The Pakistan Business Council
FOSTERING ECONOMIC GROWTH

Enhancing the Competitiveness of Pakistan's Domestic Fan Industry

MAKE-IN-PAKISTAN

May 2026

EDB
ENGINEERING DEVELOPMENT BOARD

PEFMA
PAKISTAN ELECTRICAL FANS MANUFACTURERS ASSOCIATION
UNITY DISCIPLINE FAITH

Enhancing the Competitiveness of Pakistan's Domestic Fan Industry

MAKE-IN-PAKISTAN

May 2026

Lead Researcher

Adnan Ahmad
Senior Research Analyst

Samir Amir
Team Lead

Contribution of the following is acknowledged;

From Engineering Development Board (EDB);

Mr. Hamad Ali Mansoor
Chief Executive Officer – EDB

Mr. Muhammad Ashraf Dy.
General Manager – EDB

Mr. M. Shoaib Chaudhry
Dy. Manager – EDB

From Pakistan Electric Fan Manufacturers Association (PEFMA);

Mr. Nabeel Ahmed Ilyas
Chairman PEFMA

Mr. Umair Rafiq
Director Royal Fans

Mr. Malik Izhar Ahmed
Director Starco Fans

Mr. Muhammad Faisal Afzal
CEO Super Asia Group

Mr. Ihsan Mujtaba
Secretary General PEFMA

Disclaimer

The findings, interpretations and conclusions expressed do not necessarily reflect the views of the Board of Directors and Members of the Pakistan Business Council (PBC), the Engineering Development Board (EDB) or the Managing Committee of the Pakistan Electric Fan Manufacturers Association (PEFMA) Any conclusions and analysis based on the data from ITC Trade Map, Federal Board of Revenue, Pakistan Bureau of Statistics, the World Bank, International Monetary Fund, Thomson Reuters Data Stream and the State Bank of Pakistan are the responsibility of author(s) and do not necessarily reflect the opinion of these agencies. Although every effort has been made to cross-check and verify the authenticity of the data, the PBC, EDB, PEFMA or the author(s), do not guarantee the data included in this work. All data and statistics used are correct as of 30th January 2025 and may be subject to change. For any queries or feedback regarding this report, please contact **samir@pbc.org.pk**

The Pakistan Business Council:
An Overview

The Pakistan Business Council (PBC) is a research-based business advocacy platform established in 2005. It is now supported by over 100 private sector local and multinational businesses with significant investment in, and long-term commitment to sustainable growth of the country. They come from 14 countries, have leading roles in 17 major sectors of the formal economy, generate 40% of annual exports, contribute a third of Pakistan's total tax revenues and employ three million. Their combined sales represent every 6th Rupee of Pakistan's GDP.

PBC's major objectives are to advocate polices that lead to creation of jobs, value-added exports and reduction in import reliance through improved competitiveness of manufacturing, services and the agriculture sectors. It also promotes formalization of the economy.

PBC's over-arching theme, "Make-in-Pakistan" consists of three pillars: "Grow More/Grow Better", "Make More/Make Better" and "Serve More/Serve Better." Its evidence-based advocacy is backed by over a hundred studies to date, through its full-time research team, supplemented by collaborative research with renowned industry experts and economists. Through its Centre of Excellence in Responsible Business (CERB), PBC works to build capacity and capability of businesses beyond its membership, to adopt high environmental, social and governance standards. PBC holds conferences, seminars and webinars to facilitate the flow of relevant information to all stakeholders in order to help create an informed view on the major issues faced by Pakistan. Through its presence in Islamabad and Karachi, it works closely with relevant government departments, ministries, regulators and institutions, as well as other stakeholders including professional bodies, to develop consensus on major issues impacting the economy.

PBC is a pan-sectoral, not-for-profit, Section 42 entity. It is not a trade body; therefore, it does not advocate for any specific business sector. Rather, its key advocacy thrust is on easing barriers that thwart competitiveness of businesses in Pakistan.

Further information on the PBC is available on: www.pbc.org.pk.

The PBC's Founding Objectives

- To provide for the formation and exchange of views on any question connected with the conduct of business in and from Pakistan.

- To conduct, organize, set up, administer and manage campaigns, surveys, focus groups, workshops, seminars and fieldwork for carrying out research and raising awareness in regard to matters affecting businesses in Pakistan.

- To acquire, collect, compile, analyze, publish and provide statistics, data analysis and other information relating to businesses of any kind, nature or description and on opportunities for such businesses within and outside Pakistan.

- To promote and facilitate the integration of businesses in Pakistan into the World economy and to encourage in the development and growth of Pakistani multinationals.

- To interact with governments in the economic development of Pakistan and to facilitate, foster and further the economic, social and human resource development of Pakistan.

The PBC Member Companies


Jubilee
GENERAL INSURANCE


K&Ns


KE


THE STRENGTH
KOHAT
CEMENT


LIBERTY


LIPTON
Teas and Infusions


LOTTE


LUCKY
CEMENT


MACPAC
FILMS


Martin Dow


CHANGAN AUTO


MEGA


MAHMOOD GROUP


National
FOODS


NAVEENA


Nestlé
Good food, Good life


NIMIR


OLP


Packages Limited


Jazz


Pakistan
Oxygen


PSL
PAKISTAN SERVICES LTD.


PSX


PEPSICO


reckitt


MASOOD
ROOMI


SAIF GROUP


SAP


Sapphire


Servis


Shan


Atlas


SICPA


SIEMENS


Soneri Bank


SOORTY


SPEL
Synthetic Products
Enterprises Limited


Standard
Chartered


systems


TAPAL


TG


TCS
WE MOVE YOU


PROTECTS
Tetra Pak
WHAT'S GOOD


Coca-Cola


TPL


TTE


Tufail


Unilever


UBL
where you come first


KHAADI


Young's

The PBC Affiliates

engro elengy terminal

engro fertilizers

engro polymer & chemicals

HINUCON (Private) Limited

HUBCO

IFL

International Steels Limited
Shaping Tomorrow

LCI
LUCKY CORE INDUSTRIES

Lucky Electric Power Company

LMC Lucky Motor Corporation

MASTER
MASTER WIND ENERGY LIMITED

Pakistan Cables
TRUSTED NOT TO COMPROMISE

Tri-pack
Tri Pack Films Limited

Table of Contents

Executive Summary 01
Chapter 1: The Global Domestic Fan Industry 06
1.1: What is a Domestic Fan? 07
1.2: Overview of the Global Domestic Fan Market 07
1.3: Break-up by HS-Codes 08
1.4: Trends in World Exports of Domestic Fans 08
1.5: The Top Global Domestic Fan Exporters 09
1.6: The Top Global Domestic Fan Importers 11

Chapter 2: Pakistan's Domestic Fan Industry 13
2.1: Overview of Pakistan's Domestic Fan Industry 14
2.2: Product Mix 15
2.2.1: Product Mix by Category 15
2.2.2: Product Range 15
2.3: Characteristics and Growth Drivers for Pakistan's Domestic Fan Industry 16
2.4: Pakistan's Exports of Domestic Fans (HS-841451) 18
2.5: Trends in Pakistan's Exports of Fans – Product Category and Destination 19
2.6: Pakistan's Imports of Domestic Fans 22
2.7: Tax Structure of the Domestic Fan Industry 23
2.7.1: Direct Tax Regime 23
2.7.2: Indirect Tax Regime 24

Chapter 3: Value Chain Analysis 26
3.1: Raw Materials Procurement 27
3.2: Production Stages of a Ceiling Fan 28
3.3: Quality Checks 33
3.4: Outbound Logistics 33

Chapter 4: Potential Export Markets for Pakistani Manufactured Domestic Fans 34
4.1: Market Dynamics of Pakistan's Top 20 Importers of Domestic Fans 35
4.2: Potential Export Markets 37
4.3: Potential European Markets for Exports of Domestic Fans 38
4.4: Potential African Markets for Export of Domestic Fans 39
4.5: Potential Asian Markets for Exports of Domestic Fans 40
4.6: Potential Middle Eastern Markets for Exports of Domestic Fans 41
4.7: Potential American Markets for Exports of Domestic Fans 42
4.8: Opportunities under Pakistan's Trade Agreements 43

Chapter 5: Barriers To Trade 45
5.1: Analysis of Tariff Barriers 46
5.2: Non-tariff Barriers 46

Chapter 6: Analysis of Competitors Strategies 47
6.1: The Indian Domestic Fan Industry 50
6.2: The Chinese Fan Industry 52

Chapter 7: Competitiveness of Pakistani Fans 54
7.1: Competitiveness 55
7.2: The Facets of Competitiveness 55
7.3: Approach Used in this Study for Measuring Competitiveness 56
7.4: Market View on Competitiveness of Pakistan's Domestic Fan Industry 56
7.4.1: Factor Conditions 57
7.4.2: Demand Conditions 59
7.4.3: Related and Supporting Industries 60
7.4.4: Firm Strategy, Structure and Rivalry 61
7.4.5: Government 63
7.4.6: International Factors 64
7.5: Measuring Competitiveness 65
7.5.1: Global Competitiveness Indicators 65
7.5.2: Industry Competitiveness Measures 68

Chapter 8: Demand – Supply Analysis 69
8.1: Demand-Side Factors 70
8.2: Supply-Side Factors 72
8.3: Equilibrium Analysis 73

Chapter 9: Government Policies/Initiatives 75
9.1: Quota for Imported Raw Materials Under SRO-565(I)/2006 & 2014 76
9.2: Export Finance Scheme (EFS) 76
9.3: Long Term Financing Facility (LTFF) 77
9.4: Refinance Facility for Modernization of SMEs 77
9.5: SME Bank Loan Regime 77
9.6: Cash Margin on Imports 78

Chapter 10: SWOT Analysis 79
10.1: Strengths 80
10.2: Weaknesses 80
10.3: Opportunities 81
10.4: Threats 81

Chapter 11: Key Findings 83
11.1: Strong Domestic Base with Mature Manufacturing Capabilities 84
11.2: Technological Responsiveness and Growing Orientation Toward Energy Efficiency 84
11.3: Persistent Skill Shortages Due to Generational Shifts in Labor 84
11.4: Limited Scale and Weak Access to Finance Constrain Competitiveness 85
11.5: Untapped Export Potential, but Barriers to Market Entry Remain Significant 85
11.6: Exposure to External Shocks and Policy Inconsistencies 85
11.7: Strategic Opportunities for Growth Through Innovation and Market Diversification 86
11.8: Structural Dependence on Imported Raw Materials and Vulnerable Supply Chains 86
11.9: Compliance Costs and Absence of Local Testing Infrastructure Increases Export Barriers 86
11.10: Marketing, Branding, and Market Development Remain Weak 87
11.11: Seasonality of Domestic Demand Reduces Capacity Utilization 87
11.12: Non-Standardization of Vendor Outputs Limits Quality Consistency 87
11.13: Large Export Potential Exists but Requires Strategic Policy and Industry Upgrading 88

Chapter 12: Recommendations for Improving Competitiveness of Pakistan's Domestic Fan Industry 89
12.1: General Recommendations 90
12.2: Recommended Marketing Strategies 94

Annexure 97
References 100

List of Tables

Table 1:	Top 15 Global Domestic Fans Exporters	09
Table 2:	Top 15 Global Domestic Fans Importers	11
Table 3:	Industry Snapshot	14
Table 4:	Product Range	16
Table 5:	Pakistan's Exports of Domestic Fan (HS-841451) to the World	19
Table 6:	Pakistan's Imports of Domestic Fan (HS-841451)	23
Table 7:	Taxes on Corporate Income	23
Table 8:	Super Tax	24
Table 9:	Duties on Raw materials and Parts used in Electric Fans	25
Table 10:	List of Raw Materials and Components – availability	27
Table 11:	Tests Carried During Domestic Fan Manufacturing	31
Table 12:	Potential European Markets for Exports of Domestic Fans (HS-841451)	38
Table 13:	Potential African Markets for Exports of Domestic Fans (HS-841451)	39
Table 14:	Potential Asian Markets for Exports of Domestic Fans (HS-841451)	40
Table 15:	Potential Middle Eastern Markets for Exports of Domestic Fans (HS-841451)	41
Table 16:	Potential American Markets for Exports of Domestic Fans (HS-841451)	42
Table 17:	Opportunities Under Trade Agreements	44
Table 18:	Tariff faced by Pakistan, India, and China on exports of Domestic Fans to potential markets	46
Table 19:	Compliance Requirements	47
Table 20:	Key Economic Indicators	49
Table 21:	Chinese Policies / Regulations Related to Fan Industry	52
Table 22:	Employment status in Fan industry	58
Table 23:	Comparison of small, medium, and large sized manufacturers	62
Table 24:	Pakistan's Competitive Position against Peers	64
Table 25:	The Business Ready (B-READY) Pillars	66
Table 26:	Logistic Performance Index of South Asian Countries	66
Table 27:	Competitiveness Measures at Industry Level	68
Table 28:	Correlation Matrix	74
Table 29:	SME Bank Loan Financing Facilities	77
Table 30:	SMEs Definition Across Different Institutions	93
Table 31:	Duty Structure for Raw Materials	94

List of Figures

Figure 1:	Trends in World Exports of Domestic Fans (HS-841451)	08
Figure 2:	Top Global Domestic Fan Exporters	10
Figure 3:	Top Exporters of Domestic Fans	10
Figure 4:	Top 10 Global Importers of Domestic Fans	12
Figure 5:	Top Importers of Domestic Fans)	12
Figure 6:	Domestic Fan Production	15
Figure 7:	Pakistan's Exports of Fans (HS-841451)	18
Figure 8:	Pakistan's Exports of Ceiling Fan (HS-84145110)	20

Figure 9: Pakistan's Exports of Pedestal Fan (HS-84145120) 20
Figure 10: Pakistan's Exports of Table Fan (HS-84145130) 21
Figure 11: Pakistan's Exports of Exhaust Fan (HS-84145140) 21
Figure 12: Pakistan's Exports of Other Fans (HS-84145190) 22
Figure 13: Distance and Concentration 35
Figure 14: Market Diversification 35
Figure 15: Dynamic Markets and Declining Markets 37
Figure 16: Exports of Domestic Fans to the World – Pakistan and Regional Peers 43
Figure 17: Exports of Domestic Fans to the World – Pakistan and Regional Peers 49
Figure 18: Real Effective Exchange Rate Index 65
Figure 19: Logistics Contribution to GDP 67
Figure 20: Transport Model Shares in Pakistan 67
Figure 21: Access to Electricity 70
Figure 22: GDP per Capita 70
Figure 23: Inflation Rate 71
Figure 24: Urban Population 71
Figure 25: Official Exchange Rate 72
Figure 26: Unit Cost Change and Labor Productivity Growth 72
Figure 27: Loan Provisions to Manufactures of Fans 73

Executive Summary

Executive Summary

Fan manufacturing is a part of the light engineering sector and is one of the oldest industries of Pakistan. The fan industry in Pakistan has its origins before partition and has existed since 1942. The fan industry is mainly clustered in four major cities namely; Gujrat, Gujranwala, Lahore and Karachi. The sector is generating direct and indirect employment of more than 200,000 and contributes 0.3% to national GDP. However, the sector is facing certain challenges.

To better understand the challenges faced by the manufacturing sector, the Pakistan Business Council (PBC), under its Make-in-Pakistan initiative, has undertaken a series of sectoral studies to enhance the competitiveness of key industries. The Engineering Development Board (EDB), as a joint partner, has worked closely with the PBC throughout the study, contributing technical expertise, facilitating stakeholder consultations, and providing policy inputs consistent with its mandate as the apex body for the engineering industry. The EDB's engagement has helped ensure that the analysis and recommendations are aligned with national industrial policy and implementation realities. This report is a joint effort of the PBC, the EDB, and the Pakistan Electric Fan Manufacturers Association (PEFMA).

Global Domestic Fan Industry

The domestic fan generally includes ceiling fans, table fans, pedestal fans, exhaust fans, and wall fans. According to international standards, a fan having a wattage below 125W is categorized as a 'domestic fan'. The demand for domestic fans is increasing due to population increase, increased electrification, rise in disposable income, and climate change. Disposable fans made out of plastic are popular mostly in regions where the ambient temperature remains low such as Europe, however, durable fans made mostly from metal are more popular in hotter regions such as Asia, Africa, and the Middle East.

The Global domestic fan market has been expanding with domestic fans worth $8.50 billion sold in 2024. The industry has posted a compound annual growth rate (CAGR) of 8.46% between 2015 and 2024 and sales are expected to touch $10.34 billion by 2029. China is the dominant domestic fan supplier with a global export share of 81.4% in terms of value. China is followed by Malaysia (2.4%), Mexico (2.0%), Taipei, Chinese (1.6%), USA (1.5%), and others. The top domestic fan importers in 2024 include the USA (32.1%), Japan (4.2%), Viet Nam (3.2%), Korea (3.1%), Iraq (2.9%), Mexico (2.9%), among others.

Pakistan's Domestic Fan Industry

Pakistan's domestic fan industry is primarily concentrated in Gujrat and Gujranwala, accounting for more than 90% of the domestic fans' manufacturing capacity. The overwhelming concentration of the industry and its vendors in these two clusters has rendered setting up manufacturing facilities in other parts of the country unviable – in short, location has become a major entry barrier to the industry.

The source of dominance of the larger companies can be attributed to better technology, innovation, efficient management system, branding, a strong distribution network and a skilled and experienced workforce. The industry has a production capacity of around 8-10 million units per annum and currently employs around 200,000 workers. Urban population growth, improvements in access to electricity, housing sector growth, climate change, and the introduction of energy efficient DC, BLDC, and inverter fans are the major growth drivers for the domestic fan industry in Pakistan.

The total value of exports of the domestic fan industry was $31.5 million in 2024. Major export destinations for Pakistan's domestic fans include Yemen (19.5%), Bangladesh (19.0%), Iraq (16.0%), UAE (11.8%), Oman (9.8%), and others in 2024.

Value Chain Analysis

From sheet cutting to final testing and packaging, the production of a domestic fan requires around ten distinct steps once the raw material is procured. Most of the raw material requirements of the industry are met through local vendors, who also in most cases import the primary raw materials. Quality checks include power consumption tests, revolution per minute, electric current flow, and air delivery. The industry, on average, add value of between 35 to 40% as mentioned by industry participants.

Potential Export Markets for Domestic Fans

For the purpose of this study, the potential export markets have been first sorted based on their regional similarities and then further bifurcated into those having intensive or extensive margins. The European markets have remained largely untapped for domestic fan exports from Pakistan. Although domestic fans from Pakistan face zero tariffs, non-tariff barriers are stringent, and difficult to comply with for exports to the EU market for which the estimated export potential is $442.0 million. Other top potential markets include countries in Africa, Asia, and the Middle East that have export potential of $114.5 million, $322.3 million, and $231.4 million, respectively. Opportunities are also available under existing trade agreements, domestic fans from Pakistan can be exported under preferential tariffs to China, Malaysia, and Indonesia.

Demand-Supply Analysis

The demand for electric fans has mainly been fueled by the housing sector growth, access to electricity, increase in GDP per capita, the rate of inflation, and urban population growth. The notable supply-side factors include exchange rate, unit wage change, productivity growth rate, and loans to consumer electronics manufacturers. Equilibrium analysis allows examining how demand and supply-side factors are correlated.

Competitiveness

This study uses a blended approach for measuring competitiveness at the industry level.

i. Factor Conditions:

Absence of domestic raw materials: Domestic fan manufacturers use 50-60% imported raw materials i.e. Electric steel sheets, plastic, copper, aluminum, and printed circuit boards (PCBs) are major raw materials and components imported by the domestic fan industry.

Cost components of domestic fan industry: The cost breakup for the domestic fan industry depending on firm-level efficiency ranges from; (1) Raw materials and components 70-80%, (2) Utilities (electricity, gas, and water used directly in production) 2-3%, (3) Labor 5-7%, (4) Overheads (administrative expenses, depreciation, maintenance, logistics, and other indirect costs) 10-12%.

Absence of skilled labor: There is an acute shortage of skilled labor. Seasonal employment opportunities limit the industry's ability to retain skilled labor.

ii. Demand Conditions

Domestic markets and seasonal business of the industry: The annual demand for domestic fans in Pakistan is estimated to be between 8-10 million units.

Seasonal production of domestic fans peaks between January and July each year.

Market dynamics: The market is segmented into household and institutional consumers.

Consumer preferences: High-end consumers are primarily brand-conscious whereas others are price-conscious.

Local Market Penetration: The penetration rate of the domestic fan is above 95%. It is estimated that, according to the manufacturers, on average, people replace fans every 3 to 5 years.

Related and Supporting Industries

Local vendor industry: The vendor industry is the backbone of the domestic fan industry. Components that are mainly outsourced through vendors include blades, body, rotor & stator, ball-bearing, PCBs, capacitors, guards, canopies, and others.

Fan Development Institute: It was established in 2005 with an aim to improve the skill set of workers. However, the facilities and curriculum need to be upgraded/updated in consultation with industry.
Local universities and R&D: Industry suffers from a lack of institutional linkages for R&D support for domestic fan industry.

Pakistan Council of Scientific & Industrial Research (PCSIR): The PCSIR complements the domestic fan industry and fulfils some of the testing requirements. However, upgradation is required in order to facilitate EMC and RoHS tests which are mandatory for obtaining CE mark.

Firm, Strategy, Structure, and Rivalry

Domestic fan industry structure: The industry is mainly clustered around small, medium, and large manufacturers. Economies of scale, export orientation, in-house production capacity, and access to import quota for raw materials are distinguishing features of the small, medium, and large-scale manufacturers.

Underutilized production capacity: The average production capacity utilization rate is between 50-60% for the domestic fan industry.

Domestic market concentration: Around 40% of sales in the domestic market are catered to by six large manufacturers.

Barriers to entry: There exists high barriers to entry specially for setting up manufacturing units outside Gujrat and Gujranwala, as vendors and suppliers of raw materials are mostly located in these two cities.

Government

Unprotected local fan industry: There is no restriction on exports of recycled aluminum & copper and this has caused a shortage of these raw materials for domestic manufacturers.

Customs tariffs anomalies: Some of the imported raw materials are subject to high tariffs. Moreover, the inclusion of the domestic fan industry in the third schedule of the Sales Tax Act is creating difficulties.

International Factors

Potential export markets: Top potential markets include those in the Middle East, Africa, and Europe. International competitiveness: Pakistani fans are more durable and competitive in terms of quality than those from India and China. However, Chinese fans are priced competitively.

Risks in international businesses: International business exposure has further heightened the business risk. The major sources of risk are counterparty credit risk and exchange rate risk, especially when exporting to high-risk countries.

Barriers to Trade

There are tariff and non-tariff barriers in the potential markets. Major non-tariff barrier is certification requirements. The CE marking for the EU, and UL marking for the US require compliance with stringent testing requirements, the testing facilities for these marking are not available in Pakistan.

Government Policies and Initiative

The following policies are mainly for engineering sector, very few initiatives are specific to the fan industry.

- Duty and Tax Remission for Exports (DTRE) (S.R.O. 450(I)/2001)
- Electric Sheet Import Quota (S.R.O. 565(I)/2006&2014)
- Export Finance Scheme
- Long Term Financing Facility (LTFF)
- Refinancing Facility for Modernization of SMEs
- SME Bank Loan Regime

Strategies followed by Competitor Countries

In India, there are generous duty drawback rates under the Merchandise Exports from India Scheme (MEIS) and production-linked incentive schemes favor the domestic fan industry. Chinese domestic fan industry enjoys a lower cost structure due to economies of scale, availability of raw materials, and domestic testing facilities.

SWOT Analysis

Strengths: The core strength of Pakistan's domestic fan industry includes the industry's capacity to manufacture high-quality durable electric fans which math the demand requirements of consumers in hotter regions. Industry's readiness to adopt technological trends and innovative transformation to energy efficient fans are the major strengths of the domestic fan industry.

Weaknesses: Overcollateralization for loans, high dependency on imported raw materials, unskilled labor, small firm size and lack of marketing and branding are limiting the industry's potential for growth. Opportunities: The domestic market is growing due to increase in population, urban migration and increasing incomes. Export opportunities for the EU, Africa, and the Middle East as well as penetration of BLDC and inverter fan into the domestic market provide scope for further expansion of the market to cater to increased demand. Global climate change and competitive exchange rates are favorable factors to enter into international markets.

Threats: Volatile raw material prices, export of recycled raw materials, inconsistent tariff regime, and cumbersome tax requirements have all negatively impacted the business environment and are posing a continuous threat to the industry's survival.

Key Findings

- Reportedly, domestic fans manufactured in Pakistan are more competitive than those of India and China in terms of quality. However, Pakistani exporters are not able to offer competitive prices due to high cost of production and heavy reliance on imported raw materials.

- Major supply-side disruption in the domestic fan industry is being seen due to a shortage of raw materials, especially recycled metals. Scrap from the world is being imported, recycled into aluminum and copper ingots, and then being reexported to China amid a ban on recycling activities in China for environmental reasons.

- Recycled copper, steel, and aluminum are being exported at prices higher than domestic market prices. Exporters are however under-invoicing their shipments, their listed export prices are closer to those that prevail in the domestic markets. Large manufacturers are of the opinion that linking copper and aluminum export prices with London Metal Exchange (LME) could mitigate the problem the problem whereas SMEs suggest a ban on raw material exports to allow them to remain competitive.

- Pakistan's exports of domestic fans in 2024 were $31.5 million. There exists an export potential worth $1,931.6 million to the top domestic fan importing countries in the world.

- The local domestic fan industry has successfully substituted imports of direct current (DC) fans and is now self-sufficient in BLDC and inverter fans. The industry is able to cater to the needs of the domestic market besides catering to exports. Over the last 8 years, the industry first localized manufacturing of DC, BLDC, and inverter fans and is working on the localization of PCB kits.

- Pakistan's domestic fan industry operates on a seasonal manufacturing cycle, and this results in a semi-specialized labor force and unutilized capacity. Access to international markets could potentially help utilize production capacity better.

