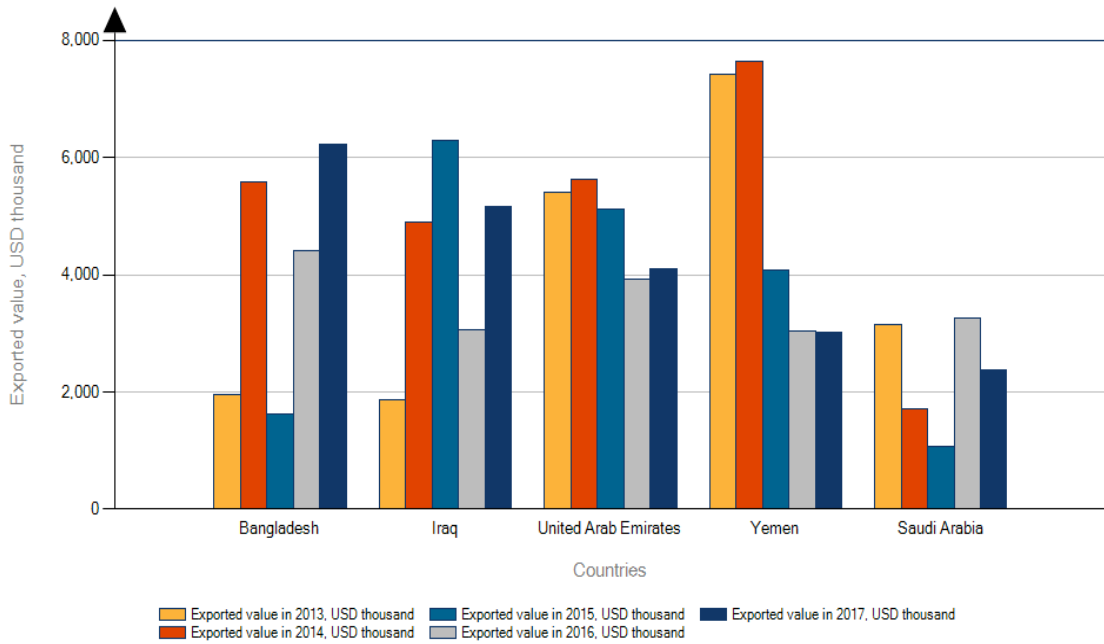
Source: ITC Trade Map

Chart 1: Pakistan's Exports of Fans

7.1.2 Major Trading Partners of Pakistan

Pakistan's fans were exported mainly to Asian and African developing countries. Pakistan's Fan Sector mainly exports the product category 841451.

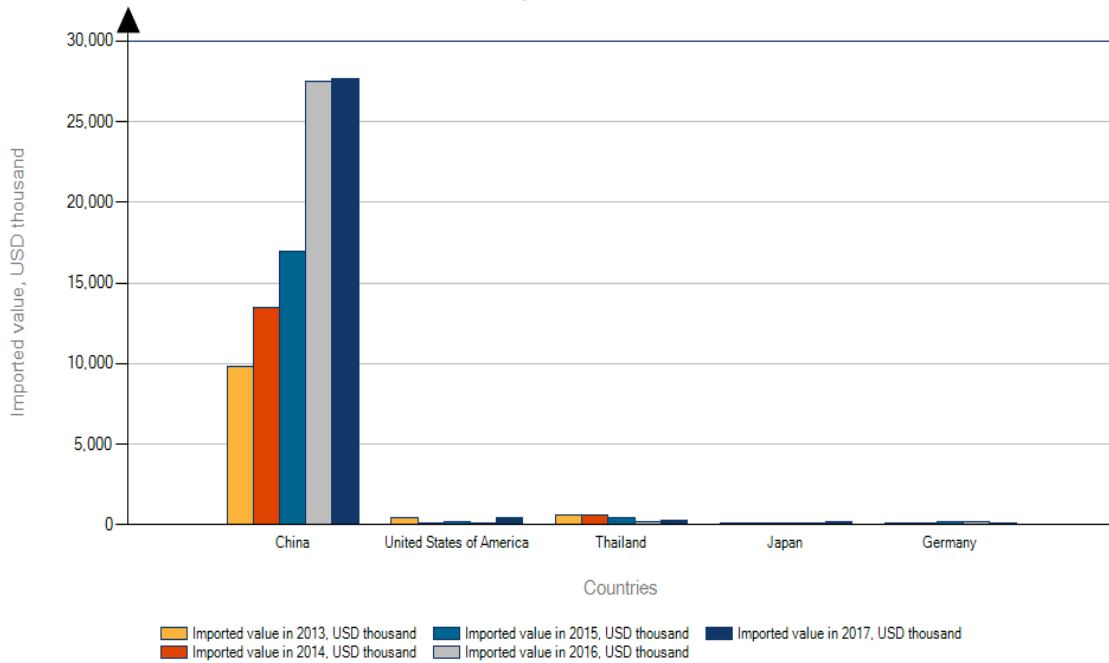
List of importing markets for a product exported by Pakistan is given in the chart below, Product: 841451 Table, floor, wall, window, ceiling or roof fans, with a self contained electric motor of an output <= 125W.