- Pakistani fans are efficient even in regions where the ambient temperature reaches 50-55ºC. Due to such high efficiencies and better revolutions per minute, these fans are more competitive than those of India and China in markets where the climate is relatively hot.

Chapter 1

The Global Domestic Fan Industry

The Global Domestic Fan Industry

1.1. What is a Domestic Fan?

The term domestic/household fan is generally used to describe ceiling fans, table fans, pedestal fans, exhaust fans, and wall fans. A fan is an electrical device that consumes power to create circular air motion, generating airflow. An electrical fan consists of various parts such as an electric motor, PCB unit, blades, flywheels, rotors, and mechanisms for mounting the fan such as a ball-and-socket system.

According to standard international nomenclature, a fan having a wattage below 125W is categorized as a "domestic fan" whereas fans categorized as "industrial fans" are those having wattage equal to or greater than 125W.

1.2. Overview of the Global Domestic Fan Market

The household fans market size has grown steadily in recent years. It is expected to have grown from $8.50 billion in 2024 to $8.84 billion in 2025 at a compound annual growth rate (CAGR) of 4.1%. This growth can be attributed to consumer preferences for cooling solutions, energy efficiency concerns, urbanization and housing trends, climate and weather patterns, regulatory standards and certifications.

The global household fan market size is expected to see steady growth in the next few years. It is expected to grow to $10.34 billion at a compound annual growth rate (CAGR) of 4.0% by 2029. The growth in the forecast period can be attributed to growing marketing strategies and consumer education, integration with renewable energy, urbanization and compact living, health and air quality concerns, innovations in design and aesthetics. Major trends in the forecast period include quieter operations and noise reduction, energy efficiency and eco-friendly designs, smart and connected features, innovative design and aesthetics, versatility and multi-functionality.

The expansion of electrification, particularly in rural areas, has significantly contributed historically to the growth of the household fan market. The increased availability of electricity, coupled with a simultaneous rise in disposable incomes, has spurred the demand for household fans. In India, the percentage of rural population with access to electricity has risen to 89.3%. This, coupled with a per capita net disposable income which has increased to $2,018.53, has amplified the purchasing power of households and led to growth in the household fan market.

The global domestic fan market can be segmented by product, by distribution channel, by end-user, or by geography. On the basis of product type, the ceiling fan segment is expected to continue to dominate the global market owing to increasing adoption of ceiling electric fans in domestic, commercial and industrial sectors across the globe.

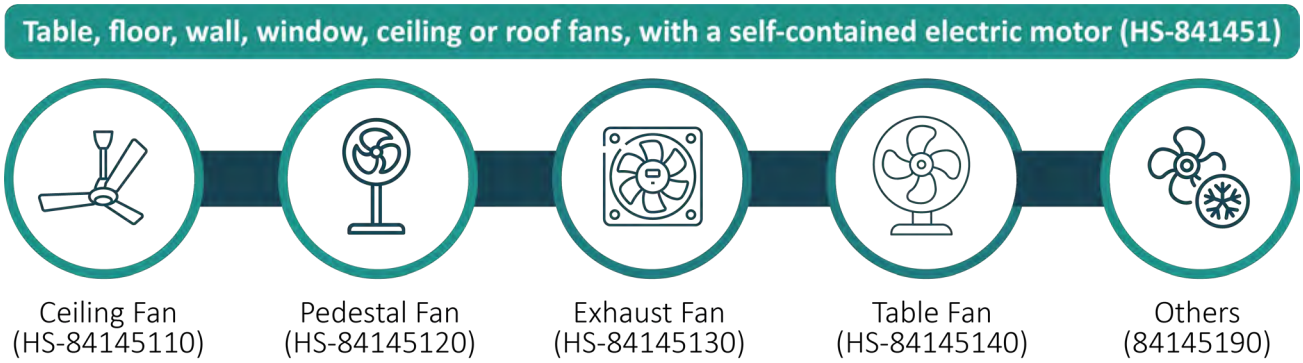
Based on the distribution channel, the retail segment is expected to dominate the global electric fan market due to increasing bulk demand for electric fans from various sectors. Other distribution channels include multi-brand stores, exclusive stores, and online platforms.

Classification on the basis of end-user demand shows that the household segment is expected to dominate as compared to the commercial segment in the wake of increasing construction activities in emerging markets. In terms of geography, the middle east and Africa are likely to demand more domestic fans because of the relatively hot climate in both regions and an increase in purchasing

power, especially in the case of African consumers. Also, more durable fans as opposed to plastic-made disposable fans are expected to become popular in the European markets as a result of global climate change.

1.3. Break-up by HS-Codes

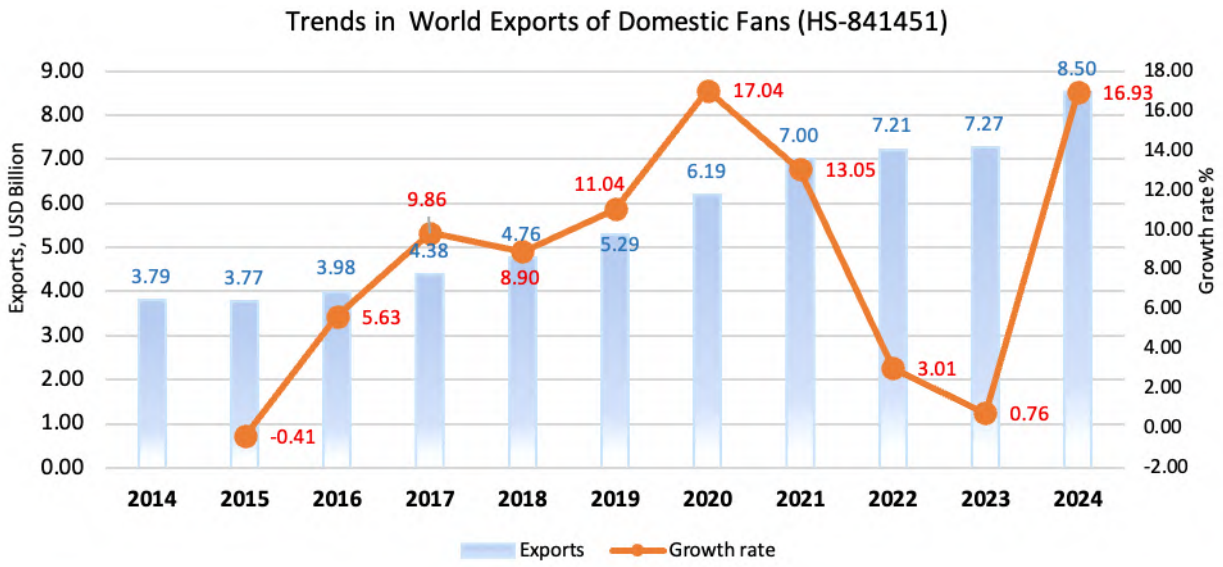
Under Harmonized System (HS) for international trade, the HS-code designated for domestic fans is HS-841451 with product description 'Table, floor, wall, window, ceiling or roof fans, with a self-contained electric motor'. At the country level, national tariff lines (or HS-08 digits) for domestic fans include ceiling fan (HS-84145110), Pedestal Fan (HS-84145120), Exhaust Fan (HS-84145140), and others (HS-84145190).



1.4. Trends in World Exports of Domestic Fans

World exports of domestic fans (HS-841451) have been increasing since 2014 and reached US$ 8.50 billion in 2024. During the last decade, the highest annual growth in global exports of domestic fans was observed in 2020 with an increase of 17.04%. The post COVID period witnessed a decline in growth of domestic fan exports with the lowest value of 0.76% in 2023, which is considered the year of global recession and high inflation. In 2024, the growth in domestic fan exports recovered and reached 16.93% with a value of US$ 8.50 billion. This seems to indicate that, unlike other home appliances, domestic fans can be considered as consumer essentials.

Figure 1: Trends in World Exports of Domestic Fans (HS-841451)



Source: ITC Trade Map

1.5. The Top Global Domestic Fan Exporters

The following table lists the top 15 global exporters of domestic fans (HS-841451) and Pakistan's rank in 2024. China ranked first with an export share of 81.40% followed by Malaysia with an export share of 2.44%, Mexico (2.04%), Taipei, Chinese (1.64%), and the US (1.46%). Pakistan ranked at the 15th position as a global exporter of domestic fans with a market share of 0.37%. Pakistan's rank as a global exporter of domestic fans has improved by two ranks, from being 17th in 2020 to 15th in 2024, the CAGR in Pakistan's case from 2022 to 2024 is 1.12%, indicating the positive growth of the sector for Pakistan.

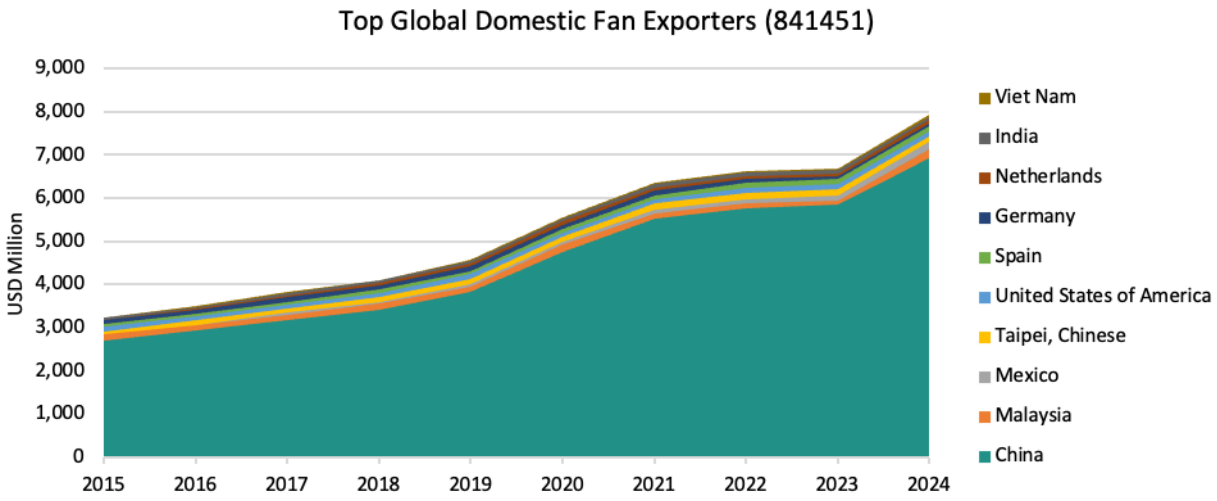
Table 1: Top 15 Global Domestic Fans Exporters

Rank	Exporters	Export Value in USD million			Change 2022-24 (%)	Export Share 2024	CAGR 2015-24 (%)	Average Unit price (USD)
		2022	2023	2024				
	World	7,210.69	7,265.58	8,495.64	17.82		8.46	
1	China	5,756.60	5,837.05	6,915.22	20.13	81.40	9.82	11
2	Malaysia	115.46	95.53	207.72	79.91	2.44	5.36	65
3	Mexico	107.57	130.91	172.90	60.73	2.04	33.66	-
4	Taipei, Chinese	147.94	135.31	139.02	-6.03	1.64	6.04	14
5	United States of America	116.17	123.17	124.30	7.00	1.46	2.60	46
6	Spain	104.11	111.43	94.01	-9.70	1.11	3.10	37
7	Germany	87.63	82.33	78.87	-10.00	0.93	0.16	49
8	Netherlands	75.86	56.97	78.55	3.54	0.92	14.85	25
9	India	69.67	66.89	70.35	0.98	0.83	4.21	14
10	Viet Nam	29.20	37.08	60.46	107.06	0.71	12.58	-
11	Panama	41.58	45.50	56.10	34.91	0.66	5.91	-
12	Thailand	67.89	55.21	50.88	-25.06	0.60	0.06	-
13	Italy	42.61	42.22	44.29	3.95	0.52	4.51	38
14	Ukraine	35.13	32.61	38.93	10.81	0.46	3.99	15
15	Pakistan	32.41	30.25	31.50	-2.83	0.37	1.12	17

Source: ITC Trade Map, Author's Calculations

The stacked area chart below illustrates the trend across the top exporters of domestic fans. A sharp rise in Chinese exports of domestic fans is visible which is followed by those for Malaysia, Mexico, Taipei Chinese, and the US. Germany's share has reduced whereas Mexico has significantly increased its share in global exports over the period 2022-24.

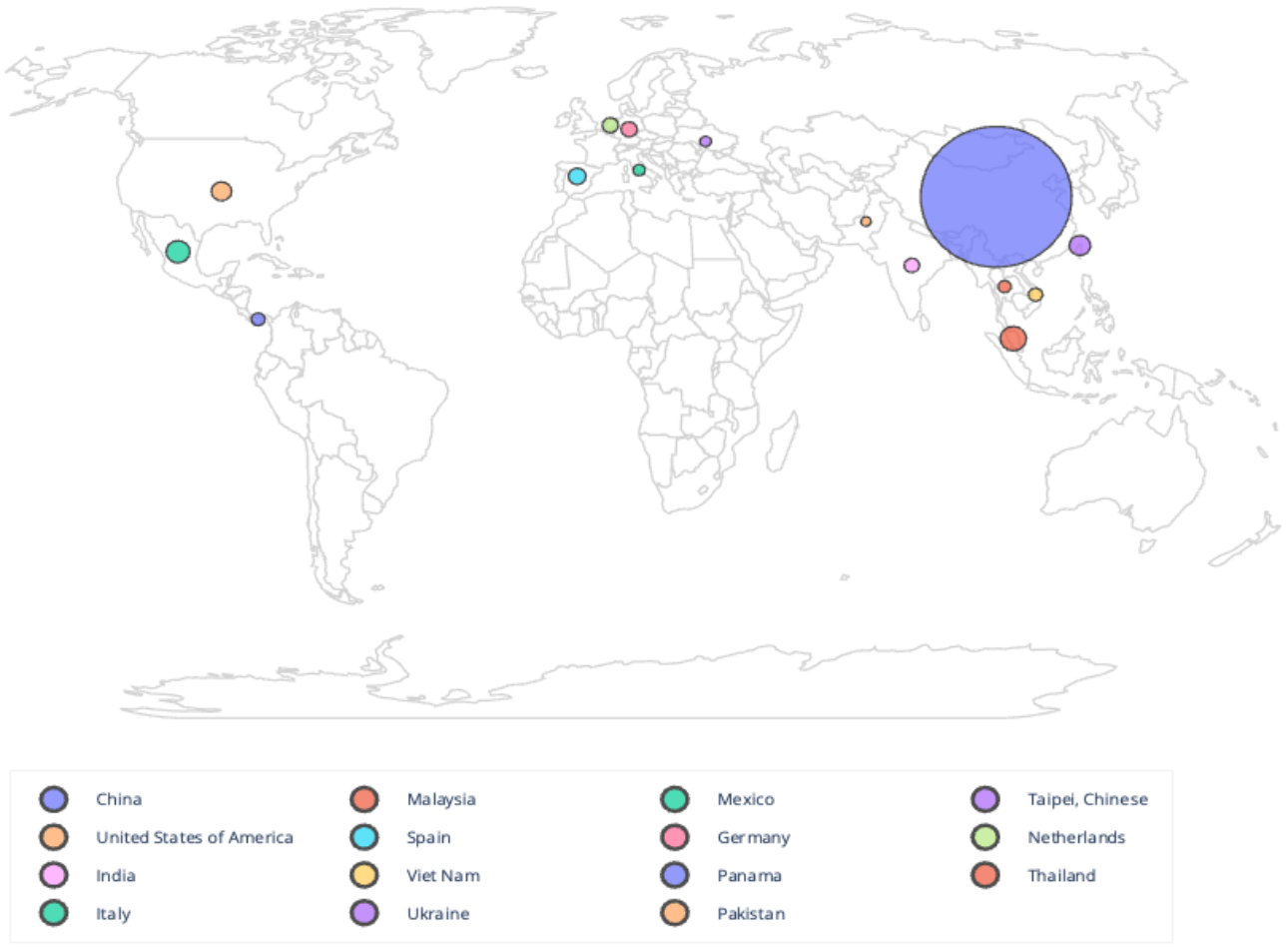
Figure 2: Top Global Domestic Fan Exporters



Source: ITC Trade Map

The map below shows the major exporters of domestic fans. The size of the circles on the map is proportionate to the value of exports. A cursory look shows that China is the largest exporter of domestic fans whereas other notable exporters include Malaysia, Mexico, Taipei, Chinese, USA, and Spain.

Figure 3: Top Exporters of Domestic Fans



Source: ITC Trade Map

1.6. The Top Global Domestic Fan Importers

The table below lists the top 15 global domestic fan importers along with Pakistan's ranking. The USA accounted for 32.14% of global domestic fan imports in 2024 followed by Japan with an import share of 4.21%, Vietnam has an import share of 3.21%, Korea 3.09%, and Iraq 2.90%.

Pakistan ranked 139th in the list of global importers of domestic fans with an import share of 0.03%. Pakistan's import of domestic fans is on a declining trend, the rank in 2020 was 90th, the CAGR for three years import (2022-24) is-20.41%. A decline in imports can be attributed to import substitution and the domestic industry's adaptability to changing trends.

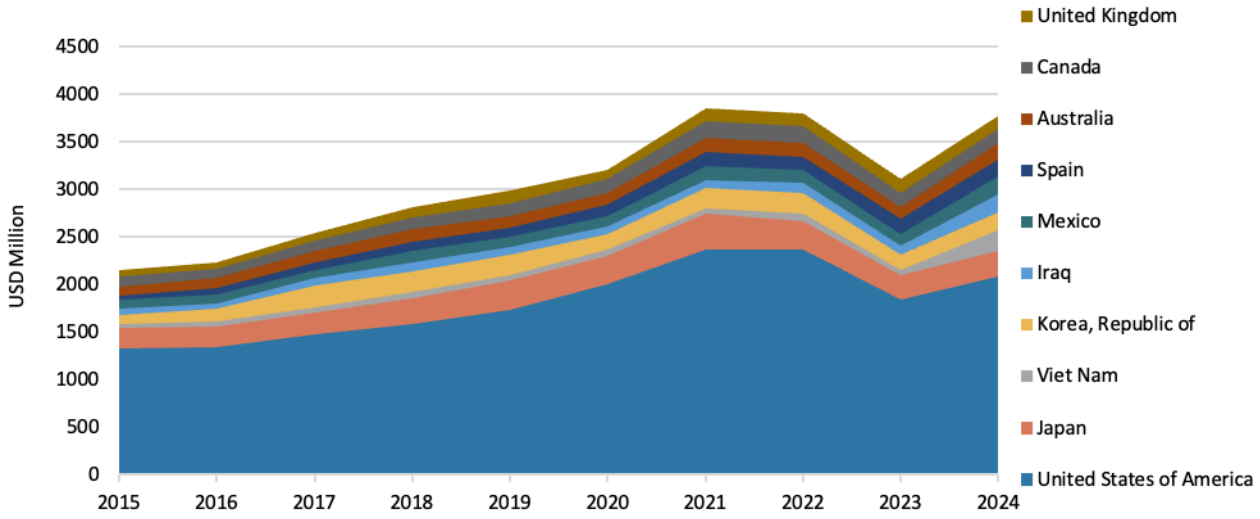
Table 2: Top 15 Global Domestic Fans Importers

Rank	Importers	Import Values in US$ million			Change 2022-24 (%)	Import Share 2024 (%)	CAGR 2022-24 (%)
		2022	2023	2024			
	World	6,013.71	5,228.23	6,482.04			
1	United States of America	2,372.94	1,847.16	2,083.64	-12.19	32.14	4.61
2	Japan	297.15	246.78	272.85	-8.18	4.21	2.62
3	Viet Nam	73.24	52.59	207.91	183.87	3.21	15.22
4	Korea, Republic of	224.80	171.48	200.53	-10.80	3.09	7.57
5	Iraq	98.84	84.22	188.06	90.28	2.90	11.00
6	Mexico	144.20	131.66	187.42	29.98	2.89	7.33
7	Spain	131.83	159.83	176.90	34.19	2.73	15.28
8	Australia	149.28	124.43	166.66	11.64	2.57	5.66
9	Canada	166.33	139.52	149.82	-9.92	2.31	4.26
10	United Kingdom	139.55	151.33	140.16	0.44	2.16	6.77
11	France	123.28	147.04	136.68	10.87	2.11	8.01
12	Germany	118.30	98.09	127.16	7.49	1.96	6.69
13	United Arab Emirates	71.66	88.03	113.01	57.71	1.74	8.16
14	Saudi Arabia	77.79	91.43	93.74	20.50	1.45	7.88
15	Panama	56.97	61.56	83.14	45.93	1.28	6.79
139	Pakistan	3.42	1.38	1.89	-44.73	0.03	-20.41

Source: ITC Trade Map

The stacked area chart shown below portrays the trend across the global importers of domestic fans over the period 2015-2024. The United States of America remained a major import destination and has posted a steady growth since 2015 with a slight decline due to the global inflationary recession of 2023.

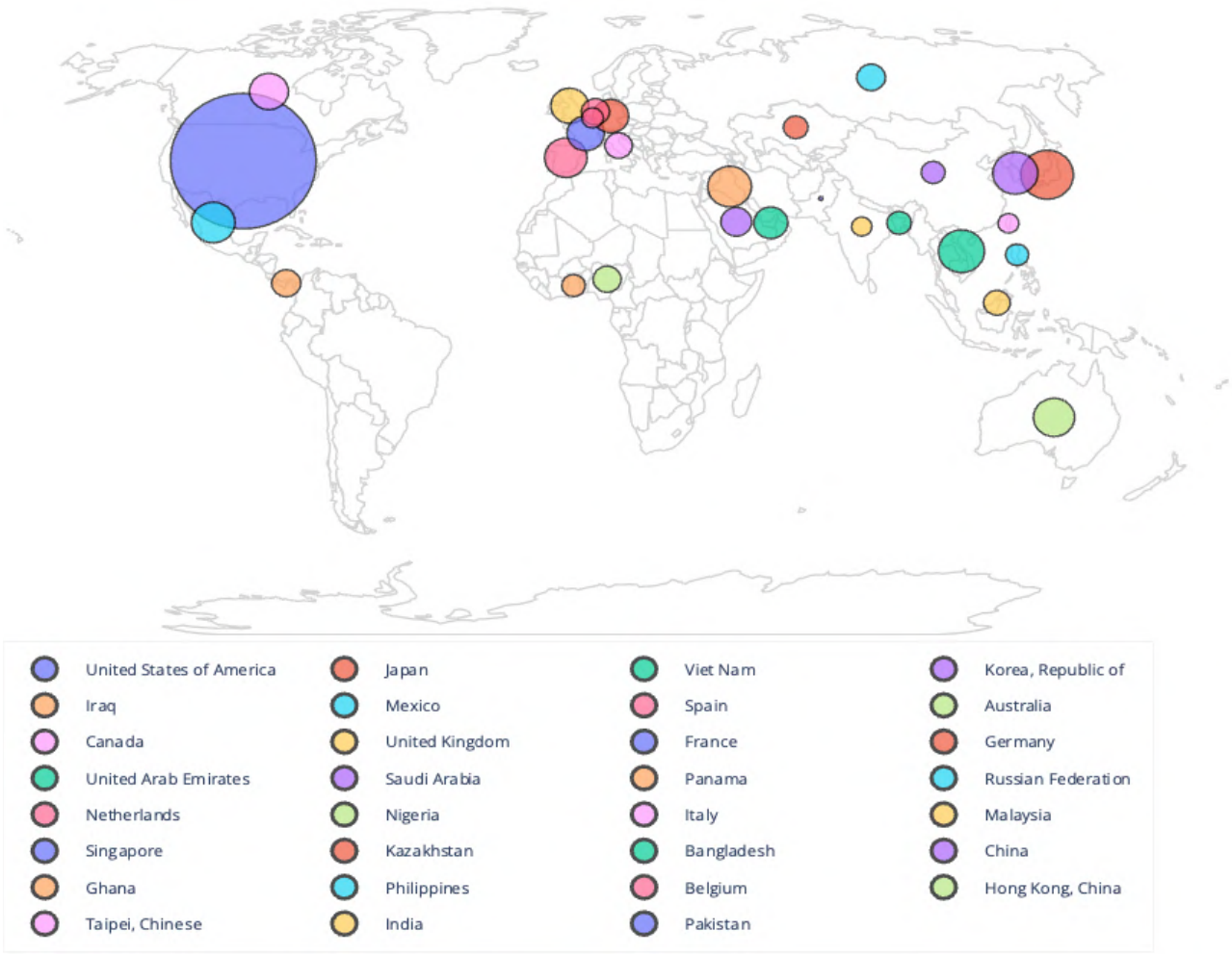
Figure 4: Top 10 Global Importers of Domestic Fans



Source: ITC Trade Map

The figure below shows the major importers of domestic fans. A larger circle for the US reflects a bigger import share relative to other countries. Other major importers include Japan, Vietnam, Korea, Iraq, and Mexico.

Figure 5: Top Importers of Domestic Fans



Source: ITC Trade Map

Chapter 2

Pakistan's Domestic Fan Industry

Pakistan's Domestic Fan Industry

2.1. Overview of Pakistan's Domestic Fan Industry

Fan manufacturing is a part of the light engineering sector and is one of the oldest industries of Pakistan. The fan industry in Pakistan has its origins before partition and has existed since 1942. The fan industry is mainly clustered in four major cities namely; Gujrat, Gujranwala, Lahore and Karachi. However, more than 90% of the country's domestic fan production is centered in Gujrat and Gujranwala. Due to the development of vibrant clusters around these two cities over the years, firms operating in these clusters have been benefiting from external economies such as easy access to raw materials with over 700 vendors operating within the area. Vendors mainly supply a range of components such as castings, blades, guards, down rods; accessories including plastic, rubber, electric parts, and sub-assemblies including electric motors to fan manufacturers in Gujrat and Gujranwala. Around 300 domestic fan manufacturing units are currently operating in Pakistan and these contribute about 0.3% to the national GDP and around 0.10% to exports. The industry provides direct employment to around 50,000 and indirectly to an additional 150,000 workers.

Table 3: Industry Snapshot

Industry Snapshot	
Number of Units	300
Direct Employment	50,000
Indirect Employment	150,000
Production Capacity	8-10 million units
Penetration Rate	95-98%
Contribution to GDP	0.3%
Exports (2024)	32 million USD
Share in Pakistan Exports	0.10%

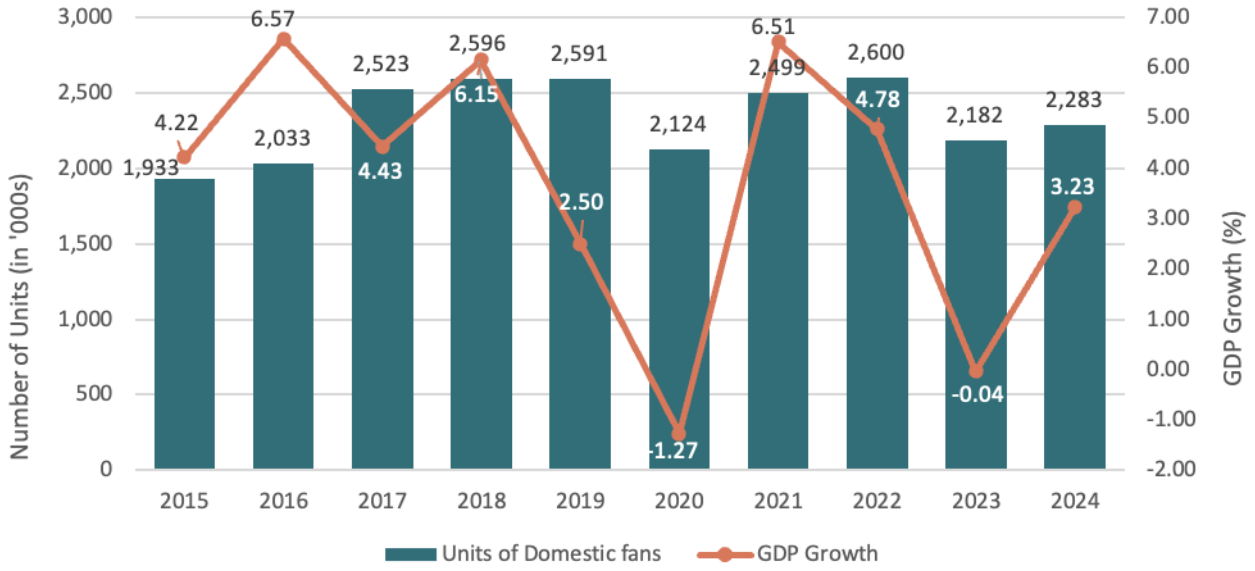
Source: Pakistan Electric Fan Manufacturers Association

Over the last decade, the fan sector in Pakistan has shown robust growth which is mainly driven by an increase in demand as a result of rapid rural-urban migration, electrification of villages, solarization, improvements in living conditions, and climate change.

The figure below shows the trend in domestic fan production as well as the real GDP growth rate. The total production of domestic fans stood at 2.28 million units in the year 2024[1] – primarily driven by the recovery after the 2023 recession. Both real GDP growth and the manufacturing of domestic fan appear corelated, an increase in real GDP growth is likely to increase domestic fan production.

1. Source: Pakistan Bureau of Statistics

Figure 6: Domestic Fan Production



Source: Pakistan Bureau of Statistics

Over the last decade, the fan sector in Pakistan has shown robust growth which is mainly driven by an increase in demand as a result of rapid rural-urban migration, electrification of villages, solarization, improvements in living conditions, and climate change.

The figure below shows the trend in domestic fan production as well as the real GDP growth rate. The total production of domestic fans stood at 2.28 million units in the year 2024[1] – primarily driven by the recovery after the 2023 recession. Both real GDP growth and the manufacturing of domestic fan appear corelated, an increase in real GDP growth is likely to increase domestic fan production.

2.2. Product Mix

Ceiling fans represent 65% of the total fan production in Pakistan while pedestal fans account for another 25%. The remaining 10% include table fans, table-cum-pedestal fans, wall bracket fans, and exhaust fans.

2.2.1. Product Mix by Category

- Ceiling Fan
- Pedestal Fan
- Table Fan
- Louver Stand Fan
- Louver Wall Fan
- Wall Bracket Fan
- Plastic Exhaust Fan
- Metal Exhaust Fan

2.2.2. Product Range

For each of the product categories, domestic fans are available in different sizes. The table below shows the size range for each category as per the demand of the market.

Table 4: Product Range

Products	Size (inches)
Ceiling Fan	36" | 48" | 56" | 60"
Pedestal Fan	18" | 24" | 30"
Wall Bracket Fan	12" | 14" | 16" | 18" | 24"
Table Fan	12" | 14" | 16" | 18"
Louver Stand Fan	14"
Louver Wall Fan	14"
Plastic Exhaust Fan	8" | 10" | 12"
Metal Exhaust Fan	8" | 10" | 12" | 16" | 18" | 20" | 24"

Source: Pakistan Electric Fan Manufacturers Association

2.3. Characteristics and Growth Drivers for Pakistan's Domestic Fan Industry

Nature of the Industry:

The domestic fan industry has a seasonal manufacturing & sales cycle and hence relies mostly on contractual labor. Sales from the Gujrat and Gujranwala manufacturing cluster are mostly destined for the local market with up to 80 percent production sold within the country. Demand is overwhelmingly concentrated in the January to early July period. The replacement sales and production of domestic fans are also linked with the business cycles within Pakistan.

Climate Change:

Pakistan's climate has changed markedly. During the last 100 years, the average temperature in Pakistan has increased by 0.60C whereas the projected average rise in Pakistan's temperature, by the end of the current century, is estimated to be between 3-50C considerably higher as compared to the global average (ADB, 2017). Moreover, due to rising temperatures in northern Khyber Pakhtunkhwa, Gilgit Baltistan and Kashmir, the demand for fans is increasing, fans are being installed in areas where there was no demand previously.

Monopolistic Competition:

The market follows monopolistic competition as there is a large number of manufacturers offering similar products that can only be differentiated based on brand, quality, and prices. Pakistan's domestic fans are reportedly superior in quality to those from India and China; however, they are not competitively priced in international markets.

Types of Fans Produced in Pakistan

Pakistan's fan industry produces a wide variety of fan types that serve both domestic and export markets. The main product category is ceiling fans, which remains the most widely used cooling solution in Pakistani households. Other important categories include pedestal fans, table fans, bracket fans, exhaust fans, and industrial ventilation fans designed for commercial and manufacturing spaces. In recent years, the product base has expanded significantly with the introduction of DC[2] fans, BLDC[3] fans, and inverter fans, which now dominate the domestic market. While the export mix is still more traditional, the overall domestic product landscape has shifted decisively toward energy-efficient fan models.

2. Direct Current
3. Brushless Direct Current Fan

Transformation of the Product Mix: Dominance of Inverter Fans

Unlike earlier years—when Pakistan mostly produced AC induction–motor fans—the industry today has undergone a significant transformation. Inverter and DC-based fans now account for nearly 70% of the industry's total production, reflecting rapid technological adoption driven by consumer demand. Conventional AC fans continue to be produced in small quantities, but primarily for export markets where buyers prefer Pakistani AC fans due to their durability, airflow strength, and long-term reliability. Thus, the shift towards inverter technology has not eliminated AC fans entirely; instead, it has segmented production based on domestic versus export needs.

Energy Efficiency and Technological Advancement

Energy efficiency is now a central characteristic of Pakistan's fan industry. Traditional AC ceiling fans typically consume 70–80 watts, whereas modern inverter ceiling fans consume only 25–35 watts, offering up to 60–70% energy savings. This shift has substantial implications for household electricity bills, especially during extended summer months. The industry has also rapidly upgraded from basic DC fans to more sophisticated BLDC and inverter technology, incorporating improved motor design, better aerodynamics, and electronic controls. This rapid evolution has allowed Pakistani manufacturers to keep pace with global standards and to meet the needs of a domestic market increasingly sensitive to rising electricity costs.

Drivers of Transformation: A Demand-Led Shift

The transformation toward inverter technology has been overwhelmingly demand-driven, rather than policy-driven. With the steep rise in electricity tariffs over the past decade, households urgently sought ways to reduce energy consumption. Initially, the market turned to imported Chinese DC fans, which were substantially more efficient than locally produced AC fans. As demand surged, local manufacturers recognized a strong market opportunity and began reverse-engineering and then producing DC fans domestically. Over time, this innovation process intensified, leading to the introduction of BLDC fans and eventually inverter-controlled models with advanced motor efficiency and smart control systems. The entire industry adapted quickly because consumers were actively seeking alternatives that would lower their monthly electricity bills.

Innovation Capabilities and Industry Response

The fan industry's response to rising demand for energy-efficient products demonstrates strong local innovation capabilities. Manufacturers invested in new machinery, motor winding technology, and electronic controller development. Although many components—such as magnets, bearing, and PCBs—are predominantly imported, local firms have nonetheless built significant expertise in motor design, airflow optimization, and working on the manufacturing/assembling of PCBs. Custom-designed BLDC motors, remote-controlled functionality, and inverter-based electronics are now largely developed and assembled domestically. This innovation momentum suggests that the industry is moving beyond basic assembly toward more technologically sophisticated production.

Cost Comparison: Inverter Fans vs. Conventional AC Fans

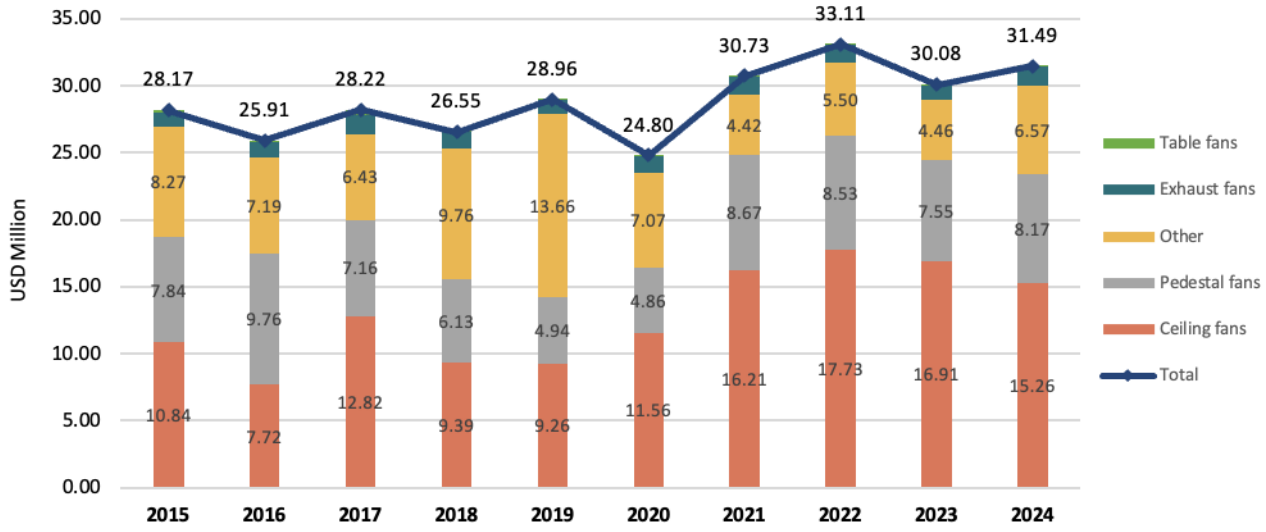
Despite their higher upfront cost, inverter fans provide substantial long-term savings. A standard AC fan typically retails for PKR 6,000–9,000 and consumes around 50 to 75 watts, while inverter fans cost PKR 10,000–16,000 but consume only 25–35 watts. The monthly electricity savings from switching to an inverter fan is significant, depending on hours of use. For households operating multiple fans, total savings become even more significant. This cost advantage has played a major role in accelerating consumer adoption to the point where inverter fans now dominate the domestic market.

2.4. Pakistan's Exports of Domestic Fans (HS-841451)

During 2015-2019, Pakistan's domestic fans showed volatility in export values, COVID exacerbated the situation and a substantial decline was observed in 2020, the export value dropped from USD 28.96 million in 2019 to USD 24.80 million in 2020. The industry recovered after COVID and the export value grew to USD 30.73 million in 2021 and USD 33.11 million in 2022, this is the all-time high export value for Pakistan's domestic fans. Due to global inflationary recession, like any other sector, the global demand for domestic fans also declined. The export value of Pakistan's domestic fans declined to USD 30.08 million in 2023, however, in 2024, the export value increased to USD 31.49 million.

The figure below shows the overall mixed trends in exports of domestic fans from Pakistan over the period 2015-2024. Exports of 'Ceiling Fans' contributed the most to Pakistan's overall exports of domestic fans.

Figure 7: Pakistan's Exports of Fans (HS-841451)



Source: ITC Trade Map

The table below shows the destination-wise export statistics for Pakistan's domestic fans. In 2024, exports to the world were USD 31.50 million which is an improvement from USD 30.25 million in 2023. Exports were primarily directed towards Yemen (19.50%), Bangladesh (19.00%), Iraq (16.00%), UAE (11.80%), and Oman (9.80%) in 2024

Table 5: Pakistan's Exports of Domestic Fan (HS-841451) to the World

	Country	Export Value (USD Million)			Share in Pakistan's FAN exports (%)	Unit value (USD/ unit)	Growth in Value (2020-2024)	Average tariff faced by Pakistan (%)
		2022	2023	2024				
	World	32.41	30.25	31.50	100.00	17.00	5.00	
1	Yemen	5.16	5.73	6.14	19.50	20.00	26.00	5.00
2	Bangladesh	9.81	6.67	5.97	19.00	17.00	5.00	25.00
3	Iraq	5.81	5.88	5.03	16.00	14.00	1.00	-
4	United Arab Emirates	2.58	3.27	3.73	11.80	18.00	2.00	5.00
5	Oman	4.05	1.88	3.09	9.80	17.00	-11.00	5.00
6	Saudi Arabia	1.99	2.74	2.06	6.50	19.00	8.00	5.00
7	Afghanistan	0.39	0.99	1.76	5.60	14.00	-9.00	5.00
8	USA	0.00	0.87	1.61	5.10	24.00	-	0.00
9	Djibouti	0.64	0.88	0.65	2.10	19.00	8.00	19.50
10	South Africa	0.10	0.12	0.26	0.80	25.00	6.00	5.00
11	Ghana	0.00	0.00	0.23	0.70	18.00	-	20.00
12	Sri Lanka	0.05	0.15	0.18	0.60	21.00	5.00	0.00
13	Italy	0.00	0.00	0.16	0.50	22.00	-10.00	0.00
14	Cameroon	0.09	0.12	0.13	0.40	24.00	-	20.00
15	Qatar	0.36	0.22	0.10	0.30	25.00	-11.00	5.00

Source: ITC Trade Map, Author's Calculations

2.5. Trends in Pakistan's Exports of Fans – Product Category and Destination

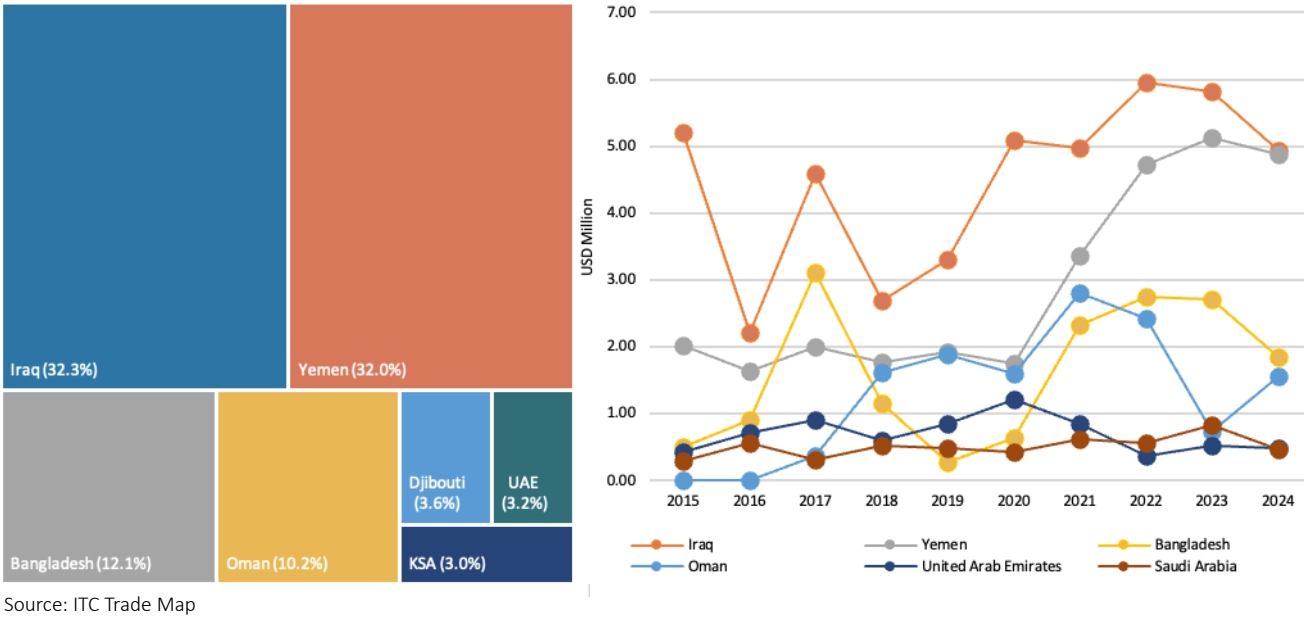
This section provides category and destination of exports along with the trends for Pakistan's domestic fan industry.

Ceiling Fans (HS-84145110)

In 2024, the ceiling fan accounted for the largest share in overall domestic fan manufacturing and exports from Pakistan. The left panel of the figure below shows the countries having larger share in Pakistan's ceiling fan exports. Iraq (32.30%), Yemen (32.00%), Bangladesh (12.10%), Oman (10.20%), Djibouti (3.60%), UAE (3.20%), and KSA (3.00%) were the major export destinations for ceiling fans in 2024.

The right panel of the figure below illustrates an overall increasing trend in exports of ceiling fans from Pakistan to Iraq and Yemen whereas a volatile trend is evident for exports to Oman and Bangladesh. Exports to KSA and UAE have been relatively stable over the period 2015-2024.

Figure 8: Pakistan's Exports of Ceiling Fan (HS-84145110)

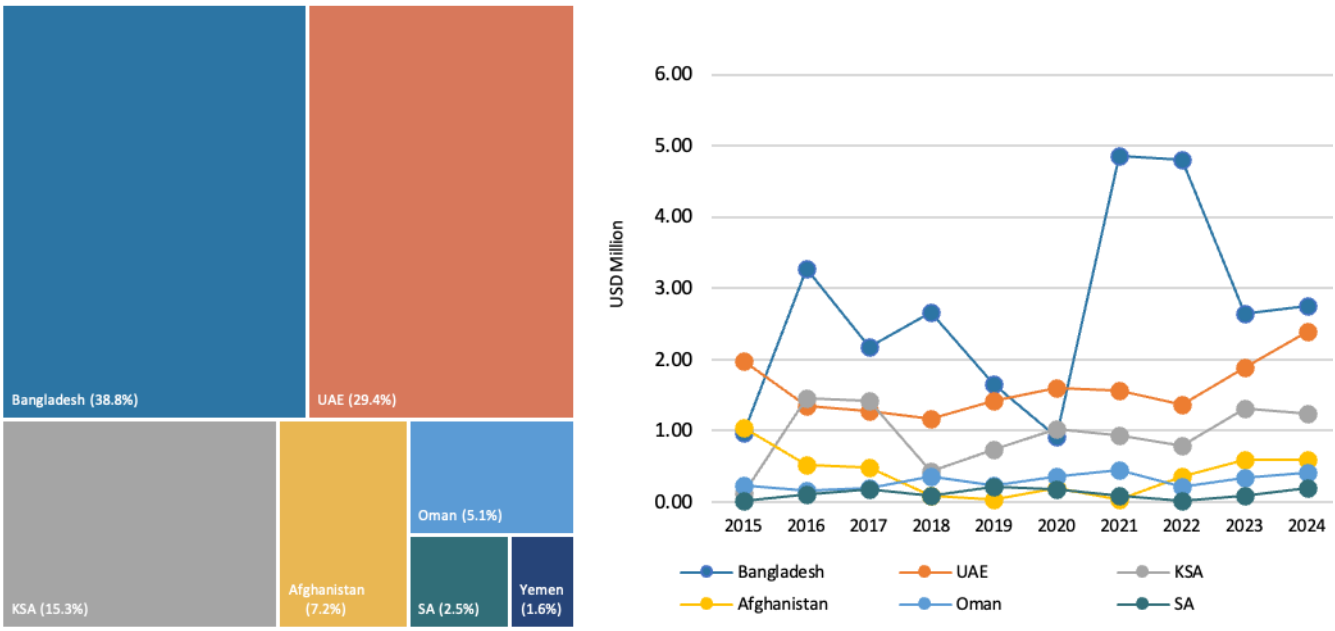


Source: ITC Trade Map

Table Fans (HS-84145130)

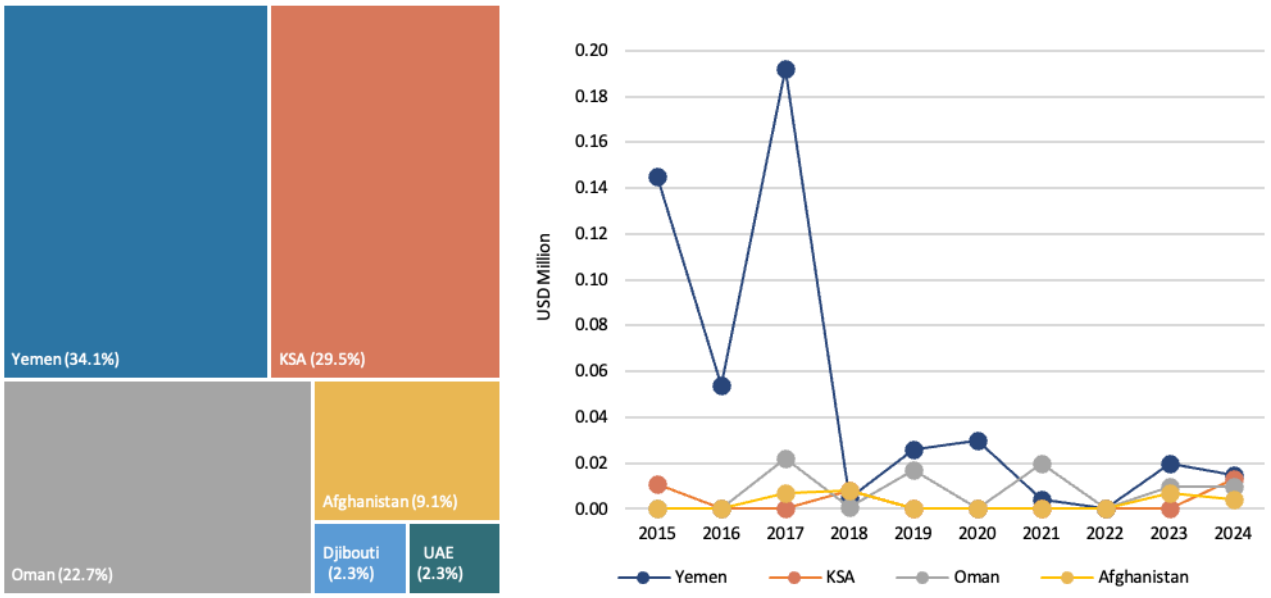
The USD 0.04 million worth of exports of table fans (HS-84145130) in 2024 was a decrease from USD 0.08 million in 2023. For the period 2015-2024, the export of table fans is highly volatile and on a declining trend. Pakistan's exports of 'Table fans' had been mostly directed towards Yemen till 2017; however, it has been showing a downward trend as shown in the right panel of the figure below. The left panel of the figure below shows that Yemen accounts for 34.10% of Pakistan's exports of table fans. The other major destinations are KSA (29.50%), Oman (22.70%), Afghanistan (9.10%), Djibouti (2.30%), and the UAE (2.30%).

Figure 9: Pakistan's Exports of Pedestal Fan (HS-84145120)



Source: ITC Trade Map

Figure 10: Pakistan's Exports of Table Fan (HS-84145130)

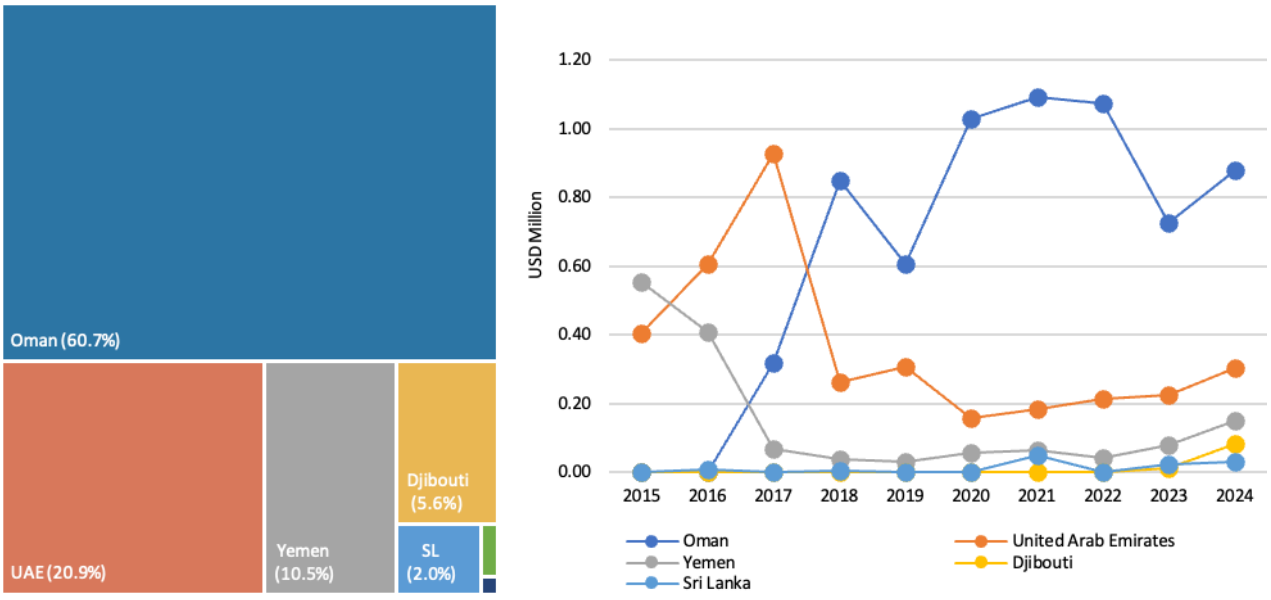


Source: ITC Trade Map

Exhaust Fans (HS-84145140)

Pakistan's exports of 'exhaust fans (HS-84145140)' to the world reached USD 1.44 million in 2024 up from USD 1.09 million in the previous year. Exports were mostly directed towards the Middle Eastern markets. Around 60.70% of total exhaust fan' exports from Pakistan were destined for Oman which is followed by the UAE (20.90%), Yemen (10.50%), Djibouti (5.60%), and Sri Lanka (2.00%). Among the destination markets, Oman's share is increasing while the UAE's and Yemen's share have shown a significant decline.