Source: ITC Trade Map

Chart 2: Importing Markets for a product 841451 Exported by Pakistan

List of supplying markets for a product imported by Pakistan is given in the chart below, Product: 841451 Table, floor, wall, window, ceiling or roof fans, with a self contained electric motor of an output <= 125W.

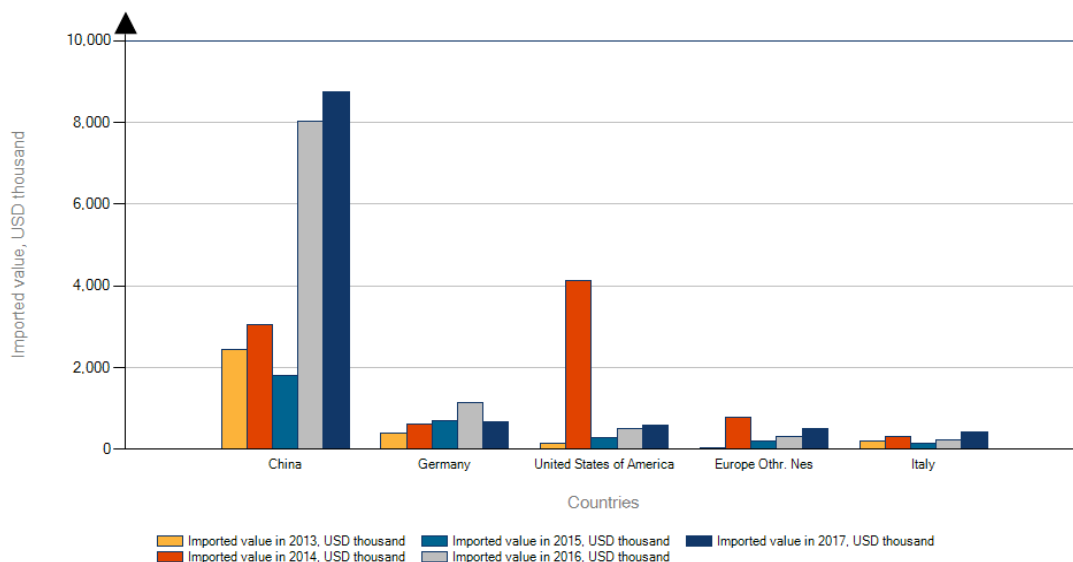


Source: ITC Trade Map

Chart 3: Supplying Markets for a product 841451 Imported by Pakistan



List of supplying markets for a product imported by Pakistan is given in the chart below, Product 841459 the fans that consume over 125 watts (Industrial Fans).