Figure 11: Pakistan's Exports of Exhaust Fan (HS-84145140)

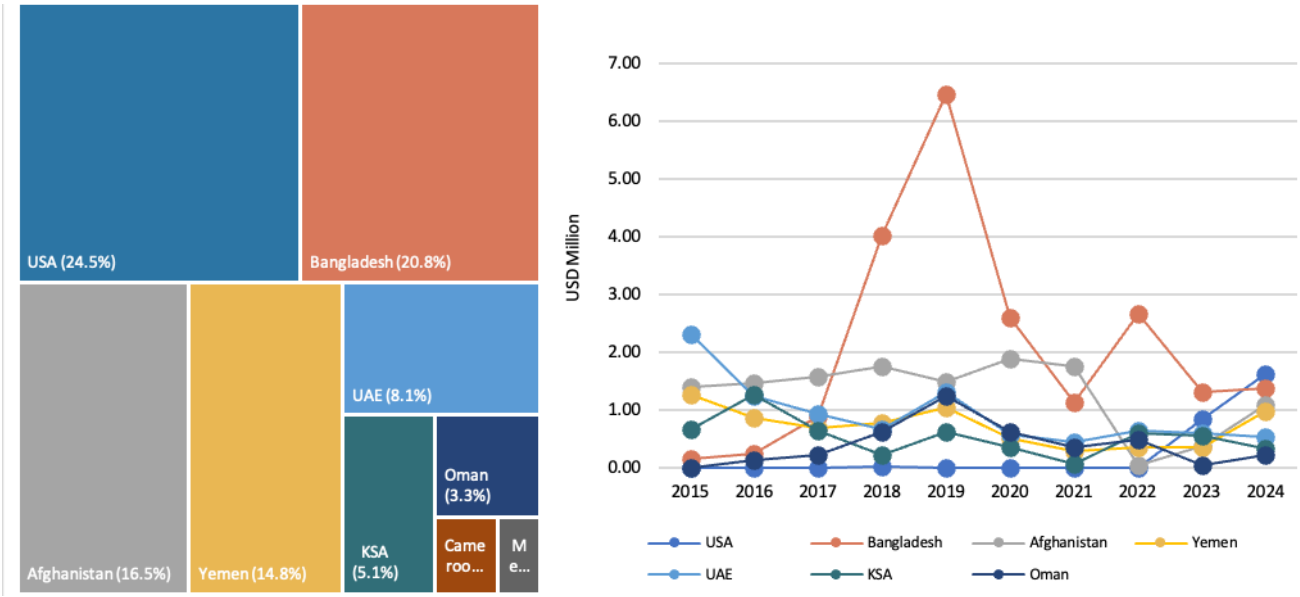


Source: ITC Trade Map

Other Fans (HS-84145190)

Other fans (HS-84145190) mainly include louver fans, circumatic fans, and bracket fans. Pakistan's exports of 'other fans' were mainly directed towards the USA (24.50%), Bangladesh (20.80%), Afghanistan (16.50%), Yemen (14.80%), the UAE (8.10%), KSA (5.10%), and Oman (3.30%). Overall exports of 'other fans' to the world increased to USD 6.57 million in 2024 up from USD 4.46 million in 2023. The surge is mainly driven by a higher level of exports to the USA and Bangladesh. The right-hand panel of the figure below shows the trend in Pakistan's exports of other fans to its top export destinations. Exports to Bangladesh reflect high volatility but an increasing trend in the period 2015-2024. Exports to the USA started increasing in 2022 and became the top export destination for Pakistan's 'other fans' in 2024. Afghanistan was the second largest market for Pakistan's 'other fans' but due to regime change in Afghanistan, exports fell to zero in 2022 however it has started rising and has become the third largest export destination for Pakistan's 'other fans.

Figure 12: Pakistan's Exports of Other Fans (HS-84145190)



Source: ITC Trade Map

2.6. Pakistan's Imports of Domestic Fans

Pakistan's overall imports of domestic fans in 2024 were USD 1.89 million. Fan imports are on a declining trend, the percentage change for the period 2022-2024 is -44.73%. Imports are mainly dominated by exhaust fans, battery-operated fans, DC fans and decorative fans. China is the major import source of domestic fans for Pakistan and is followed by the USA, Germany, and the UAE.

Table 6: Pakistan's Imports of Domestic Fan (HS-841451)

		Value imported (USD thousand)			Share in Fan imports (%)	Unit value (USD/ unit)	Growth in imported value between 2020-2024	Average tariff applied by Pakistan (%)
		2022	2023	2024				
	World	3.42	1.38	1.89	100.00	7.74	-25.00	
1	China	2.90	0.98	1.61	85.50	7.36	-26.00	20
2	United States of America	0.05	0.19	0.08	4.10	9.40	14.00	20
3	Germany	0.01	0.01	0.08	4.00	12.00	9.00	20
4	United Arab Emirates	0.02	0.01	0.03	1.30	16.00	-7.00	20
5	Italy	0.03	0.04	0.02	0.90	10.00	-12.00	20
6	Spain	0.00	0.00	0.01	0.60	9.53	-11.00	20
7	Türkiye	0.02	0.02	0.01	0.60	12.00	-53.00	20
8	Malaysia	0.01	0.01	0.01	0.30	9.49	-16.00	20
9	Bahrain	0.00	0.01	0.01	0.30	12.00	50.00	20
10	France	0.02	0.03	0.01	0.20	9.86	18.00	20

Source: ITC Trade Map, Author's Calculations

2.7. Tax Structure of the Domestic Fan Industry

2.7.1. Direct Tax Regime

i. Taxes on Corporate Income

The tax rate on corporate income for the manufacturing sector is currently at 29% whereas the tax rate applicable to small companies is 20%.

Table 7: Taxes on Corporate Income

Company Type	Tax rate (%)
Banking Company	39
Public Company other than a banking company	29
Any other company	29
Small company	20

https://taxsummaries.pwc.com/pakistan/corporate/withholding-taxes

ii. Super Taxi. Taxes on Corporate Income

In addition to above, super tax is imposed at the following slab rates:

Table 8: Super Tax

Income (PKR, million)		
Over	Not over	Super tax rate (%)
150	200	1
200	250	1.5
250	300	2.5
300	350	3.5
350	400	5.5
400	500	7.5
500		10

Source: Institute of Corporate and Taxation

iii. Taxation of small and medium enterprises (SMEs) engaged in the manufacturing sector

For the purpose of taxation, SMEs are classified into the following two categories, and tax on taxable income is required to be computed at the rates given below:

- Category 1: 7.5% of the taxable income, where annual business turnover does not exceed PKR 100 million.
- Category 2: 15% of the taxable income, where annual business turnover exceeds PKR 100 million but does not exceed PKR 250 million.

SMEs can also opt to be taxed under the final tax regime (FTR). The said option is required to be exercised at the time of filing of the tax return and the same will be irrevocable for the next three tax years. The SMEs who opt to be taxed under the FTR will not be subject to tax audit under sections 177 and 214C. The category-wise rate of tax under the FTR is given below:

- Category 1: 0.25% of the gross turnover, where annual business turnover does not exceed PKR 100 million.
- Category 2: 0.5% of the gross turnover, where annual business turnover exceeds PKR 100 million but does not exceed PKR 250 million.

Minimum tax on turnover does not apply to SMEs.

2.7.2. Indirect Tax Regime

Sales Tax

Under the Finance Act 2025, electric fans continue to be listed in the Third Schedule of the Sales Tax Act, which subjects certain consumer goods to sales tax at 18% of their retail price. This means that manufacturers must print or emboss the retail price, inclusive of tax, on packaging, and the tax is collected on that declared value rather than on wholesale or ex-factory prices. Importantly, if such goods are also covered under the Eighth Schedule, the specific rates prescribed there apply in addition to the retail price regime. For electric fans, being in the Third Schedule also implies that withholding tax is not applicable, and they are exempt from the minimum value addition tax at import stage under the Twelfth Schedule. Furthermore, commission expenses exceeding 0.2% of supplies are disallowed unless the recipient is on the Active Taxpayers List, further tightening compliance requirements for fan manufacturers.

Duties

Some of the components and raw materials used in manufacturing domestic fans are subject to customs duties, additional custom duties and regulatory duties. A list of these components/raw materials along with their PCT codes are provided in the table below;

Table 9: Duties on Raw materials and Parts used in Electric Fans

PCT Code	Description	2024-25 (%)			2025-26 (%)		
		CD	ACD	RD	CD	ACD	RD
3911.1090	Impregnating Resin	20.0	4.0	0.0	20.0	4.0	0.0
8534.0000	Printed Circuits	20.0	-	-	10.0	-	-
3920.6300	Polyester Film	16.0	2.0	0.0	-	-	-
7225.1900	Electrical Silicon Steel Sheet	0.0	0.0	2.5	0.0	2.0	2.5
8482.1000	Ball Bearings	11.0	0.0	8.0	10.0	2.0	8.0
8483.3020	Plain Shaft Bearings	20.0	4.0	0.0	20.0	4.0	0.0
8536.5099	Push Button Switch	20.0	4.0	0.0	20.0	4.0	0.0
8544.1900	Enamelled Aluminium Wire	20.0	4.0	0.0	20.0	4.0	0.0
3208.9090	Polyurethane Varnish	20.0	4.0	5.0	20.0	4.0	5.0
3208.9011	Polyamide Varnish	11.0	0.0	5.0	10.0	2.0	5.0
9107.0000	Timer 5-15 Min	3.0	0.0	0.0	0.0	2.0	0.0
3902.3000	Polyproplen Co Polymar	3.0	2.0	0.0	0.0	2.0	0.0
3901.9000	LLDP	3.0	2.0	0.0	0.0	2.0	0.0

Source: FBR

Chapter 3

Value Chain Analysis

Value Chain Analysis

Among domestic fan categories, ceiling fans dominate both manufacturing and exports. Ceiling fans are followed by pedestal fans in both the numbers manufactured, sold domestically and exported. Value chains however are almost similar for all types of fans; this section discusses the value chain of ceiling fans as an example.

Casting 3%
93% ratio of energy, rates are high
Labor and equipment ratio is 7%.
Traditional casting techniques

Overheads 10%
Major cost component in overheads is electricity which covers 50% consumption
Expensive certifications & standards cost

Factory Margin 4.3%
Value addition margin is low in small & medium sized manufacturers
Modern technologies are being acquired by large manufacturers

Raw Materials 70%
Major raw materials ratio: 17% aluminum, 30% steel sheet, 10% copper wire, 43% others.60% raw materials are imported

Assembly & Fitting 3.5%
95% labor ratio
5% ratio of machining process
Small manufacturers are still using obsolete machinery

Marketing 1.2%
Only large manufacturers are involved in branding
Small & medium manufacturers are mainly focused on domestic marketing

3.1. Raw Materials Procurement

The domestic fan industry operates as an assembly line with large as well as small producers relying on key inputs from vendors. Raw materials account for around 70 percent of the total cost. Most of the components are provided by the vendors especially to the small-sized producers. Small-sized and medium-sized producers are mostly doing assembly inside their factories. These producers don't make components on their own because it is easier to get the components from the local market. However, the large-scale producers are either importing components directly from China or make some of the components inside their factories. The table below categorizes major components/raw materials as either imported or domestically available.

Table 10: List of Raw Materials and Components – availability

	Parts	Material Composition	Availability
1	Electric Motor	Induction Motor	In-house assembly, Domestically Available
2	Electric Steel Sheet	Electrical Steel Sheet: Si 0.06%	Imported, locally pressed sheets also available
3	Rotor	Rotor - Electrical Steel	Domestically available
4	Copper Wire	Copper Wire 99.99%	Domestically available
5	Insulation Paper	Laminated Paper	Imported
6	Silicate Sleeve	Insulation Sleeve	Domestically available
7	Thermal Protector	Thermal cut out - 160 0c	Imported

	Parts	Material Composition	Availability
8	Body	Aluminum Body	Domestically available
9	Plate	Aluminum Plate	Domestically available
10	Bush	Bush Universal - 9.0mm	Domestically available
11	Tie Lock	Nylon Tie Lock	Domestically available
12	Single Core Wire	20 AWG - Copper 99.99%	Domestically available
13	Axle	Round - Standard	Domestically available
14	Screw RH	Round head screw - 3/8 × 3/16	Domestically available
15	Capacitor	2.5 MFD - 450 V AC	Domestically available
16	Wire Connector	Wire Connector	Domestically available
17	Switch	1-2-3-G-0	Domestically available
18	Power Cable	3×1.00 mm2 - 300 volts	Domestically available
19	Plug	UK - BS 1363 - 9518	Domestically available
20	Insulating Bushing	Wire Washer 6N-4	Domestically available
21	Plastic Material	Polylac - PA707	Imported
22	Paint	Solvent Paint	Domestically available
23	Printed Circuit Board (PCB)		Imported, local production has started

3.2. Production Stages of a Ceiling Fan

The fan assembly process consists of body turning, body drilling, axel turner and winding, fitter, painting, and finally testing and packaging. All of these processes run parallel to each other. The steps of the manufacturing process of a ceiling fan are given below;

1. Steel Sheet Cutting (Rotor/Stator)

In this stage, the laminated electric sheets (ESS) or any other type of sheet (Mild or Drum), used in the rotor and stator armature (in which copper wire is wound) are cut to size in circular form. They are perforated to accommodate the windings within them and are aligned and riveted together according to the required thickness. Automatic Hydraulic Presses, as well as shearing machines, power presses, stamping presses and advanced cutting processes of sheet metal are used


Hydraulic Press Machine


Power Press Machine

Shearing Machine


Surface Grinding Machine

2. Rotor Die Casting and Finishing

The die casting process involves melting of metal in a furnace. The molten metal is poured into a die to get the part in the shape of the die. Usually, it involves rotor casting, in which the rotor is filled with molten aluminum metal to form squirrel-cage winding. The rotary furnaces, and hydraulic presses, use furnace oil, and/or natural gas as fuel.


Surface Grinding Machine

Further, the cast parts undergo finishing, where the external diameter and upper edges of the rings of the rotor are finished on a lathe machine to make it fit easily in the grooves of the fan body. Local belt type lathe machines were previously used for this process, but now almost the entire industry, except for few small manufacturers, is using automatic CNC lathe machines for roughening process.


Surface Grinding Machine

3. Rotor/Stator Turning

In the ceiling fan, the stationary part bearing the copper winding is known as the stator (commonly called armature). The rotor bearing the squirrel winding rotates around the stator. In the case of a pedestal fan, the rotor having squirrel winding rotates inside (as opposed to outside in case of a ceiling fan) the stator, bearing copper windings. A pre-sized fabricated iron axle is pushed into the center of the stator. Both types of grinding machines, imported as well as local are used in the process.

4. Winding

This process involves the coiling of enameled copper wire in the slots of the core of the electric fields. Before winding, paper is inserted inside the slots to avoid short circuits. The large-scale manufacturers use automatic winding machines, wedge inserter machines and automatic paper insertion machines, this helps them in improving material saving, quality, mass production and labor-saving.


Automatic Winding Machine

However, small-scale manufacturers are using manual winding machines for rotor/stator winding.

5. Varnishing

After the winding process, the copper wire is varnished and then baked in the oven to dry it. This process is used to reduce the chance of a short circuit in the electrical field and to keep the coils intact. Further cabling and lead joining process are done manually. Large-scale manufacturers have varnishing plants and wire short circuit testing facilities, whereas small and medium scale manufacturers are mostly dependent on vendors for this process.


Stator Varnish Plant

6. Body and Plate Turning

First, the rotor is pushed into the groove of a pre-cast aluminum body. Then bearings of the required sizes are adjusted in the body (lower side) and the plate (upper side). The machining process is performed on the inside of the rotor to clean it. After this process, the body and the plates go to the other machines for external turning and finishing. Hydraulic presses and lathe machines are used to the process.

7. Drilling and Tapping

At this stage, different sizes of holes and threads are made for fitting the body, plate, and other parts. The machines involved in this process are drilling and tapping machines.

Drilling & Tapping Machine

8. Molding of Plastic Parts

Only large-scale manufacturers have the facility to make a few plastic parts, whereas small and medium sized manufacturers are dependent on vendors. The plastic parts are made through the process of molding. This process is done through injection molding machines. The plastic grains are melted in the injection molding machine and then injected into the mold to attain the desired shape.

Plastic Injection
Molding Machine

9. Assembling and Fitting

The finished body, plate, stator, connection box and other components are brought together in this section. Here they are properly washed with petrol, flushed with air blow and cleaned to remove the metal chips, oil and dust, which normally become stuck to the various parts during the different processes. Usually, press machines are used in the assembling process.

10. Blade Making

All fan manufacturers are purchasing the required sizes of fan blades from vendors. Commonly, there are two types of blades available, there are aluminum blades and recycled aluminum blades. The blades made of recycled aluminum are heavy because of the high levels of impurities that increases the density of the finished product. The use of recycled aluminum rises due to the cost factor. The blades are pressed at an angle of 12 degrees and later they are drilled to connect to the body of the fan. A power press is used in this process.

11. Painting

After completion of assembly/fitting, the finished product is painted. There are two types of practices commonly used in paint technologies, which are enamel and power coating. Enameling is a wet process, in which the oil-based enamel is sprayed over the required surface and then dried either in an oven or in the open air. Only a few small manufacturers use enamel coating methods. Powder coating is the latest technology, in which the surface required for the painting process is ionized first and then powdered paint is sprayed on that surface, further it is heated in an oven to produce a high-class finish.

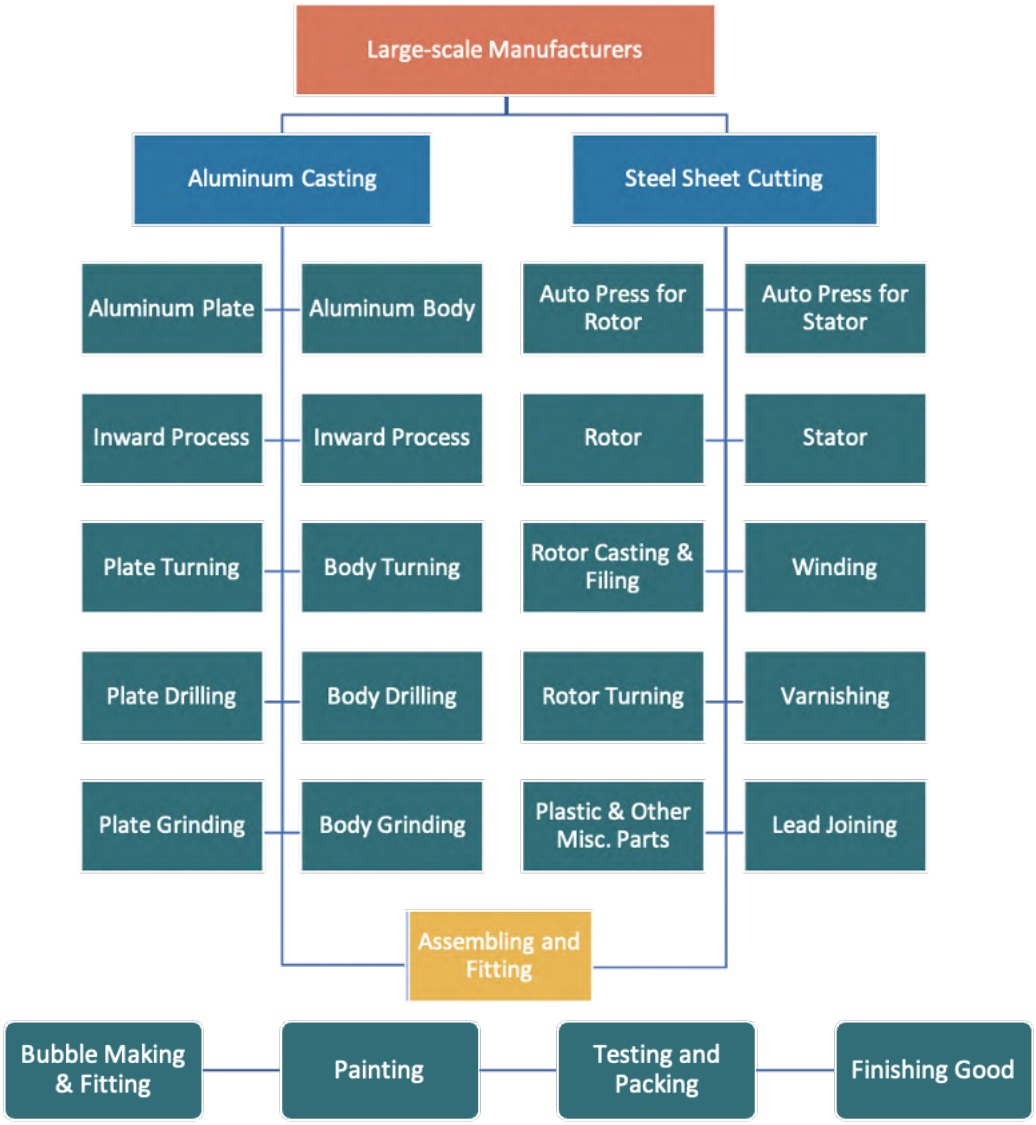
12. Final Testing and Packaging

After painting, the fan goes for final testing and packaging. The fan is hooked and is supplied with power for checking power consumption, current, revolutions per minute, air delivery and noise levels (db). Variation of speed at different voltages is also checked. After testing, the blades are detached; capacitor and power connectors are installed, and nameplates are fitted. The fan is then packed for storing and marketing. Testing equipment involved is both local as well as foreign manufactured.

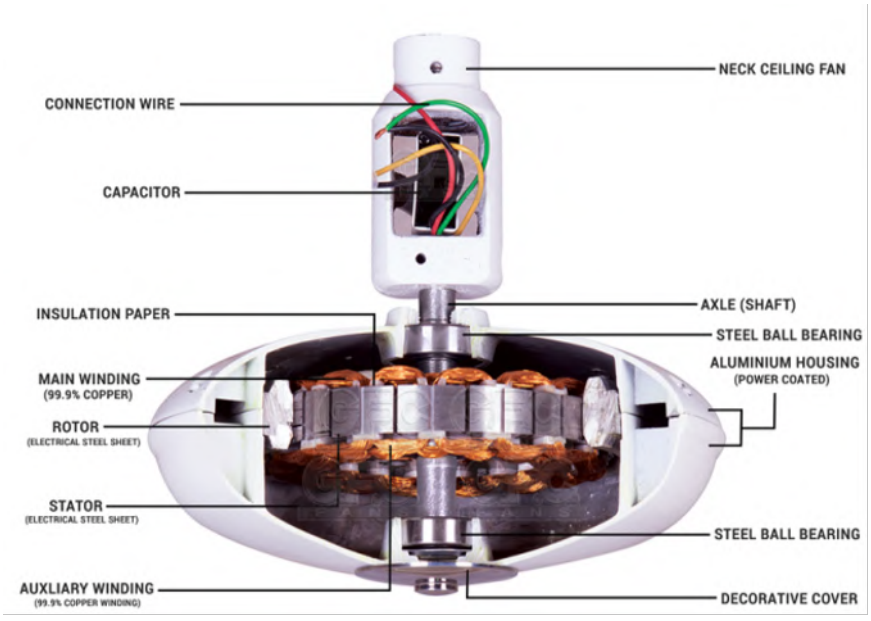
Table 11: Tests Carried During Domestic Fan Manufacturing

S.No.	Description	S.No.	Description
1	Magno Test	7	Ampere Test
2	Starting & Running Test	8	Sound Level Test
3	Voltage Function Test	9	Barring Noise Test
4	Air Delivery Test	10	Winding Test
5	Copper Wire Test	11	Phase Current Test
6	Watts Test	12	Insulation Resistance Test

Process Flow Diagram for the Manufacture of a Ceiling Fan



The figure below provides a view of the ceiling fan along with a description of its components.
Conventional Ceiling Fan



3.3. Quality Checks

PSQCA mandated standards for quality are complied with. Following characteristics are checked to confirm adherence to quality standards:

- Power Consumption Test
- Current
- Revolutions per minute
- Air Delivery

Standards Notified for Domestic Fan

- Performance Standard (PS-1-2010 IEC60879)
- Safety Standard (PS-IEC60335-1 & IEC60335-2-80)

3.4. Outbound Logistics

The dealers and retailers place orders to distributors who in turn forward these orders to manufacturers.

Chapter 4

Potential Export Markets for Pakistani Manufactured Domestic Fans

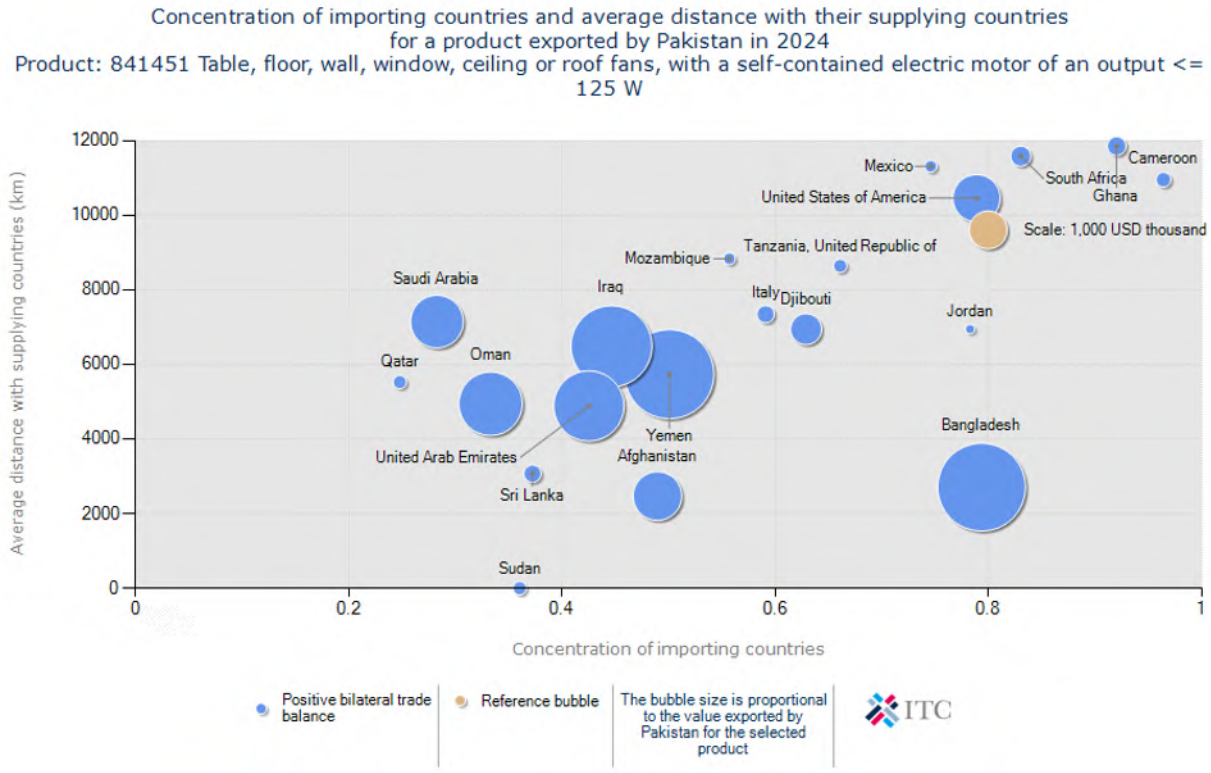
Potential Export Markets for Pakistani Manufactured Domestic Fans

4.1. Market Dynamics of Pakistan's Top 20 Importers of Domestic Fans

Distance and Concentration

The figure below shows the distance and concentration of the top 20 importing countries for Pakistan's domestic fans. The horizontal axis indicates a high concentration of importing countries, with key markets like Bangladesh, Yemen, Iraq, and UAE all having an index value closer to or above 0.5, indicating these nations rely heavily on a few suppliers, including Pakistan. The vertical axis shows that the primary destination markets are relatively close (mostly below 8,000 km), with the exception of the United States, Mexico, and some African countries, which are distant outliers. The bubble sizes, representing export value, highlights Bangladesh as the single largest market by value, despite a relatively high import concentration index, while Middle Eastern countries like Iraq, Saudi Arabia, and the UAE also represent substantial value. This data suggests Pakistan's fan industry is successfully exporting to geographically close, concentrated markets, positioning itself as a key supplier in these regions.

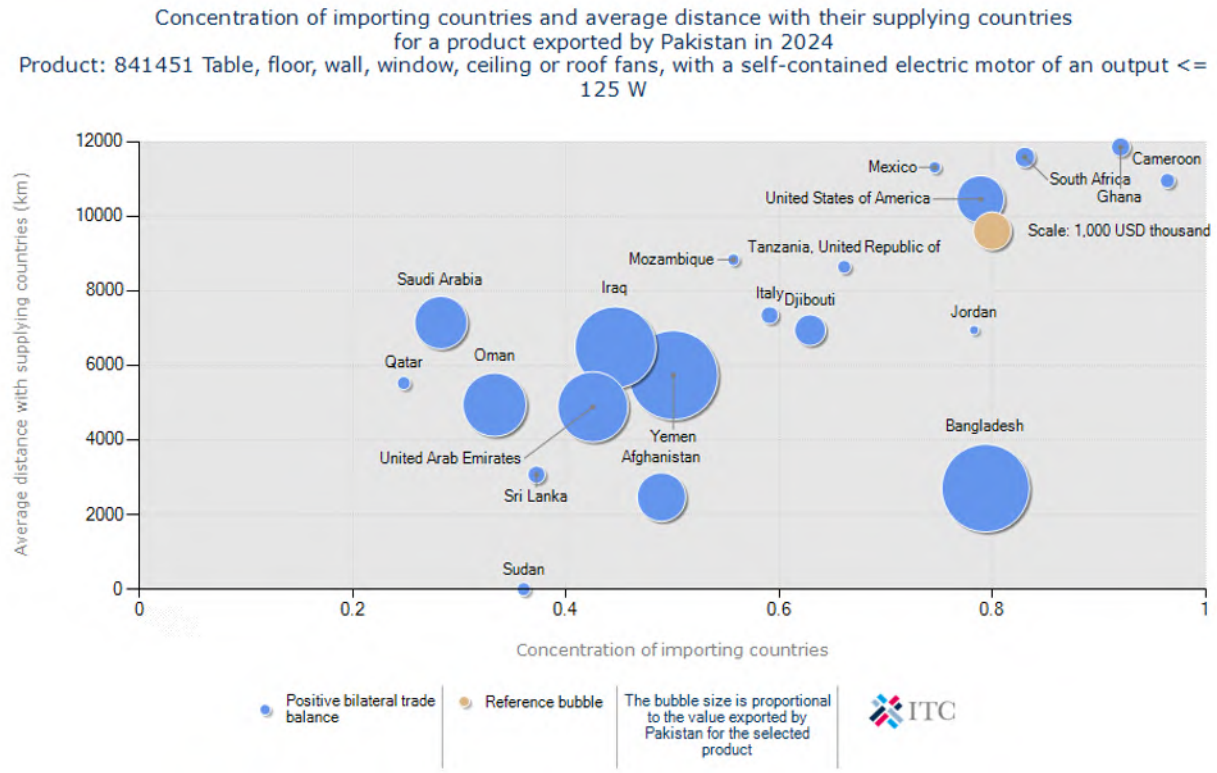
Figure 13: Distance and Concentration



Market Diversification

The bubble chart below analyzes the export destinations for electric fans (HS Code 841451) from Pakistan in 2024, illustrating market growth potential and existing export shares. Key insights reveal that while major established markets like Bangladesh and Iraq represent substantial export value (indicated by large bubbles and high share percentages around 16-19% on the X-axis), Pakistan appears to be losing market share in these fast-growing import markets (indicated by yellow bubbles). Conversely, Pakistan is gaining market share in several other important markets, such as South Africa and Saudi Arabia (blue bubbles), where its export growth outpaces the overall market's import growth. The analysis highlights the need for Pakistan to focus on diversifying its exports and capturing more share in rapidly expanding markets like Bangladesh and Cameroon, while leveraging its growth momentum in the Middle East.

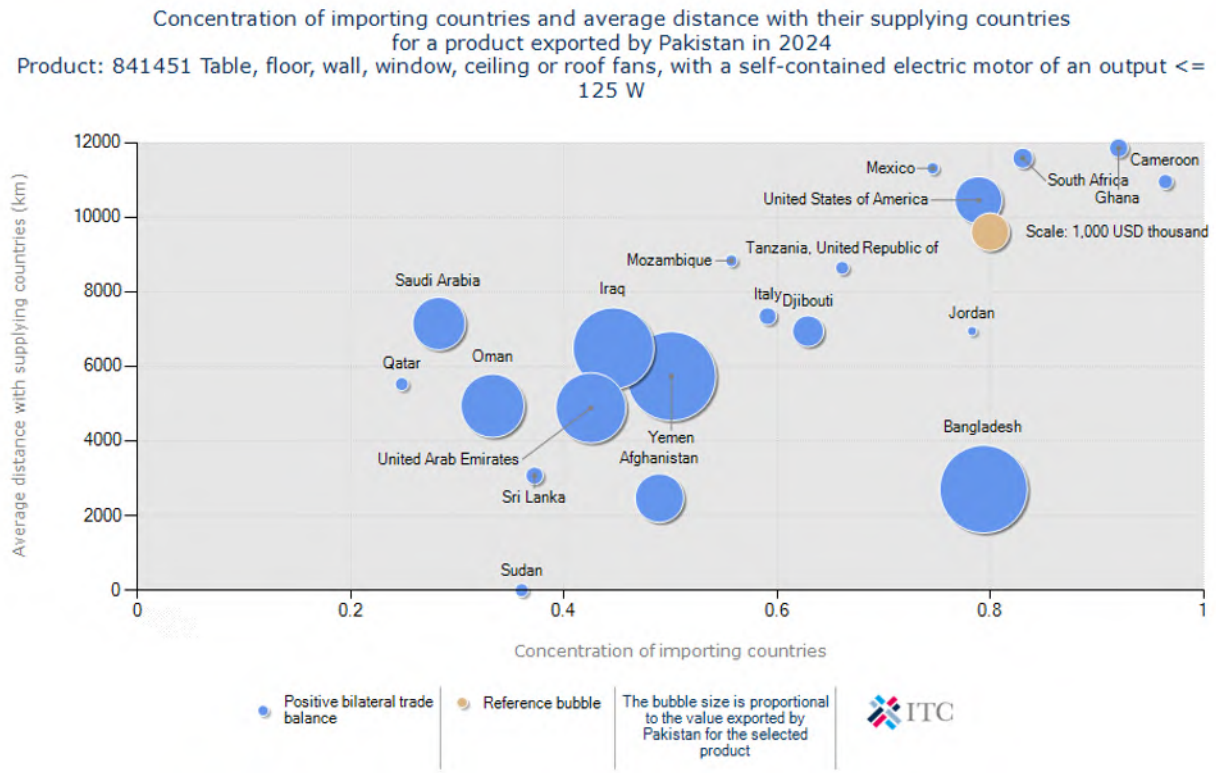
Figure 14: Market Diversification



Growth in Imports from Pakistan vs Growth in Imports from the World

The following bubble chart analyzes the market dynamics for electric fans exported by Pakistan (HS Code 841451), comparing partner countries' import growth from the world (Y-axis) with Pakistan's export growth to those specific partners (X-axis) between 2020 and 2024. The chart identifies several "dynamic markets" where global import demand is increasing rapidly, such as Iraq, Bangladesh, Tanzania, and UAE. However, Pakistan is categorized as losing market share in these high-growth markets, indicated by the yellow bubbles, because its export growth to these countries is slower than the overall import growth of these nations. Conversely, Pakistan is gaining market share in several countries, notably Saudi Arabia, South Africa, and Jordan, where its export growth (blue bubbles) outpaces the global import growth of those partners. The largest single market by volume, Bangladesh, shows both high global import growth and significant value, but Pakistan is not keeping pace with the overall demand expansion there. Overall, the visual data suggests Pakistan has strong momentum in some stable markets but is failing to fully capitalize on the most rapidly expanding global markets for electric fans.

Figure 15: Dynamic Markets and Declining Markets



4.2. Potential Export Markets

Pakistan's domestic fan manufacturers produce almost all types of fans and cater to most of the domestic demand. However, production can be scaled up by expanding into international markets. For this purpose, potential markets were identified based on the following criteria:

- Top-ranked in terms of imports from the world, or
- Either robust increase in imports from the world in 2023-24, or
- A positive compound annual growth rate over the period 2020-24, or
- Any other attributes favoring Pakistan's exports (e.g., distance, consumer preference etc.,)
- Countries with less stringent non-tariff barriers

Export potential is calculated using the following formula:

Export Potential = Country 'i's imports of Fans – Pakistan Exports of Fan to country 'i'

The export potential identified for a market is the maximum possible potential for exports into that market and does not reflect consumer preferences as well as the ability of Pakistani manufacturers to meet this demand.

Potential markets identified using the above formula are further divided by regions. The markets where there is zero or little exports of Pakistani fans have greater export potential for Pakistan and this export is known as extensive potential. Pakistan can also increase exports of fans to those countries where Pakistani fans are already being exported because there is opportunity for growth in those markets, this is the intensive export potential for the Pakistani fan industry.

4.3. Potential European Markets for Exports of Domestic Fans

Europe is a well-developed market, but, one which has very high safety standards. That a product is safe for consumers is usually demonstrated by it bearing a CE marking and this is why a CE marking represents a 'passport' that allows products to be sold in the EU. The CE marking is also recognized in other markets such as the Middle East, North Africa, and some Central Asian countries.

Pakistan currently has only marginal exports of domestic fans to the European regions. There exists an export potential of around USD 500 million for exports of domestic fans to the EU. Although Pakistan faces zero tariffs (due to GSP+ status), imports of fans in the EU are dominated by China.

Table 12: Potential European Markets for Exports of Domestic Fans (HS-841451)

	Potential Markets	Imports from the World				Tariff faced by Pakistan	Pakistan Exports ($ million)	Trade Potential ($ million)	Top 2 exporters to each country		
		Value in 2024 ($ million)	Growth 2023-24	CAGR 2020-24	Unit Value				Exporter	Share (%)	Tariff (%)
Europe	Spain	176.90	10.68	8.89	15.60	0.00	0.00	55.61	China	92.00	1.60
									Italy	1.30	0.00
	United Kingdom	140.16	-7.38	6.34	13.80	0.00	0.03	69.57	China	68.10	1.60
									Malaysia	5.80	1.60
	France	136.68	-7.05	-5.17	20.57	0.00	0.02	80.72	China	55.60	1.60
									Spain	17.70	0.00
	Germany	127.16	29.63	-11.07	28.43	0.00	0.00	70.49	China	48.40	1.60
									Malaysia	12.10	1.60
	Russian Federation	80.48	34.41	15.55	-	0.00	0.00	25.29	China	88.60	0.00
									Türkiye	4.30	0.00
	Netherlands	78.25	62.72	-8.12	15.20	0.00	0.00	42.00	China	51.80	1.60
									Malaysia	14.40	1.60
	Italy	74.50	0.62	1.07	10.60	0.00	0.16	26.33	China	76.50	1.60
									Spain	4.30	0.00
	Belgium	46.08	9.20	-9.40	16.27	0.00	0.00	24.91	China	52.00	1.60
									Netherlands	17.60	0.00
	Poland	37.88	-3.48	-4.75	16.23	0.00	0.00	34.91	China	49.50	1.60
									Germany	17.40	0.00
	Switzerland	29.08	7.14	-4.81	38.38	0.00	0.00	17.52	China	43.90	0.00
									Germany	40.90	0.00

Source: ITC Trade Map, Author's Calculations

European Market Dynamics and Pakistan's Position

- Obtaining CE marking is dependent on stringent certification requirements. These mainly include Low Voltage Direct current (LVD) test, Electromagnetic Compatibility (EMC) test, and Restriction of the use of certain hazardous substances in electrical and electronic equipment (RoHS) test. Pakistani exporters currently need to send their products to China for EMC and RoHS tests.

- The overall estimated cost for getting the CE mark is between PKR 5 to 6 million for each model of domestic fans.

- Lightweight disposable plastic body fans are much in demand in European countries for which China is the major supplier.

- Pakistan cannot offer plastic disposable fans at rates similar to that of China due to relatively expensive raw materials.
- Consumer preferences in Europe are however shifting towards durable and better-quality fans as opposed to cheap disposable fans due to changes in climate conditions.
- Lack of awareness among exporters and difficult payment regimes are the major reasons cited for the low levels of domestic fan exports to African markets from Pakistan.
- The inclusion of African countries among high-risk countries has meant that informal channels used previously for remittances are no longer available.

4.4. Potential African Markets for Export of Domestic Fans

Africa is one of the fastest-growing consumer markets in the world. Household consumption has increased even faster than its gross domestic product (GDP) in the past decade. The domestic fan market is segmented into price-driven and quality-driven segments. The market is dominated by Chinese exporters due to low-end cheap domestic fans. The table below provides potential African markets for exports of domestic fans from Pakistan. Despite internationally competitive domestic fan manufacturing, Pakistan is only able to get a meager share in African markets including Ghana, South Africa, and Cameroon, whereas Nigeria, Morocco, Algeria Guinea, Congo, and Burkina Faso have remained largely untapped.

Table 13: Potential African Markets for Exports of Domestic Fans (HS-841451)

	Potential Markets	Imports from the World				Tariff faced by Pakistan	Pakistan Exports ($ million)	Trade Potential ($ million)	Top 2 exporters to each country		
		Value in 2024 ($ million)	Growth 2023-24	CAGR 2020-24	Unit Value				Exporter	Share (%)	Tariff (%)
Africa	Nigeria	77.58	396.56	46.60	-	20.00	0.00	77.58	China	96.10	20.00
									India	2.00	20.00
	Ghana	55.11	378.63	-	-	20.00	0.23	54.88	China	95.90	20.00
									India	3.40	20.00
	Morocco	27.54	183.84	50.51	-	5.00	0.00	27.54	China	92.80	5.00
									Spain	3.10	0.00
	South Africa	25.19	65.62	4.03	6.39	5.00	0.26	24.93	China	91.10	5.00
									Spain	2.20	0.00
	Cameroon	21.35	556.83	40.76	-	20.00	0.13	21.22	China	98.20	20.00
									Taipei, Chinese	0.90	20.00
	Guinea	14.65	20.42	17.55	-	20.00	0.00	14.65	China	97.80	20.00
									Taipei, Chinese	1.50	20.00
	Algeria	12.49	68.19	13.70	-	30.00	0.00	12.49	China	86.70	30.00
									Türkiye	3.80	30.00
	Gabon	10.63	407.59	36.88	18.00	20.00	0.00	10.63	China	99.20	20.00
									France	0.40	20.00
	Congo	9.31	230.06	45.97	-	10.00	0.00	9.31	China	93.70	10.00
									India	3.70	10.00
	Brukina Faso	9.13	19.88	42.55	-	20.00	0.00	9.13	China	95.50	20.00
									Malaysia	1.70	20.00

Source: ITC Trade Map, Author's Calculations

African Market Dynamics and Pakistan's Position

- Warm weather conditions along with a rapidly increasing consumer class are major drivers for the demand for ceiling fans in the region.
- Fans with high revolutions per minute (RPM) and better air throw are generally preferred in the quality conscious segments in African countries for which Pakistani manufacturers have an edge in producing such fans over India and China.
- Pakistani domestic fan exporters have sufficient capacity to obtain certifications required in African countries such as SABS in South Africa.
- Lack of awareness among exporters and difficult payment regimes are the major reasons cited for the low levels of domestic fan exports to African markets from Pakistan.
- The inclusion of African countries among high-risk countries has meant that informal channels used previously for remittances are no longer available.

4.5. Potential Asian Markets for Exports of Domestic Fans

The Asian market is expected to dominate the global electric fan market in the near to medium term owing to infrastructure development and construction activities in emerging economies such as China and India. In addition, rapidly changing environmental conditions and rising temperature levels in various countries such as India, Pakistan and China along with their huge populations are majorly propelling the demand for domestic fans in the region. Till now, Bangladesh is the only major market for Pakistani fans in Asia with an import value of USD 5.97 million, 10% of Bangladesh's fan imports are from Pakistan second to China.

Table 14: Potential Asian Markets for Exports of Domestic Fans (HS-841451)

	Potential Markets	Imports from the World				Tariff faced by Pakistan	Pakistan Exports ($ million)	Trade Potential ($ million)	Top 2 exporters to each country		
		Value in 2024 ($ million)	Growth 2023-24	CAGR 2020-24	Unit Value				Exporter	Share (%)	Tariff (%)
Asia	Japan	272.85	10.56	-2.12	15.75	0.00	0.00	272.85	China	89.60	0.00
									Malaysia	2.30	0.00
	Viet Nam	207.91	295.33	29.34	-	26.70	0.00	207.91	China	78.20	15.00
									Korea	8.00	26.70
	Korea	200.53	16.94	3.86	14.55	8.00	0.00	200.53	China	91.00	2.90
									Malaysia	2.80	0.00
	Malaysia	69.74	38.47	2.04	9.97	10.00	0.00	69.74	China	89.00	0.00
									Viet Nam	3.10	0.00
	Singapore	60.87	27.11	7.29	23.06	0.00	0.00	60.87	China	60.00	0.00
									Malaysia	28.40	0.00
	Kazakhstan	59.69	154.92	55.22	7.47	0.00	0.00	59.69	China	94.20	0.00
									Russian Federation	4.00	0.00
	Bangladesh	59.59	36.13	27.13	-	25.00	5.97	53.62	China	88.60	25.00
									Pakistan	10.00	25.00
	China	56.43	-34.05	-15.89	10.81	5.40	0.00	56.43	Viet Nam	37.20	0.00
									Korea	14.10	4.90
	Philippines	52.39	16.64	12.46	4.35	7.00	0.00	52.39	China	82.30	0.00
									Taipei, Chinese	5.00	7.00
	Hong Kong, China	45.03	6.71	-9.57	20.92	0.00	0.00	45.03	China	95.50	20.00
									Malaysia	1.70	20.00

Source: ITC Trade Map, Author's Calculations

Asian Market Dynamics and Pakistan's Position

- The highest potential is in markets classified under Extensive Markets where penetration by Pakistani exporters is negligible.
- Due to somewhat similar consumer preferences and shared climate conditions, Pakistani fans have a potential to penetrate various Asian Markets.
- Pakistan faces more tariff restrictions than non-tariff barriers in identified potential Asian markets.
- Domestic fan manufacturers from Pakistan appear to be able to fulfil certification and other compliance requirements for exports to most of the Asian markets.
- Vietnamese electric fan importers believe that Pakistani fans complement the demand for luxury fans in resorts, hotels, and spas. However, relatively higher tariffs on Pakistani domestic fans have been impeding exports to Vietnam.

4.6. Potential Middle Eastern Markets for Exports of Domestic Fans

Growth in the construction industry has been identified as the major driver of demand for domestic fans in the Middle Eastern region. Commercial construction activities are ongoing at a fast pace

The Middle Eastern market is the largest market for Pakistani domestic fans. Yemen with a value of USD 6.14 million is the top importer of domestic fans from Pakistan followed by Iraq (USD 5.03 million) and the UAE (USD 3.73 million). Although countries like, Iraq, UAE, Saudi Arabia, Yemen, and Oman are importing from Pakistan, Pakistan's share in their imports of fans is still very low. These countries possess intensive margin in terms of export potential.

Table 15: Potential Middle Eastern Markets for Exports of Domestic Fans (HS-841451)

	Potential Markets	Imports from the World				Tariff faced by Pakistan	Pakistan Exports ($ million)	Trade Potential ($ million)	Top 2 exporters to each country		
		Value in 2024 ($ million)	Growth 2023-24	CAGR 2020-24	Unit Value				Exporter	Share (%)	Tariff (%)
Middle East	Iraq	188.06	123.31	16.55	-	0.00	5.03	183.03	Malaysia	53.00	-
									China	40.60	-
	United Arab Emirates	113.01	28.37	11.68	-	5.00	3.73	109.28	China	62.50	5.00
									India	24.00	5.00
	Saudi Arabia	93.74	2.53	2.66	-	5.00	2.06	91.69	China	48.70	5.00
									Viet Nam	16.00	5.00
	Yemen	16.15	11.81	-0.91	-	5.00	6.14	10.01	China	59.70	5.00
									Pakistan	38.00	5.00
	Oman	15.19	8.71	6.59	-	5.00	3.09	12.11	China	56.80	5.00
									Pakistan	20.30	5.00
	Jordan	10.21	53.47	8.49	-	20.00	0.04	10.17	China	88.40	20.00
										2.30	20.00

Source: ITC Trade Map, Author's Calculations

Middle Eastern Market Dynamics and Pakistan's Position

- Middle Eastern countries like Iraq, UAE, and Saudi Arabia are among the top potential Middle Eastern markets for domestic fan exports from Pakistan based on consumer preferences. However, payment mechanisms as well as the inclusion of some of these countries among high-risk countries for financial transactions has made trading with these markets' challenging.

- Gulf or 'G' marking is required for domestic fans to enter these markets. Pakistani exporters have sufficient capacity to get this marking.

- The estimated cost for getting the G-mark is between PKR 2 to 3 million.

- The market is clustered among low-end and high-end consumers. Low-end consumers prefer cheap fans and treat fans as a necessity whereas high-end consumers require more sophisticated fans with good aesthetics.

4.7. Potential American Markets for Exports of Domestic Fans

In North America, the USA and Mexico are the two markets importing domestic fans from Pakistan. In the USA, the value of total imports of domestic fans in 2024 was USD 2,083.64 million and from Pakistan, it was only USD 1.61 million. The share in the US market is very low but the presence of Pakistani fans in the US shows that there is a huge intensive export potential.