Source: ITC Trade Map

Chart 4: Supplying Markets for a product 841459, Imported by Pakistan

7.1.3 Pakistan's Imports from World

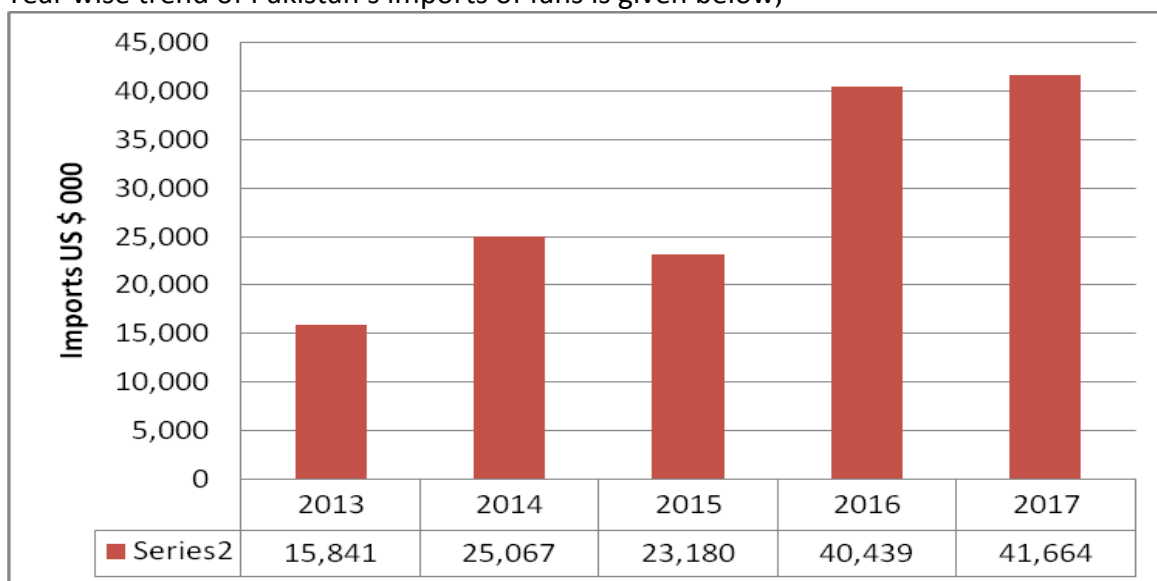
Pakistan's Imports of Fans in 2017 are given in the table below;

		(US \$ 000)
HS Code	Description	Pak Imports
841451	Fans: table, roof etc w a self-cont elec mtr of an output nt excdg 125W	29,303
841459	The fans that consume over 125 watts (Industrial Fans)	12,361
Total		41,664

Source: ITC Trade Map

Table 4: Pakistan's Imports of Fans in 2017

Year wise trend of Pakistan's imports of fans is given below;



Source: ITC Trade Map

Chart 5: Pakistan's Imports of Fans

7.1.4 Major Suppliers in World Export Market

Given below is the List of top supplying markets of fan in the world export market for the Product: 841451 Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an output not exceeding 125W;

(US \$ 000)				
Sr. No.	Exporters	Exported Value in 2015	Exported Value in 2016	Exported Value in 2017
1.	China	2,710,341	2,920,621	3,164,678
2.	Malaysia	122,794	113,410	130,010
3.	Germany	77,891	91,426	105,218
4.	Taipei, Chinese	77,419	91,464	101,837
5.	United States of America	95,263	93,194	86,032
6.	Hong Kong, China	128,113	84,041	82,197
7.	Thailand	50,890	67,756	72,101
8.	Spain	69,437	65,204	70,783
9.	India	46,596	49,143	55,722
10.	Mexico	9,502	9,762	38,514
11.	United Arab Emirates	14,885	12,325	36,707
12.	Italy	28,503	22,987	36,132
13.	Netherlands	19,683	24,669	32,919
14.	Viet Nam	18,480	17,269	32,285

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15.	Ukraine	26,334	30,692	31,599
16.	Belgium	20,300	25,190	28,842
17.	Pakistan	28,175	25,909	28,217

Source: ITC Trade Map

Table 5: Supplying Markets of Fan in the World Export Market

7.2 Pakistan's Trade with ECO Member Countries

Data pertaining to Pakistan's trade of fans with ECO members is given in the subsections below.

7.2.1 Pakistan's Exports to ECO Member Countries

Pakistan's Exports of Fans to ECO member countries are given in the table below;

(US \$ 000)

Product Code	Product label	Pakistan's Exports to Economic Cooperation Organization (ECO)		
		Value in 2015	Value in 2016	Value in 2017
'841451	Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an ...	3,050	2,257	2,215
'841459	Fans (excluding table, floor, wall, window, ceiling or roof fans, with a self-contained electric ...	1	0	0
Total		3,051	2,257	2,215

Source: ITC Trade Map

Table 6: Pakistan's Exports of Fans to ECO Member Countries

7.2.2 Pakistan's Imports from ECO Member Countries

Pakistan's Imports of fans from ECO member countries are given in the table below:

(US \$ 000)