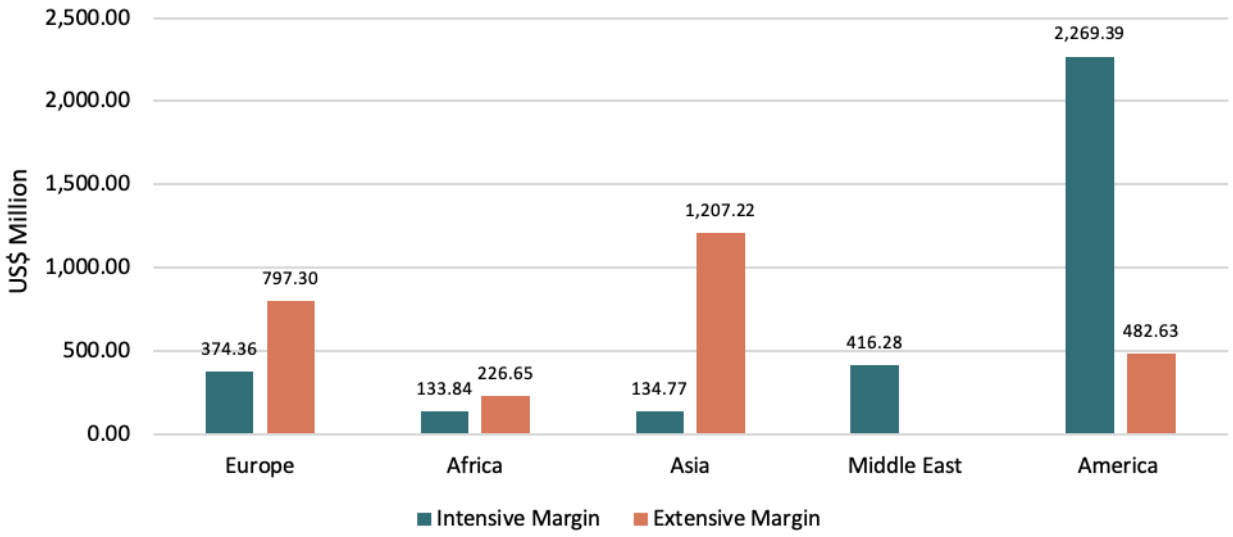
Table 16: Potential American Markets for Exports of Domestic Fans (HS-841451)

	Potential Markets	Imports from the World				Tariff faced by Pakistan	Pakistan Exports ($ million)	Trade Potential ($ million)	Top 2 exporters to each country		
		Value in 2024 ($ million)	Growth 2023-24	CAGR 2020-24	Unit Value				Exporter	Share (%)	Tariff (%)
America	United States of America	2,083.64	12.80	0.81	19.68	0.00	1.61	2,082.03	China	88.50	4.70
									Mexico	7.10	0.00
	Mexico	187.42	42.35	11.39	10.79	13.30	0.06	187.36	China	85.80	13.30
									USA	9.50	0.00
	Canada	149.82	7.38	1.72	22.16	1.30	0.00	149.82	China	75.40	4.00
									USA	10.90	0.00
	Panama	83.14	35.06	9.77	-	5.00	0.00	83.14	China	46.10	5.00
									Taipei, Chinese	29.60	5.00
	Dominican Republic	41.04	62.00	8.95	-	20.00	0.00	41.04	China	89.50	20.00
									Mexico	4.90	20.00
	Colombia	39.34	80.16	12.23	6.95	15.00	0.00	39.34	China	76.20	15.00
									Taipei, Chinese	16.00	15.00
	Peru	28.11	49.15	15.30	5.41	11.00	0.00	28.11	China	91.70	0.00
									Taipei, Chinese	4.00	11.00
	Costa Rica	26.77	76.03	17.78	14.00	14.00	0.00	26.77	China	76.40	0.00
									USA	15.60	0.00
	Guatemala	26.48	62.35	23.05	-	15.00	0.00	26.48	Taipei, Chinese	34.30	0.00
									China	28.10	15.00
	Paraguay	24.82	96.46	12.40	-	8.00	0.00	24.82	China	90.00	8.00
									Chile	3.30	0.00

Source: ITC Trade Map, Author's Calculations

The figure below summarizes the intensive and extensive margins across different regions. It appears that the European and Asian markets are largely untapped and they thus offer greater extensive margins. America offers the highest intensive margins; this is only because of the greater imports of domestic fans by the US. There are extensive margins in the Americas because except for the US and Mexico, all other markets are untapped. Middle East offers only intensive margins because Pakistan is already exporting domestic fans to almost all of the Middle Eastern markets, Pakistan needs to increase its share in Middle Eastern imports of domestic fans.

Figure 16: Intensive & Extensive Export Margins Across Regions



Source: ITC Trade Map, Author's Calculations

4.8. Opportunities under Pakistan's Trade Agreements

The table below shows trade agreements where duty concessions are being offered by the partner country for domestic fan imports. Some opportunities under these trade agreements are as follows;

- Indonesia offers concession under Indonesia–Pakistan Preferential Trade Agreement for two tariff lines relating to domestic fans, export potential under these tariff lines from Pakistan is worth USD 33.78 million.

- Pakistani domestic fans can enter the European market at zero duty under the European Union GSP+ scheme. The CE marking is the major requirement for exporting to the European market.

- Although preferential tariff is given to Pakistani fans under Pakistan–Malaysia Free Trade Agreement, there is zero tariffs on imports from China due to the ASEAN–China Free Trade Area.

- Under the China–Pakistan Free Trade Agreement Phase II; preferential access for Pakistani fans has been provided. However, China is the largest exporter of domestic fans (relatively cheaper plastic disposable fans). Pakistani exporters can cater to the quality conscious high-end Chinese consumers.

Table 17: Opportunities Under Trade Agreements

HS Codes	Product Description	Pak-China FTA	Pak-Malaysia FTA	Pak-Indonesia PTA	GSP Plus
84145110	Ceiling Fan	20	10	-	0
84145120	Pedestal Fan	20	-	-	0
84145140	Exhaust Fan	-	-	-	0
84145130	Table Fan	-	-	-	0
84145190	Others	-	10	-	0
84145191	Table Fan with protective screen	10	10	5	-
84145199	Table Fan – other	10	10	5	-

Source: Ministry of Commerce

Chapter 5

Barriers To Trade

Barriers To Trade

5.1. Analysis of Tariff Barriers

Countries impose tariffs to discourage imports of certain products. The table below summarizes the tariff faced by Pakistan, India, and China while exporting domestic fans (HS-841451) in the identified potential markets across different regions.

It can be seen that Pakistan and India enjoy zero tariffs for exports to potential markets in Europe thus having a competitive advantage over China. However, African and Middle Eastern countries offer a level playing field to all three countries. Among potential Asian markets, import tariffs are relatively higher for Pakistan for exports of domestic fans to Vietnam. Similarly, Pakistan faces import tariffs of 3.3 percent whereas China faces zero-tariffs while exporting to the Indonesian market.

Table 18: Tariff faced by Pakistan, India, and China on exports of Domestic Fans to potential markets

	List of Potential markets	Tariff Faced by (%)			List of Potential markets	Tariff Faced by (%)			List of Potential markets	Tariff Faced by (%)			List of Potential markets	Tariff Faced by (%)	
Europe	United Kingdom	Pakistan	0.0	Africa	South Africa	Pakistan	5.0	Asia	Bangladesh	Pakistan	25.0	Middle East	Saudi Arabia	Pakistan	5.0
		India	0.0			India	5.0			India	25.0			India	5.0
		China	1.6			China	5.0			China	25.0			China	5.0
	Germany	Pakistan	0.0		Cameroon	Pakistan	20.0		Sri Lanka	Pakistan	0.0		United Arab Emirates	Pakistan	5.0
		India	0.0			India	20.0			India	0.0			India	5.0
		China	1.6			China	20.0			China	0.0			China	5.0
	France	Pakistan	0.0		Sudan	Pakistan	-		Viet Nam	Pakistan	26.7		Oman	Pakistan	5.0
		India	0.0			India	-			India	25.2			India	5.0
		China	1.6			China	-			China	15.0			China	5.0
	Belgium	Pakistan	0.0		Tanzania	Pakistan	25.0		Indonesia	Pakistan	3.3		Iraq	Pakistan	-
		India	0.0			India	25.0			India	6.7			India	-
		China	1.6			China	25.0			China	0.0			China	-
	Netherlands	Pakistan	0.0		Nigeria	Pakistan	20.0		Nepal	Pakistan	7.3		Yemen	Pakistan	5.0
		India	0.0			India	20.0			India	7.3			India	5.0
		China	1.6			China	20.0			China	15.0			China	5.0

Source: ITC Trade Map

5.2. Non-tariff Barriers

A non-tariff barrier is any measure, other than a customs tariff, that acts as a barrier to international trade. Certification requirements are the major non-tariff trade barriers for exporting domestic fans to the world.

Certification Requirements in Key Markets for Domestic Fans

The major non-tariff barriers for domestic fans are certification requirements. Domestic fans need to be tested on various parameters to obtain a certification which is specific to countries and regions. The 'CE Marking' for the EU and the 'UL Marking' for the US both have stringent testing requirements. Although Pakistani manufactured domestic fans are able to get these markings/certifications, the cost

to outsource some tests (not available domestically) and additional time involved in getting testing done impedes operating efficiencies.

Table 19: Compliance Requirements

	Compliance Requirement	Countries/Regions
1	CE Marking	Europe
2	UL Marking	USA
3	G Marking	Saudi Arabia
4	SABS	South Africa
5	SONCAP	Nigeria
6	SIRIM	Malaysia
7	SIRIM	Sri Lanka
8	G Marking	Gulf Countries

Pre-Shipment Inspections for Exports

Exporters reported strict pre-shipment inspections by various government agencies at the Karachi port especially for consignments directed towards African countries. The aim of such inspections is primarily to check for contraband products. Such inspections however damage product packaging.

Chapter 6

Analysis of Competitors Strategies

Analysis of Competitors Strategies

Manufacturing facilities in India and China have a competitive edge over Pakistan. The corporate tax and policy rates prevailing in Pakistan are higher than those in either India or China. Other factors such as labor productivity, capital efficiency, logistics and electricity tariffs are also non-competitive in Pakistan. Demand conditions such as the share of the urban population in the total population and the urban population growth in Pakistan appear somewhat better than that for both India and China.

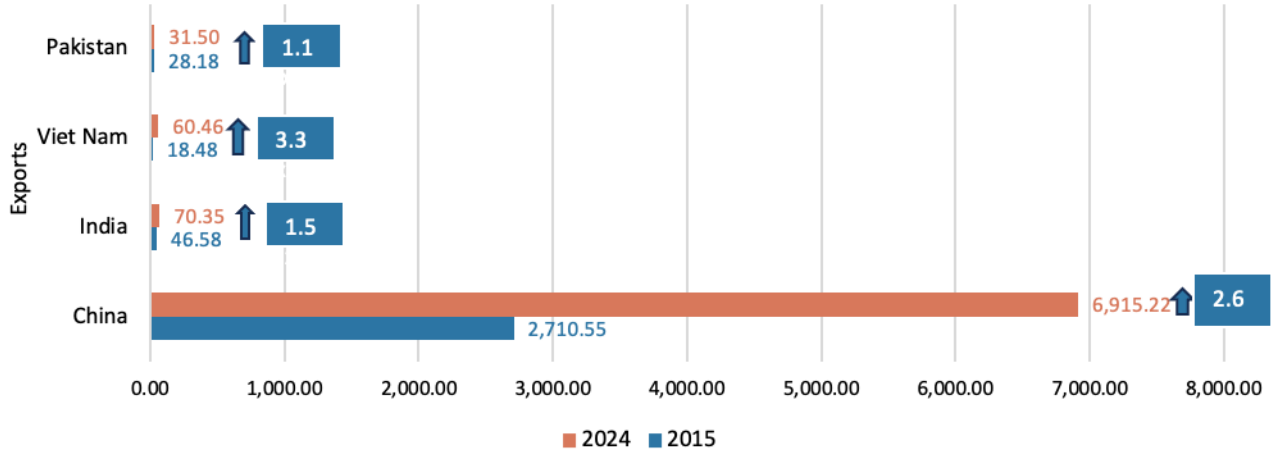
Table 20: Key Economic Indicators

Indicators	Pakistan	India	China
Corporate Tax rate (2024, %)	29.0	25.2	25.0
Policy rate (2024, %)	11.0	5.5	3.0
Per-worker Labor Productivity (2023)	20.7	24.9	44.9
Per-Hour Labor Productivity (2023)	9.6	11.7	21.4
Labor Productivity Growth in Manufacturing (%) 2010-2023	0.7	4.2	6.5
Urban population (% of total population) 2024	38.4	36.9	65.5
Urban Population Growth (%) 2024	2.4	2.3	1.4
Total Factor Productivity Growth (%)	1.4	5.8	2.7
Capital Deepening (Non-ICT)	39.0	33.0	55.0
Manufacturing as % of GDP	14.3	14.3	25.6
Electricity Tariffs (US cents/kWh)	13.5	6.3	7.7

Source: https://taxsummaries.pwc.com/

The figure below shows the export performance of domestic fans for Pakistan and regional peers between 2015 and 2024. Domestic fan exports from India and China increased 2.6 and 1.5 times as compared to 2015 whereas in the case of Pakistan, only a 1.1 times increase was witnessed.

Figure 17: Exports of Domestic Fans to the World – Pakistan and Regional Peers



Source: ITC Trade Map

6.1. The Indian Domestic Fan Industry

The India electric fan market size reached USD 2.00 Billion in 2024. Looking forward, the IMARC[4] Group expects the market to reach USD 5.64 Billion by 2033, exhibiting a growth rate (CAGR) of 12.20% between 2025 & 2033. Rising temperatures, urbanization, increasing disposable incomes, affordable pricing, government electrification initiatives, adoption of energy-efficient technology, rural demand growth, expanding e-commerce, premiumization trends, smart fan integration, a growing real estate sector, and rising consumer preference for branded products are driving India's electric fan market.

An electric fan is a high market penetration product category. The fan industry in India is segmented on the basis of price. There are three categories in which the organized fan market is divided, i.e., economy fans, regular fans, and premium fans. Economy fans are those which are priced below INR 1,500, this segment is the largest segment with more than 60-65% of total domestic sales of fans. Regular fans, priced between INR 2,000 to INR 3,000, comprise about 15-20% of the total sales. Premium or Luxury fans are priced at or above INR 5,000 and their share in total sales is 10-15%. The fan market in India broadly includes four types of fans i.e., ceiling fans, table fans, pedestal fans and wall fans. Ceiling fan segment is the largest category of the industry, according to Indian Fan Manufacturer Association (IFMA), around 10 million fans are sold each year and sales are growing at a rate of more than 8-10% yearly, among which 65% are ceiling fans.

India's Export Promotion Framework

India's Merchandise Exports from India Scheme (MEIS) was launched under the Foreign Trade Policy (FTP) 2015-20, effective from 1 April 2015, as a major export incentive to make Indian goods more competitive internationally. Under MEIS, exporters of notified merchandise (i.e. specified HS lines) received duty credit scrips corresponding to a percentage (typically 2-5%) of the Free on Board (FOB) export value. The scheme aimed to offset export-related costs and infrastructural inefficiencies, encourage industries with high export intensity and employment generation, replace multiple earlier incentive schemes (FPS, FMS, MLFPS, AGRI infrastructure, VKGUY), and simplify the export reward regime. However, MEIS was discontinued in January 2021, largely because India faced challenges under WTO rules regarding export subsidies, many export incentives under MEIS were found problematic under the WTO's Subsidies & Countervailing Measures agreement.

To comply with WTO norms and restore incentives in a legally acceptable manner, MEIS was replaced by the RoDTEP scheme (Remission of Duties & Taxes on Exported Products). RoDTEP refunds embedded central, state, and local duties and taxes that are not otherwise rebated, thus continuing support to exporters (including fan manufacturers) while aligning with international trade laws. The RoDTEP is product specific, the typical range of rates is 0.3% to 4.3% of FOB export value.

Foreign Direct Investment

India's policy environment has been quite favourable for Foreign Direct Investment (FDI) in the broader white goods / consumer durables / electronics hardware sector, which encompasses components and appliances such as electric fans. Under the current FDI policy, 100% foreign investment is permitted via the automatic route in manufacturing of consumer durables.

Production Linked Incentive Scheme (PLI)

The Production Linked Incentive (PLI) scheme is a flagship government program introduced in India in 2020 under the Make in India initiative to boost domestic manufacturing, attract investment, enhance export competitiveness, and reduce import dependence. Under this scheme, selected sectors receive financial incentives, typically between 4-6% of incremental sales (over a base year), for goods

4. IMARC Group is a global management consulting firm

manufactured in India in specified product categories, such as mobile phones, electronic components, consumer electronics, white goods, and IT hardware. The scheme has drawn large investments; for instance, by mid-2024 PLIs across 14 sectors had attracted over ₹1,300 billion in committed investment, generated production or sales exceeding ₹10,900 billion, and directly and indirectly created nearly 850,000 jobs. It has helped India transition from being heavily import-dependent in electronics to becoming a net exporter of mobile phones and related components. For fan manufacturers, the PLI offers potential advantages: incentives on incremental domestic manufacturing, improved value-added component sourcing, and leverage to compete in export markets if fans or fan components fall under eligible PLI target segments.

Key Characteristics of the Indian Fan Industry

Innovation in product aesthetics: Aesthetics and premium designs are gaining prominence, especially as fans are now seen as an extension of home décor. Demand for premium fans with better aesthetics has been on the rise, the segment grew 18-20% in 2023, with a projected 22% CAGR through to 2025.

Energy-saving technology: Indian electric fan market is experiencing a transition towards energy-efficient brushless direct current (BLDC) fans as consumers focus on saving electricity and sustainability. As electricity prices are increasing and the government is encouraging energy-efficient appliances, BLDC technology is gaining ground very quickly. BLDC fans use 50-65% less energy compared to traditional induction motor fans, cutting down the consumption of electricity from 75-80W to a mere 28-35W. Government initiatives such as the Bureau of Energy Efficiency (BEE) Standards & Labeling Scheme and incentives through the Unnat Jyoti by Affordable LEDs for All (UJALA) scheme are stimulating the use of energy-efficient appliances. The Indian government's initiative to reduce energy consumption is expected to drive the market penetration of BLDC fans to 30-35% by 2025, up from 10-15% in 2023. Additionally, top players like Crompton, Havells, and Atomberg are spearheading this movement with product innovation. Atomberg, the technology leader in BLDC, clocked more than 200% sales growth in 2023, whereas the high-end energy-efficient fan segment registered a CAGR of 25% from 2023 to 2025.

IoT-enabled ceiling fans: Smart Internet-of-Things (IoT) fans, powered by efficient Brushless Direct Current (BLDC) motors, represent a complete transformation in cooling technology. IoT fans are smart fans that connect to Wi-Fi, enabling control via smartphone apps or voice assistants like Google Home or Alexa. These fans also feature smart-home functions such as speed adjustment based on room temperature.

Production: According to the Indian Fan Manufacturers Association (IFMA), India's fan manufacturing industry currently produces around 60 million units annually, with ceiling fans having the majority share. The sector is valued at approximately INR 8,000 crore (~USD 1.07 billion) in recent years. It is now increasingly focused on energy-efficient technologies (such as BLDC motors), driven by regulatory norms (e.g. BEE labelling) and rising consumer demand for efficiency and performance.

Rate of penetration: In India, electric fans enjoy very high market penetration. Surveys show that roughly 74% of Indian households had fans by mid-2010s, with fan ownership increasing to about 93% by 2020. Ownership is nearly universal in urban areas.

6.2. The Chinese Fan Industry

China's fan industry is one of the largest in the world, driven by both domestic demand and strong export performance. The production of domestic fans was estimated at over 250 million units in 2021, with floor-standing fans dominating sales, while the ceiling fan market alone was worth more than USD 2.1 billion in 2023. Although growth in total output has plateaued slightly since 2022, China remains a global hub for both industrial and domestic fan manufacturing, supported by large-scale production capacity, competitive pricing, and a rapidly evolving energy-efficient product segment.

Government Policies

China has implemented a combination of regulatory standards, subsidy programs, and industrial policy instruments that directly or indirectly support the fan manufacturing sector, especially as global markets increasingly demand energy efficiency. One of the central policies is the GB 19761-2020 standard, which sets mandatory minimum energy efficiency and grading requirements for various types of electric fans (including ceiling, pedestal, table, wall, etc.), and for the first time includes DC-motor fans. A more recent draft standard G/TBT/N/CHN/2084 seeks to extend these norms to household ventilating fans and range hoods, specifying test methods, inspection regimes, and performance limits.

On the demand side, China's trade-in / appliance renewal program offers subsidies (≈15-20%) for consumers replacing old appliances with high-efficiency ones; "green" and "smart" home appliances obtain especially high uptake, with energy-efficiency labelled products accounting for over 90% of the sales revenue in recent subsidy-backed phases. Additionally, China's "Encouraged Industry Catalogue" supports investment in advanced and high-energy-efficiency manufacturing sectors by easing foreign investment restrictions, granting tax incentives, and facilitating infrastructure and regulatory support.

Table 21: Chinese Policies / Regulations Related to Fan Industry

Policy / Regulation / Program	Key Features Relevant to Fans	Purpose / Expected Impact on Fan Industry
Revised National Standard GB 19761-2020 (Energy Efficiency Grades for Fans)	Mandatory minimum allowable values for energy efficiency and efficiency grades for various fans (ceiling, pedestal, table, etc.), including DC motor fans. Applies to fans with single-phase motors under certain voltages.	Pushes manufacturers to adopt more efficient designs; increases energy performance; helps export competitiveness especially in markets with energy efficiency demands.
Draft National Standard G/TBT/N/CHN/2084	New standard notified to WTO that will set minimum energy efficiency values and grading for household range hoods and AC electric ventilating fans etc. Applies to ventilating fans under certain rated input power and impeller size.	Will enforce upgraded performance; incentivises manufacturers to improve product design; helps align with international standards for export markets.
Consumer Goods Trade-in Program / Appliance Trade-in Subsidies	Program where consumers are subsidised (15-20%) to replace old home appliances with newer, high-energy-efficient models. Includes home appliances, and high share of top-level energy efficiency labeled products in sales. Government allocates funds, expanded categories (from 8 to 12 appliance types) including "green / smart appliances."	Helps increase demand for newer, more efficient fans; reduces market for older inefficient models; helps domestic manufacturers scale up efficient product lines; supports energy policy and environmental goals.
"Encouraged Industry Catalogue"	China classifies certain industries as "Encouraged" under its FDI / industrial policy catalogue. These encouraged industries may receive preferential tax treatment, incentives (including on imported equipment, land, regulation) etc.	If fan manufacture (or components) is included in or associated with "encouraged" advanced manufacturing / energy-efficient appliances, then manufacturers may benefit via lower costs, easier access to capital / land / foreign investment.

Key Characteristics of China's Domestic Fan Industry

Plastic-made disposable fans: Chinese electric fan industry is dominated by lightweight plastic and disposable fans. In the plastic-made disposable segment, China has a clear advantage owing to economies of scale.

Availability of raw materials: Basic raw materials are abundantly available in China. The availability of plastic granules has provided a competitive advantage to Chinese manufacturers.

Cost effectiveness: China has been able to diversify its production of materials required for fan manufacturing moving into PVC, composites, etc. Pakistan on the other hand is still relying on pure materials which are not as cost-effective.

Economies of Scale: Due to the large-scale production of domestic fans, overall costs are distributed over a large number of units leading to economies of scale. The Chinese fan manufacturers on average produce 45-50,000 fans per day whereas the average manufacturer in Pakistan produces only 200-300 fans per day.

Domestic testing facilities: Testing facilities are domestically available in China. For example, CE marking requirements such as Low Voltage Directive (LVD) test, Electromagnetic Compatibility (EMC) test, and test for restriction of the use of certain Hazardous Substance in Electrical and Electronic Equipment (RoHS) are locally available in China.

Chapter 7

Competitiveness of Pakistani Fans

Competitiveness of Pakistani Fans

7.1. Competitiveness

Literature pertaining to competitiveness is rich in dimensions, however, there is no clear consensus on defining competitiveness. This study benchmarked the definition of competitiveness from a European Commission study on measuring competitiveness and which defines competitiveness at three levels for analysis: Firm-level, sectoral/industrial level, and the macroeconomic level (Penender & Rammer, 2018). The definition of competitiveness from literature based on relevance at the stated levels are as follows:

Firm-level Competitiveness

The OECD (1992) defines competitiveness at the firm level as the "capacity of firms to compete, to increase their profits, and to grow". It is based on cost, prices, technology, quality and performance of products.

Sectoral-level Competitiveness

The European Commission cited Momaya's (1998) definition of sectoral competitiveness as "the extent to which a business sector offers potential for growth and attractive returns on investment".

Economy-wide Competitiveness

The European Commission defines the economy-wide or macroeconomic level of competitiveness as "an economy is competitive if its population can enjoy a high standard of living and high rates of employment while maintaining a sustainable external position".

7.2. The Facets of Competitiveness

According to the European Commission, the three facets of competitiveness are as follows:

Price Competitiveness: For international businesses, price competitiveness refers to relative export performance in terms of prices. This is affected by a number of factors including relative inflation, the real effective exchange rate, and input costs.

Quality Competitiveness: Two broader notions here are the structure of an economy (such as the structural composition of the manufacturing sector which can be broken down into value addition, input sophistication, etc.) and its capabilities, for instance, innovation and the education system. The quality of non-price competitiveness includes a variety of aspects including product quality and design, R&D, brands, effective marketing, dynamic efficiency of the industry, labor productivity and others.

Outcome Competitiveness: It defines competitiveness as the ability of a country, region, or location to deliver beyond GDP goals. It aggregates the indicator into three pillars: an income pillar, a social pillar, and an ecological pillar.

7.3. Approach Used in this Study for Measuring Competitiveness

This study uses both the top-down and the bottom-up approach for measuring competitiveness at the industry level. The top-down approach employs comparing global competitiveness indicators as well as calculating competitiveness indicators at the industry level. The bottom-up approach includes interviewing individual manufacturers and aggregating their inputs at the industry level. Both of these approaches provide a comprehensive view of the industry's competitiveness by encompassing multiple dimensions.

Sections 7.4 and 7.5 are based on the bottom-up and the top-down approaches for measuring the competitiveness of Pakistan's domestic fan industry.

7.4. Market View on Competitiveness of Pakistan's Domestic Fan Industry

Interviews in collaboration with the Engineering Development Board (EDB) were conducted with domestic fan industry participants. Respondents included 30 domestic fan manufacturers and the secretary-general of the Pakistan Electric Fan Manufacturers Association (PEFMA). A set of questions were developed that largely addressed the challenges faced by the industry; capabilities of the sector to understand its export orientation; to identify potential opportunities; and to highlight perceived policy shortcomings along with recommendations to address the same.

To better analyze the competitiveness of the domestic fan industry, responses were organized in line with Porter's Diamond model (1980). The latest version of the NVivo software tool was used to code interview transcriptions. Each code reflecting a unique attribute of Porter's Diamond model; however, some additional codes were also included for other sections of the study. These codes helped identify common trends within the industry related to various attributes of the model. Below are the attributes of the augmented Porter's Diamond model:

Factor Condition: The industry's position in factors of production such as labor, raw materials, utilities, etc.

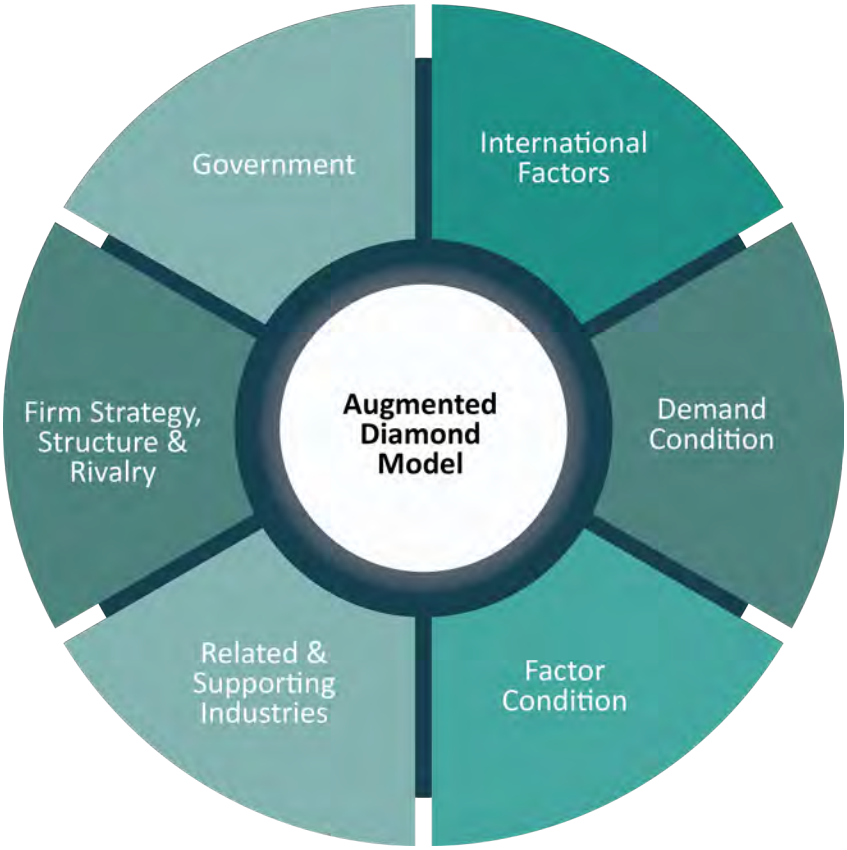
Demand Condition: The nature of the consumer base for products.

Related and Supporting Industries: The presence or absence of allied industries and their level of competitiveness.

Firm, Strategy and Structure: This reflects the size, capacity, and market structure of the industry.

Government Factor: Industry's perception regarding current government policies.

International Factor: It includes the industry's exposure to international factors.



7.4.1. Factor Conditions

Availability of Domestic Raw Materials

The raw materials required for manufacturing electrical fans include metal sheets, aluminum, winding papers, wires, router stator, different chemicals and spare parts etc. Raw materials are being imported by the vendors, who reshape them in Gujranwala and make components for the fan industry. These components are easily available in the local market with some seasonal fluctuations because of high demand in the production season. Availability of components or raw materials is not a major problem since the local industry for the supply of raw materials and components is well established, however, due to seasonal demand, prices sometimes increase which increases the cost of production.

The local industry provides almost all the raw materials and components being used in the production of the conventional fans. In case of inverter or BLDC fans, more than 80% of the components are available locally, some components, like the PCB unit and its remote are being imported. Attempts have been made to produce PCB units locally, however, with little success. One of the Chinese companies in collaboration with a local firm has started producing PCB units in Gujranwala, however, imported PCB units are viewed as more reliable, efficient and cost effective.

Steel Sheets: Electric steel sheet is the key raw material used in manufacturing energy-efficient fans. A RD of 2.5% on imports of these sheets is levied. Although RD-free import quota is available under concessionary SRO, the smaller manufacturers are unable to avail the quota as these manufacturers are mostly undocumented. Most of the manufacturers prefer to buy the steel sheets from the local vendors or importers. Locally made electric steel sheets are relatively poor in quality because they are not coated and the press machines are not good enough to make them comparable to imported ones. Lack of awareness about the import process, dealing with the authorities and documentation also discourage direct imports.

Plastic: Manufacturers and vendors import plastic granules under a low tariff regime which is rightly classified by the National Tariff Commission (NTC). Import substitution cannot be expected in the foreseeable future as Pakistan does not have a basic naphtha cracker plant.

Copper and Aluminum: After the removal of regulatory duty on the exports of recycled copper and aluminum, the recycling industry has started exporting recycled copper and aluminum ingots to China. This is posing a serious threat to the industry's competitiveness and survival as competitively priced, locally available recycled copper and aluminum is now difficult to access.

Printed Circuit Board: Industry is currently relying on imported PCBs from China for BLDC fans. However, one of the manufacturers has designed its own PCB locally, but the parts used in making the PCB are mostly imported. The manufacturer is selling the ceiling fans with own PCBs for last two years and according to them, there are no complaints and that they plan to continue their production with the same PCB. Designing a PCB needs technical knowledge and for the companies it is not feasible to hire expensive engineers and then import all the components from China. There are around 60 parts installed in a PCB and all of these are not available at a single place in China; this is one of the reasons that discourages manufacturers from making their own PCBs.

Cost Components of Pakistan's Domestic Fan Industry

The major cost components of the industry are raw materials and components. The cost breakup for producing a fan varies across large, medium, and small manufacturers. However, the best estimates are; (1) Raw materials: 70-80 percent, (2) utilities: 2-3 percent, (3) Labor: 5-7 percent, (4) Overheads: 10-12 percent. Among raw materials, steel sheets (27-28%), copper (20%), and aluminum (21%) together account for around 68-70 percent of the total raw material costs.

Availability of Skilled Labor

There is shortage of skilled labor. In the context of domestic fan industry, workers having awareness of lathe machine handling, winding, die casting, operating a CNC machine, and fitting process are counted among skilled labor. Due to seasonal employment opportunities, SMEs in the domestic fan industry are unable to retain skilled labor.

One of the prime issues with labor is that the old skilled workers are retiring and the new generation is not interested in entering the industry. According to manufacturers, workers prefer to go abroad or will buy a rickshaw but will not come to the industry for employment. As fan manufacturing is seasonal, the workers associated with the industry are employed for a maximum period of about six months. Moreover, contracts are not taken seriously, there is no commitment, labor moves very quickly if they find any other opportunity. This behavior disrupts the production process and often the manufacturers are unable to deliver orders on time.

Table 22: Employment status in Fan industry

Current Employment Status	
Total Labor Employed	50,000
Skilled	23,000
Semi-Skilled	16,600
Un-skilled	10,400

Source: Pakistan Electric Fan Manufacturers Association

7.4.2. Demand Conditions

Domestic Market and Seasonal Nature of Sales

The major production share is for the domestic market. It is estimated that almost 55% of the fan market is located in the rural areas while the rest comprises of urban consumers. The annual demand for domestic fans in Pakistan is estimated to be around 12 million units. The seasonal sales of domestic fans start in January and peak in July each year.

Various marketing methods are adopted by the fan manufacturers including hoardings, wall chalking, newspapers, promotional giveaways like key chains, writing pads, clocks, calendars, and televisions. In big cities like Karachi, Peshawar, Lahore, Hyderabad large manufacturers sell their products mostly through their own outlets/distributors. The distributors further engage other clients including dealers, sub-dealers, and retailers. On the other hand, medium & small sized manufacturers sell their products through several intermediary agents and small retailers.

Market Dynamics

The domestic fan industry offers a wide range of products including ceiling fans, pedestal fans, table fans, circumatic fans, and others. The market for domestic fans can be divided into two major segments:

Household: The demand in this segment is usually for general utility fans including ceiling, pedestal, and exhaust fans.

Institutional: The bulk demand is for general purpose fans by institutions such as hospitals, educational institutions, companies, industrial units, and other organizations.

Consumer Preferences

Consumer preferences vary across income groups and regions. High-end consumers are generally brand conscious and demand aesthetically pleasing designs.

Solar fans are mostly demanded by the rural population where there is either no or limited access to electricity.

Local consumers demand fans which are heavier in weight, this is due to a general perception that weight is a measure of durability, on the other hand global consumers, especially in the developed world, usually prefer light weight and mostly plastic made disposable fans and tend to replace them more frequently compared to local consumers. Vendors are of the view that weight can be reduced by reshaping the rotor/stator. There is a tradeoff between cost efficiency and performance efficiency. Currently, there is no standard weight of a domestic fan. However, 36 slot stators are being used in domestic fans for the local market. Weight of the fan and rpm are directly proportional to the number of slots used in the stator.

Demand for Imported Fans

Only a limited quantity of domestic fans is being imported each year. These imports mainly include decorative fans and battery-operated fans. Previously, DC fans accounted for the largest share in imports, but these are now being manufactured locally, the growth rate of imports of fans is negative. However, printed circuit boards (PCBs) and other components used in DC fans are still being imported. On average, the price difference between DC inverter fans and conventional fans is around PKR 2,000 in the local market. The price difference between an imported and locally manufactured DC fan is around PKR 1,000.

Local Market Penetration and Replacement Rate

The domestic market has largely been tapped after the introduction of solar fans. The domestic fan penetration rate in Pakistan is in the 90s (percent) despite access to electricity for only 71 percent of the population. The local demand for DC and inverter fans is driven by high electricity prices; the production of conventional fans has been reduced to around 10% of total production. The demand for conventional fans is mainly in AJK where electricity prices are lower. There are concerns about solarization and fans transformation, as the fan transformation is demand driven due to high electricity prices, there is evidence of switching back to the conventional fans because they are less costly, more reliable and do not need PCBs.

7.4.3. Related and Supporting Industries

Local Vendor Industry

Local vendors complement the domestic fan industry. Within the fan clusters in Gujrat and Gujranwala, there are more than 700 vendors that produce different components including castings, fan guards, stands, rods, enameled copper wire, fan bodies, bush gears, shafts, capacitors, canopies, blades, and other small components. Small manufacturers also outsource the production of rotors and stators. The quality of these vendor-supplied components is at an acceptable level. Attempts to make the Printed Circuit Boards (PCBs) domestically have been made but those are not cost effective and are also less efficient compared to imported PCBs.

The structure of some of the major vendor industries are discussed below:

Guard manufacturers: The fan guard industry has been set up in Gujranwala and Gujrat for the last 35-45 years with an average annual capacity of more than 1 million guards. The industry is currently comprised of around 30-35 manufacturers. Their major cost drivers are local raw materials (70-75%), electricity (10-15%), and labor (10-20%).

Rotor & Stator manufacturers: The number of rotor and stator manufacturers in Pakistan varies between 10-12 manufacturers and together they meet the demand of up to 300 manufacturers. There are only around 15 large fan manufacturers who have in-house rotor and stator manufacturing facilities whereas the rest are dependent on local vendors. Economies of scale and their participation in exports are primary factors that allow large manufacturers to setup such facilities in-house. The major cost driver in the rotor/stator vendor industry is raw material which account for 75-80% of the total cost. Vendors do not normally meet the criteria to avail zero-duty quota for importing electrical steel sheets under SRO-565 (1)/2006.

Capacitor manufacturers: There are around 25 capacitor vendors in Pakistan, mostly located in the Punjab province. The product range for capacitors varies between 1-35 µF and the major cost components are: (1) raw materials – 70%, (2) labor-10%, and (3) miscellaneous-20%. Large individual units such as Amber capacitors, GFC capacitors and Khawaja Electronics, have an average manufacturing capacity of more than 4 million capacitors per annum. The capacitor manufacturing industry is sufficient to cater to the demand of domestic market. Capacitors are also being exported with fans depending on consumer requirements.

Fan Development Institute

The Fan Development Institute (FDI) which was established in 2005, offers die-casting and mold making diploma courses. An updated curriculum, in consultation with industry experts, needs to be implemented. Specifically, training on lathe machine handling, winding, die development, and fitting

process need to be provided at the FDI. Moreover, separate courses/sessions or trainings are required for already experienced workers to make them innovative and efficient.

Local Universities and R&D

Industry suffers from a lack of institutional linkages providing R&D support to the domestic fan industry. Novel trends in technology are therefore mostly demonstrated by large units who have in-house research and development capabilities.

Pakistan Council of Scientific & Industrial Research (PCSIR)

The Electrical Measurement & Test Laboratory (EMTL) of PCSIR in Lahore, provides testing services related to performance and safety standards. With the necessary investments, EMTL can be equipped for testing facilities related to Electromagnetic Compatibility (EMC) and RoHS which are the primary requirements for obtaining CE marking.

7.4.4. Firm Strategy, Structure and Rivalry

Domestic Fan Industry Structure

The industry is mainly comprised of small, medium and a few large manufacturers of domestic fans. Distinct characteristics of these manufacturers are discussed below:

Small-sized manufacturers: Small-sized manufacturers have the ability to produce low-quality fans at low costs. The low cost is achieved by widely diffused technology and older machines. They generally hire seasonal workers and focus on the far-flung domestic rural markets through wholesalers. The major cost saver for the small manufacturers is the usage of 'drum steel', made from recycled metal drums, to produce rotor armature. However, it leads to the production of low-quality fans which are highly inefficient in terms of electricity consumption. Small-sized manufacturers rely heavily on the vendor industry and have no participation in exports.

Medium-sized manufacturers: Medium-sized manufacturers mostly focus on ceiling and pedestal fans. These firms mostly employ locally available imported or locally made machinery. These machines include rotary die casting machines, refurbished CNC lathe machines, presses, and drilling machines. The primary market for such manufacturers is domestic, however their participation in exports is also visible. Some of the medium-scale manufacturers are ready to export ceiling fans but due to lack of awareness and support to enter international markets, they cannot export. Around 60-70 percent of the value chain is available in-house for these manufacturers.

Large-sized manufacturers: Large-sized manufacturers produce high-quality fans. They use imported raw materials and components including electric steel sheets, ball bearings, and insulation materials under the zero-duty quota regime provided by the government. These manufacturers have developed brands that are both domestically and internationally recognized. Brand-conscious and quality-conscious local consumers in cities like Karachi, Lahore, and Islamabad are the primary target for these manufacturers.

Source: Pakistan Electric Fan Manufacturers Association

Table 23: Comparison of small, medium, and large sized manufacturers

Parameters	Small Manufacturers	Medium Manufacturers	Large Manufacturers
Product Line	2 kinds of fans (Ceiling, Pedestal)	4-6 kinds of fans (Ceiling, Pedestal, Wall Bracket, Metal Exhaust, Circomatic, Table)	All Kinds of fans
Technological Status	No R&D activities	Negligible R&D activities	Completely involved in R&D activities
Managerial Infrastructure	Usually, one or two persons are involved in overall management. Experts in the related business.	Competent, educated and experienced management. Low autonomy. Learning structure	Competent, well-educated and experienced management. Unified decision making. Learning structure.
Human Resource	Around 98% of labor is contractual. Shortage of skilled labor	Around 50-60% of labor is contractual. Skilled and unskilled labor, strong relation with contractors. Facilities of on-job trainings and development.	Around 25% of labor is contractual, depending upon the order. Most have experienced and well-trained labor. Facility of on-job training and development. Job security for labor.
Procurement	Around 90-95% of the operations are outsourced. Procurement is demand driven.	Around 30-40% of the operations are outsourced. High quantity purchases of input materials allow then to get better rates. Friendly relations with vendors.	Around 5-10% of the operations are outsourced. Large purchase quantities allow them to avail quantity discounts.
Participation in Exports	No	Limited	Yes
Distribution Channel	Only through local dealers	Mostly through local dealers but few manufacturers are involved in e-commerce	Mostly through local dealers and also through e-commerce
Inbound Logistics	No storage facility. The purchases are done based on demand.	No large storage facility as production is not in bulk.	Suitable material storing facilities. These warehouses allow purchasing in bulk and getting quantity discounts.
Out bound Logistics	Production is limited with obsolete mode of transportation	The production flow follows the market demand	Sufficient storage capacity for finished goods that allows timely order processing and scheduling systems.
Manufacturing	Only winding, varnishing, painting & assembling are done in-house	Better local manufactured machines are used to achieve maximum quality	Better local and imported machinery is used to achieve maximum quality
Services	Least support is provided to the distribution channel	Spare parts are provided to the distribution channel	Offers lifetime guarantees to the final customer. Spare parts are provided to the distribution channel.
Testing Facilities	Wattmeter (manual). RPM meter.	Wattmeter (manual). RPM meter. Test chamber to check the air delivery.	Wattmeter. RPM meter. Test chamber to check air delivery. In-house laboratory.
Machinery	Around 9-12. Lathe Machines. Drill Machine. Automatic winding machine for ceiling fans. Hand coil machine for pedestal fans. Die for blade bending. Air compressor & gun for painting. Oven for baking paint.	Around 15-30. Lathe Machines. CNC Lathe Machines. Drill Machine. Automatic winding machine. Hand coil machine. Die for blade bending. Rotary die casting machine. Dies for body casting. Semi-automatic press for rotor-stator. Air compressor & gun for painting. Oven for baking paint.	Around 40-60. CNC lathe machines. Lathe machine (Notched gear type). Drill machine. Air compressor and gun painting. Oven for baking paint. Automatic winding machine. Automatic paper insertion machine. Coil & wedge inserting machine. Coil shaping machine. Lacing machine. Automatic progressive die stamping power press. High pressure die-casting machine. Enameled copper wire plant. CNC wire cut machine

Limited Scope for Manufacturing Fans outside Gujrat and Gujranwala

Vendors and raw material suppliers have developed their manufacturing facilities within or around Gujrat and Gujranwala cities. Most of the local testing facilities are also available in the vicinity of these regions.

The fan cluster in Gujrat and Gujranwala is a vibrant one and attracts new entrants on a regular basis, however, it is difficult for any manufacturer located outside the region to compete with the mostly family-oriented businesses in the region.

Underutilized Production Capacity

The average production capacity utilization rate for the domestic fan industry is between 40-70 percent. The first half of the calendar year sees the peak of both the production and sales cycle while the second half is marked as a low period for production and sales. The excess production capacity in the lean months can be utilized for enhancing exports to existing and potential markets. Production capacity utilization is even lower for smaller manufacturers.

Domestic Market Concentration

Sales in the local market are mainly dominated by the top 4-8 large manufacturers. They cater to roughly 80-90 percent of the domestic market demand for household fans.

7.4.5. Government

Non-Competitive Regulatory Duties

Although the domestic fan industry is adequately protected in terms of the tariff structure however prevailing regulatory duty structure has an inherently anti-manufacturing bias. Most of the small and medium scale fan manufacturers complained about the National Tariff Policy 2025-30 policy according to them, the policy will benefit few large exporters from other sectors only because the tariff for raw materials being used in the manufacturing of fans have not changed.

Regulatory duties on imported electric sheets: Domestic fan manufacturers, who are unable to obtain import quotas, have to face significant regulatory duties on direct imports of electric sheets as well as in procuring through vendors.

No regulatory duty on exports of recycled raw materials: After removal of regulatory duty on exports of aluminum and copper, recyclers import discarded components/parts and separate aluminum and copper to export in the form of ingots. As a consequence, local manufacturers have been facing an acute shortage of recycled raw materials.

Anomalies in the Tax Regime

Some of the imported inputs are not rightly classified and are hence subject to higher tariffs. The inclusion of the domestic fan industry in the third schedule of sales tax is a concern for the industry. Previously sales tax was levied on cost-plus factory margin only whereas by inclusion of industry in the third schedule of sales tax, it now requires industry to charge and deposit 18 percent sales tax on the final consumer price.

7.4.6. International Factors

Potential Export Markets
Export opportunities are available in almost all markets of the world due to climate change. In particular, relatively hot countries located in the African and Middle Eastern regions import fans with high rpm and better air flows which provide scope for Pakistani domestic fans to be exported to these markets. Asian markets such as Bangladesh, Sri Lanka and Vietnam are also among the top potential markets for exports of domestic fans.

International Competitiveness
The competitiveness of Pakistani fans is notable in terms of attributes such as better air delivery, high rpm, and metal body as opposed to Chinese and Indian fans that are lighter in weight and cheaper in price.

In consumer clusters where plastic body and disposable fans are generally preferred, Pakistani domestic fans cannot compete with their Chinese counterparts which are more cheaply priced. This is especially true for most European markets; however, climate change is shifting consumer preferences.

Table 24: Pakistan's Competitive Position against Peers

Inputs/Attributes	Pakistan's Position Relative to India and China
Labor	Abundant but less skilled
Exchange rate	Competitive advantage for exporters
Quality	Competitive to that of India and China
Cost	Disadvantage due to import dependency
Economies of Scale	Lower than that of India and China
Raw materials	High import dependency and recent shortage due to exports of raw materials

Risks in International Business

Participation in international business exposes manufacturers to additional risks. The high dependency of the domestic fan industry on imported raw material along with exports to high-risk countries leads to international risk exposures.

The risks include:
Credit Risk: Pakistan's domestic fan exports are mainly directed towards high-risk countries like Yemen, Iraq, and low-end African and Middle Eastern markets. Payment mechanisms in these countries are largely insecure causing exporters to bear credit risk.

Exchange Rate Risk: The market-based exchange rate regime has increased volatility of local currency substantially which has increased both import and export risks.

7.5. Measuring Competitiveness

This Section is devoted to measuring the competitiveness of the domestic fan industry of Pakistan using the top-down approach. It employs an analysis of global competitiveness indicators as well as industry competitiveness indicators which are discussed in the following sections.

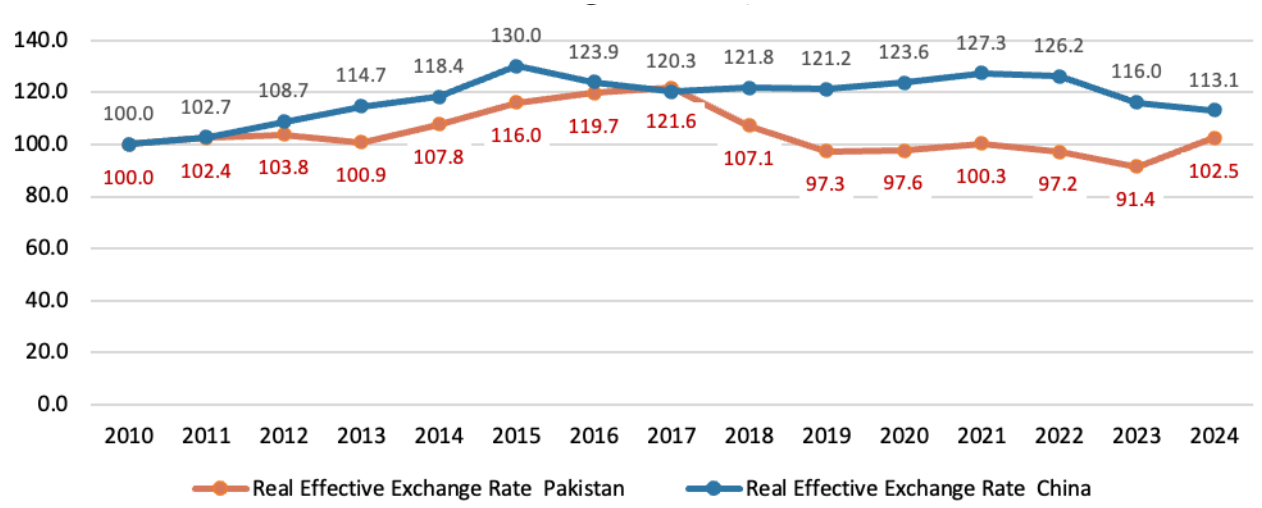
7.5.1. Global Competitiveness Indicators

Real Effective Exchange Rate (REER)

The Real Effective Exchange Rate (REER) compares the value of a nation's currency against the weighted average of a basket of other major currencies. It is a major driver of the external competitiveness of any country and determines its economic performance to a large extent. An increase in the REER implies that exports become more expensive and imports become cheaper, thus, an increase reflects a loss in export competitiveness.

The figure below presents an increasing trend in the REER of Pakistan till 2017 and REER of China till 2015. The REER of Pakistan started declining after 2017 and fell sharply till 2019 while in case of China, after 2015, there is a little decline REER but after 2017 it shows a little rise till 2022. In case of Pakistan, the REER started rising after reaching to its minimum in 2023. The REER of both the countries are getting closer but still Pakistan's REER is lower than China's, indicating depreciated Pakistani currency which is feasible for export competitiveness.

Figure 18: Real Effective Exchange Rate Index



Source: State Bank of Pakistan

The Business Ready (B-READY) Initiative

The Business Ready (B-READY) initiative is the World Bank's new framework introduced in 2024 to assess the business and investment climate across economies. It replaces the discontinued Doing Business Index, focusing on ten key thematic areas such as business entry, utility services, labor, and trade logistics. However, the first B-READY edition covers only 50 economies, meaning that large emerging markets like China and India are not yet included, which limits its use for broader cross-country comparisons.