Product Code	Product label	Pakistan's Imports from Economic Cooperation Organization (ECO)		
		Value in 2015	Value in 2016	Value in 2017
'841451	Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor of an ...	17	3	14
'841459	Fans (excluding table, floor, wall, window, ceiling or roof fans, with a self-contained electric ...	105	124	254
Total		122	127	268

Source: ITC Trade Map

Table 7: Pakistan's Imports of Fans from ECO Member Countries

8 SWOT Analysis of Fan Sector

SWOT Analysis of Pakistan's Fan Sector is given below;

8.1 Strengths

- Presence of large manufacturers in the industry.
- Durability and performance of the products.
- Requirement of small initial investment for small manufacturers.
- Availability of raw material within the cluster.
- Presence of specialized vendor industry.
- Availability of suppliers for machinery locally.
- Presence of Fan Development Institute for the cluster.
- Domestic demand for fan products.
- Low cost of labor
- Availability of domestic retail network

8.2 Weaknesses

- Lack of awareness about standardization.
- Unavailability of skilled labor.
- Lack of technical and commercial knowledge about quality of the product.
- Non-availability of pure copper wire for winding.
- Lack of investment in research and development
- Lack of coordination between government institutes and the industries.
- Lack of training facilities.
- Lack of strategic planning and business plans.
- Lack of professional approach of management.
- Outdated technologies and techniques.
- Lack of facilities for labor.
- Lack of powder coating facilities leading to wastage and low quality finishing.
- Less focus on energy efficient products.
- Lack of financial support and marketing awareness.

8.3 Opportunities

- Persistent and increasing demand for the product in local and export markets.
- "Nia Pakistan Housing Programme" announced by the Government in 2018.
- Innovation towards emerging energy efficient fans.
- Government support for innovation, investment in R&D as the industry has great potential to grow. Small units copy products from major players.
- High potential for technology up-gradation.
- Participation in exhibitions at National and International markets would significantly increase product demand.

- Availability of unutilized production capacity and continuously increasing demand for fan products.
- Adopting diversified range of products.

8.4 Threats

- Lack of infrastructural facilities.
- Lack of awareness on energy conservation
- Rising energy / utility costs resulting in increased cost of production.
- Uncertain Economic Condition.
- Lack of proper working environment to the workforce may be a key factor in driving them away from the local industry.
- Load shedding of electricity.
- Poor law and order situation.
- Complex taxation system.
- High markup and complex loaning procedures by the Commercial Banks.

9 Investment Opportunities

Some of the potential projects for investment in the Fan Sector are given below;

- Manufacturing of Energy Efficient Fans
- Brand Development
- Development of Buying Houses / Trading & Marketing facilities
- Awareness about the market and modern technology.

9.1 Policies / Incentives for Investment in Pakistan

- Strategic Trade Policy Framework (STPF) 2015-18 contains the details of the incentives announced by the Government of Pakistan and eligibility criteria.
- Besides that “Investment Policy 2013” available on Board of Investment (BOI) website contains the information pertaining to the incentives on the investors in general and incentives for investors in Special Economic Zones (SEZs) in the perspective of CPEC.

10 Representative Bodies

- *Pakistan Electric Fan Manufacturers Association (PEFMA)*
- *Gujrat Chamber of Commerce & Industry (GtCCI)*

11 Business Support Organizations

- Fan Development Institute (FDI), Gujrat
- Punjab Small Industries Cooperation (PSIC)
- Small and Medium Enterprises Development Authority (SMEDA)
- Trade Development Authority of Pakistan (TDAP)

12 Development Interventions Proposed

- Training Programmes for building capacity of industry personnel
- Capacity building of industry
 - Lean Manufacturing Techniques
 - ERP
 - Compliance to Certification
- Development of energy efficient motor for fan
- Development of efficient aerodynamic design of wings of fan
- Strengthening of CFC i.e. FDI, Gujrat
 - Stamping Machine
 - Testing Equipment etc.
- Material Bank for raw materials

13 Useful Links

Organization	Web Link
PEFMA	www.pefma.com.pk
GtCCI	www.gtcci.org.pk
ITC Trade Map	www.trademap.org
PSIC	www.psic.gop.pk
SMEDA	www.smeda.org
BOI	www.boi.gov.pk
TDAP	https://www.tdap.gov.pk

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- "Sector Brief on Fan Industry" by Pakistan Institute of Trade & Development
- PSDF Report on "Up-skilling Punjab's Fan Industry Cluster"
- ITC Trade Map; www.trademap.org