Among the countries assessed, Pakistan performs relatively weakly in the utility services pillar, scoring 45.97 in the quality of regulations, 43.73 in governance and transparency, but a much stronger 87.92 in operational efficiency. Bangladesh performs slightly better in regulation and governance (52.81 and 50.29, respectively) but somewhat lower in efficiency (83.21). Viet Nam and Mexico show far

superior performance across all three sub-pillars, with scores above 65 in regulations and governance, and around 95–98 in efficiency. Overall, this suggests that while Pakistan's service provision operates efficiently once established, weaknesses in regulatory quality and governance transparency remain key constraints to ease of doing business, particularly when compared with more reform-oriented economies such as Viet Nam and Mexico.

Table 25: The Business Ready (B-READY) Pillars

Economy	B-READY: Utility Services Pillar 1: Quality of Regulations on Utility Services	B-READY: Utility Services Pillar 2: Quality of Governance and Transparency of Utility Services	B-READY: Utility Services Pillar 3: Operational Efficiency of Utility Service Provision
Pakistan	45.97	43.73	87.92
Bangladesh	52.81	50.29	83.21
Viet Nam	74.17	66.56	95.46
Mexico	63.89	68.57	97.92

Source: World Bank

Logistics Performance Indicator (LPI)

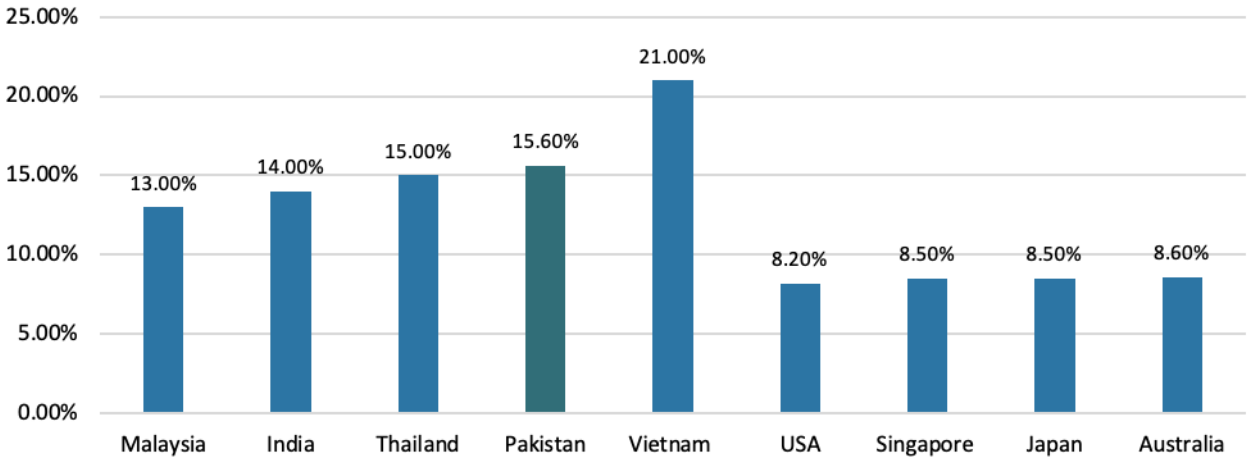
The estimated potential of the logistics sector in Pakistan was USD 30.7 billion (World Bank, 2015); however, this has not been realized due to the sector suffering from several challenges. Pakistan was ranked 122 out of 160 countries in the Logistics Performance Index (LPI) 2018, while disappearing from the international scenario in the 2023 LPI. This calls for immediate attention to the sector that faces several challenges, which must be addressed if Pakistan is to compete in the global economy, especially in the region where other countries are performing much better.

Table 26: Logistic Performance Index of South Asian Countries

Logistic Performance Index of South Asian Countries							
Country	LPI Rank	Customs	Infrastructure	International Shipments	Logistics Competence	Tracking & Tracing	Timeline
India	44	2.96	2.91	3.21	3.13	3.32	3.5
Maldives	86	2.4	2.72	2.44	2.55	2.77	3.18
Sri Lanka	94	2.58	2.49	2.51	2.42	2.79	2.79
Bangladesh	100	2.3	2.39	2.56	2.48	2.79	2.92
Nepal	114	2.29	2.19	2.36	2.46	2.65	3.1
Pakistan	122	2.12	2.2	2.63	2.59	2.27	2.66
Bhutan	149	2.14	1.91	1.8	2.35	2.35	2.49

Source: World Bank

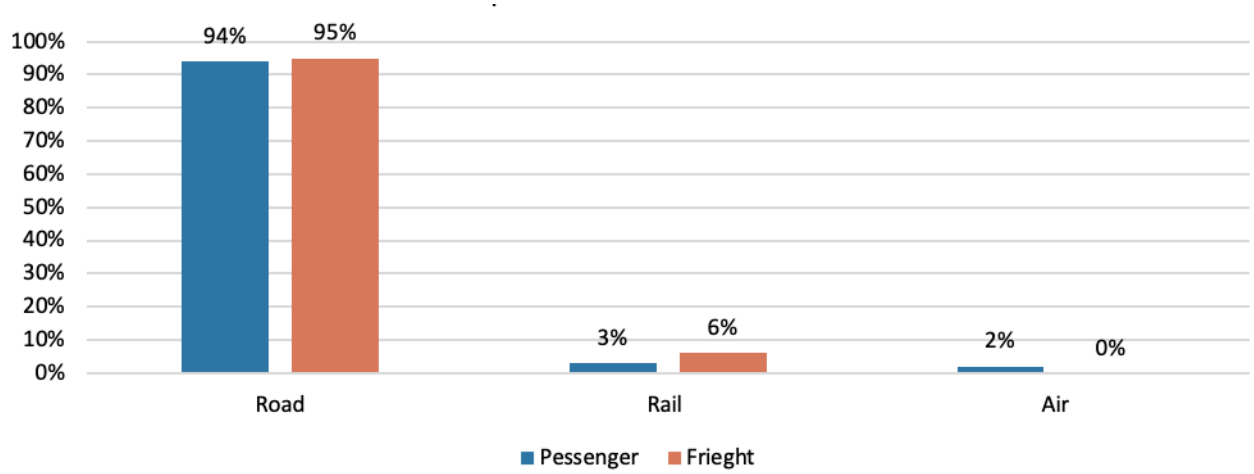
Figure 19: Logistics Contribution to GDP



Source: World Bank

In Pakistan, the modal shares are highly skewed towards roads. Roads are the predominant source of transportation in Pakistan accounting for more than 92% of passenger traffic and 96% of the freight. This imbalance has increased the cost of transportation through congestion, pollution, and expenditure on the maintenance of roads. In contrast, although the share of rail in both freight and passenger traffic in India is declining, it is greater than in Pakistan.

Figure 20: Transport Model Shares in Pakistan



Source: World Bank

The National Freight and Logistics Policy (2021) document has rightly pointed out that the logistics sector is fragmented and in need of modernization. A lack of institutional framework has further impeded the growth of the logistics sector and a mixture of old and new laws govern what is supposed to be a sector operating in the modern world. The main obstacle lies in the absence of a unified Ministry of Transport responsible for creating and executing a comprehensive National Transport Policy (Shaikh, 2019). Currently, the logistics sector is divided among multiple federal ministries, making it extremely difficult to establish coherent regulations for the sector's growth and integration.

7.5.2. Industry Competitiveness Measures

Revealed Competitiveness:

The third measure of Volrath (1991) is the revealed competitiveness and is calculated as the difference between the logarithm of relative export advantage and the logarithm of relative import advantage.

$$M_5 = RC = \ln(RXA) - \ln(RMA)$$

The table below provides the competitiveness indicators across top exporting countries of domestic fans. These indicators are measured for top 15 exporters of domestic fans.

Changes in the global market share indicates that international competitiveness of domestic fans manufactured in China, Malaysia, Mexico, Vietnam, and Panama have improved in the global markets. However, Pakistani and Ukraine's fans have not improved, their change in the market share of exports of domestic fan is zero.

Revealed Comparative Advantage (M2) highlights that comparative trade advantage for domestic fans is revealed for China, Malaysia, Vietnam, Ukraine, and Pakistan. The domestic fan industry of Pakistan has been participating in exports for a long time and is now developed enough to compete further.

Finally, the Vollrath Indices (M3-M5) for measuring competitiveness are also provided in the table below. The advantage of Vollrath Indices is that it incorporates both export and import perspectives. Comparing these indices across the above-mentioned countries shows that China, Malaysia, and Pakistan are the top three countries having competitive advantage for exporting domestic fans.

Overall, despite losing some export share in recent years, Pakistan's domestic industry is globally competitive and can be ranked among the top four exporters when compared on revealed comparative advantage (RCA) and Vollrath Indices.

Table 27: Competitiveness Measures at Industry Level

Rank	Exporters	Change in Market Share (2022-24, %)	Revealed Comparative Advantage	Relative Trade Advantage	Relative Export Advantage	Revealed Competitiveness (M5)
1	China	2.0	5.4	5.3	1.7	4.2
2	Malaysia	50.0	1.8	0.9	0.6	0.7
3	Mexico	33.3	0.8	-0.4	-0.2	-0.4
4	Taipei, Chinese	-23.8	0.8	0.4	-0.2	0.7
5	USA	-6.3	0.2	-2.2	-1.8	-2.7
6	Spain	-21.4	0.7	-0.9	-0.4	-0.8
7	Germany	-9.1	0.3	-0.2	-1.2	-0.4
8	Netherlands	-25.0	0.1	-0.2	-2.0	-1.0
9	India	-20.0	0.4	0.2	-0.8	0.7
10	Viet Nam	16.7	12.8	0.8	2.6	0.1
11	Panama	75.0	0.4	-0.1	-0.9	-0.3
12	Thailand	-33.3	0.5	0.1	-0.7	0.1
13	Italy	-16.7	0.2	-0.3	-1.7	-0.9
14	Ukraine	0.0	2.7	2.3	1.0	2.0
15	Pakistan	0.0	2.7	2.6	1.0	3.1

Source: ITC Trade Map, Author's Calculations

Chapter 8

Demand – Supply Analysis

Demand – Supply Analysis

8.1. Demand-Side Factors

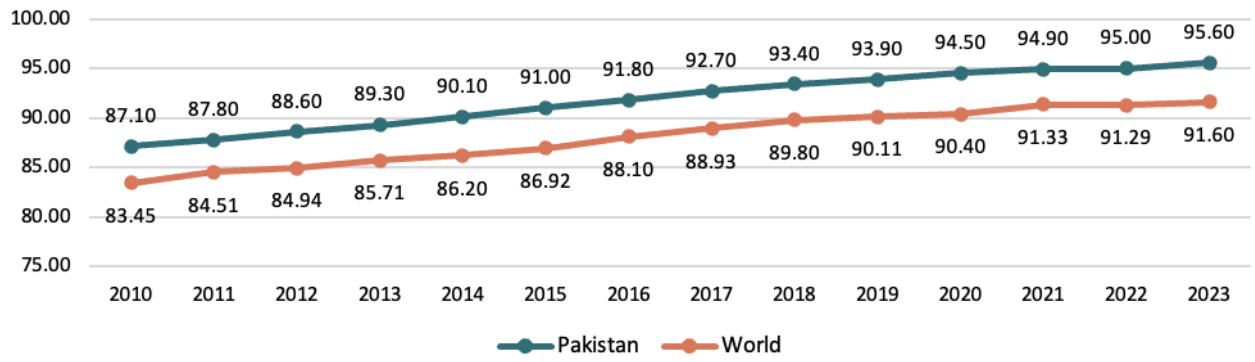
Housing Sector Growth

Pakistan's annual demand for housing, according to the Board of Investment, is estimated to be around 700,000 units while only half of this demand is currently being met. Growth in the housing sector is instrumental in boosting demand for domestic fans as is for other consumer appliances. Despite the economic slowdown amid COVID-19 and inflationary recession of 2023, the construction industry is expected to grow to PKR 2,705.5 billion by 2029.

Access to Electricity

In Pakistan, around 95.60%[5]of the population has access to electricity with nearly 100% availability in Urban areas. Access to electricity in Pakistan is above the world average. Any increase in access to electricity, especially in rural areas would increase the demand for electric fans.

Figure 21: Access to Electricity

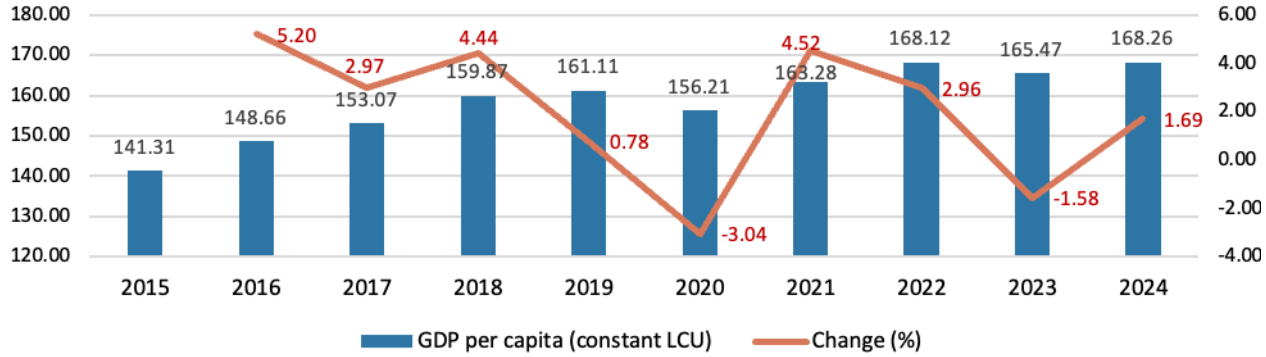


Source: WDI

Disposable Income (GDP per capita)

GDP per capita proxies the income level and reflects the purchasing power of the population. In terms of local currency unit (i.e., PKR), there is an increasing trend in GDP per capita which reflects in a general increase in demand for consumer products and services available in the economy.

Figure 22: GDP per Capita



Source: WDI

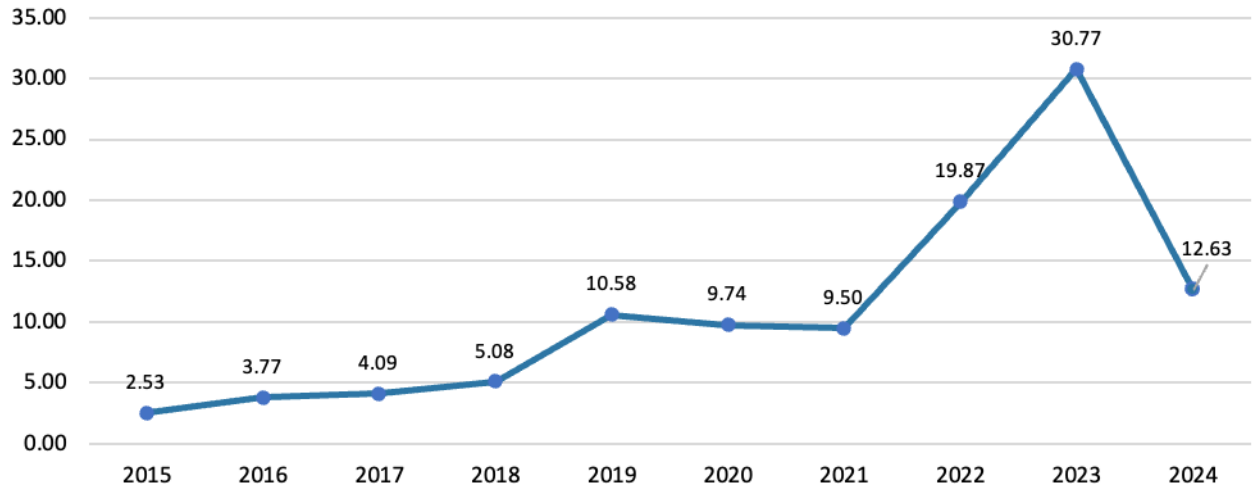
5. World Development Indicators

Consumer Purchasing Power (Inflation)

Inflation erodes the purchasing power of consumers. The recent past, 2021-23, has witnessed a recessionary inflation around the globe. The cost of production in Pakistan increased which caused a cost-push inflation. The main driver of cost-push inflation in Pakistan is mainly the multiple rounds of currency depreciation against the USD which increased prices of imported raw materials. The demand-supply framework predicts lower demand in an inflationary environment.

As inflation has stabilized in 2024, the demand for consumer goods is on the rise and it is expected to see a rise in the coming years.

Figure 23: Inflation Rate

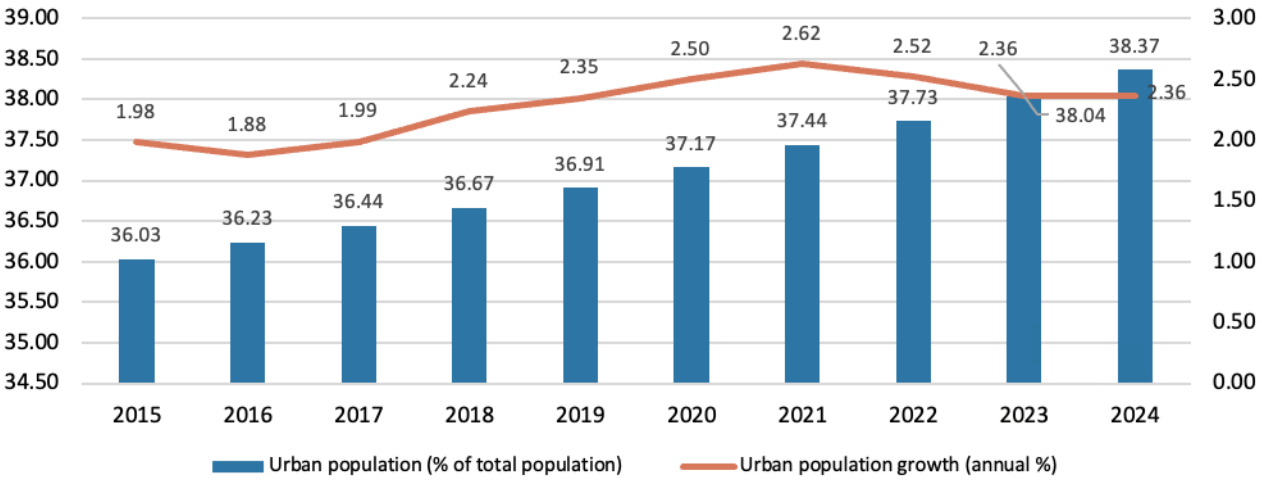


Source: WDI

Urban Population

The overall population growth rate of Pakistan is around 2 percent whereas, the urban population growth rate was around 2.4 percent in 2024. The continuous growth in the urban population causes demand for consumer durables to increase.

Figure 24: Urban Population



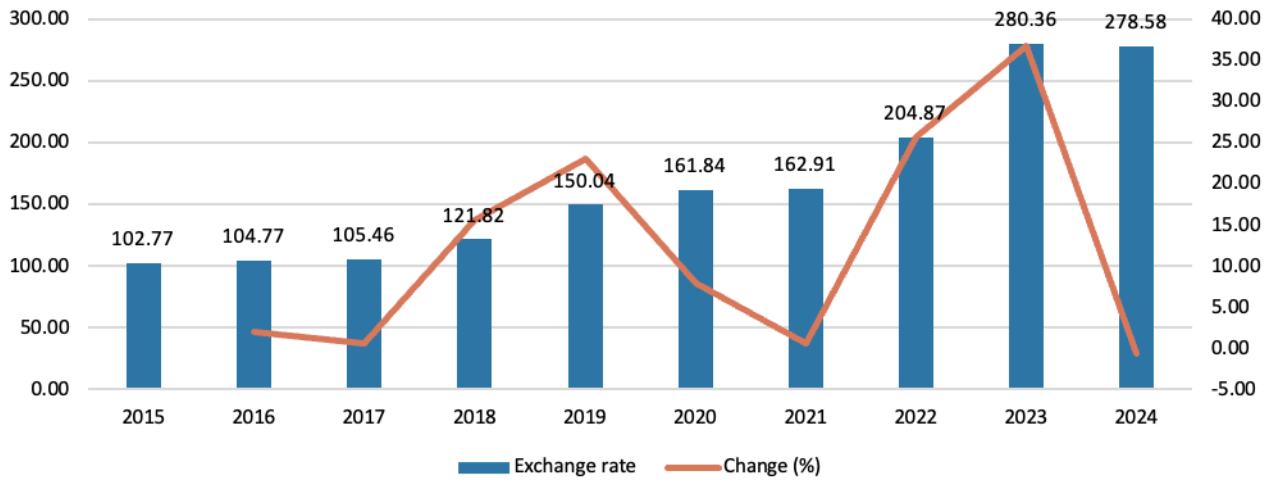
Source: WDI

8.2. Supply-Side Factors

Exchange Rate

Pakistani rupee (PKR) has been losing its value against the USD since 2015, however steep depreciations occurred from 2017-19, stabilized in 2020-21 but after COVID, in the period 2021-23 it has witnessed a sharp depreciation. After reaching 280.36 PKR/USD in 2023, the exchange rate has stabilized and the percentage change in exchange rate since 2023 is close to zero. The figure below shows the annual exchange rate of the Pakistani rupee against the USD. The exchange rate is a crucial supply-side factor as the domestic fan industry, like any other engineering industry in Pakistan, relies heavily on imported raw materials, and depreciation of the currency, impacts the value chain.

Figure 25: Official Exchange Rate



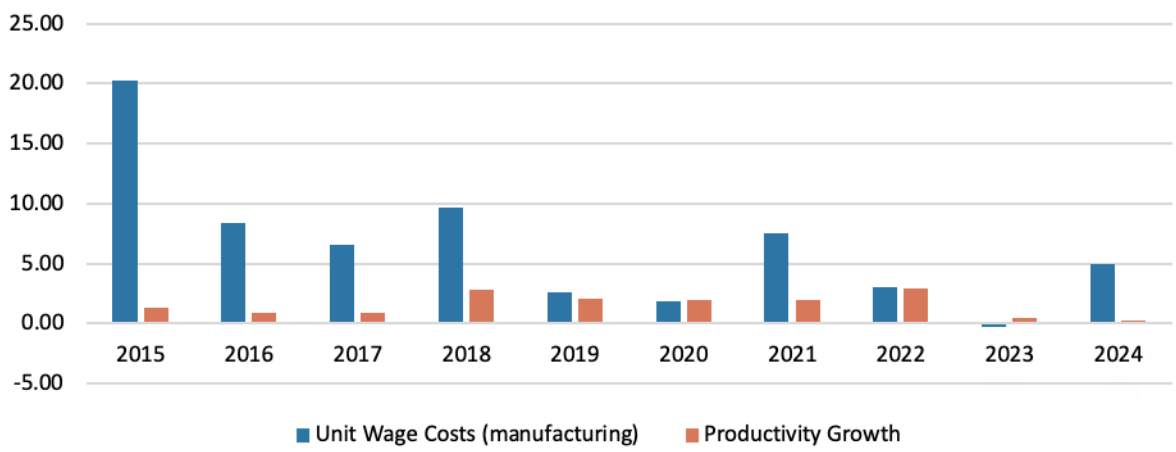
Source: WDI

Unit wage change and labor productivity growth

Any surge in unit wage increases the cost of production whereas productivity growth fosters a higher level of production. It is evident from the figure below that the growth in unit wage exceeds labor productivity growth over the period 2015-2024 which reflects a deterioration in labor market competitiveness in Pakistan.

Moreover, there is a demand-supply mismatch of the skills required in the domestic fan industry. For instance, industry requires skills such as lathe machine handling, winding, die development, and fitting skills.

Figure 26: Unit Cost Change and Labor Productivity Growth

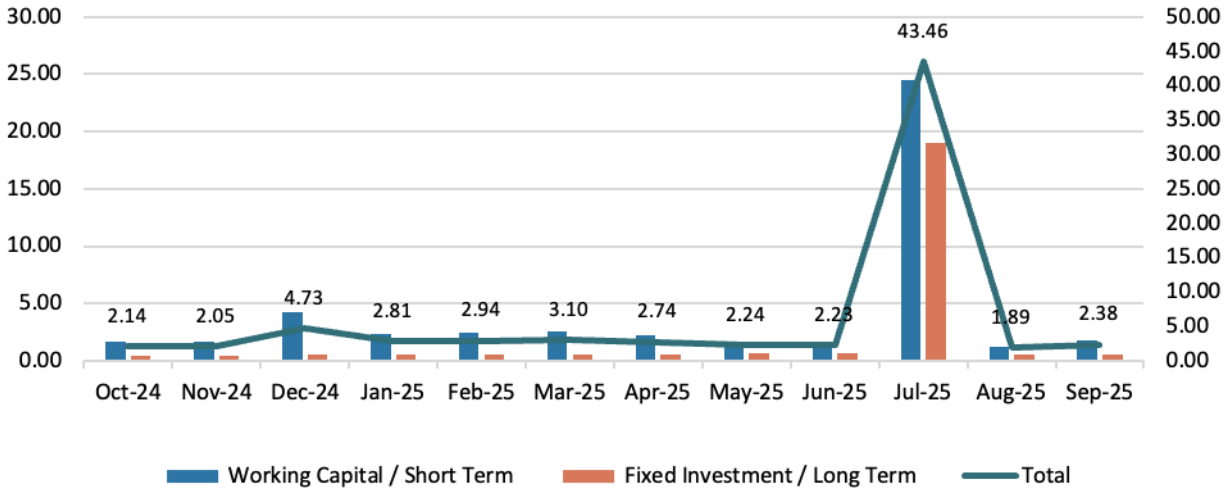


Source: ILO

Loans to Industry

Borrowing allows businesses to fuel growth and meet short-term liquidity requirements. The data shows a spike in June 2025, the total loan to the fan sector amounted to PKR 43.46 billion, apart from that the range of monthly loans to the sector is from PKR 2.14 billion to PKR 4.73 billion. The domestic fan industry relies less on bank borrowing mainly because of four reasons; (1) complex procedures, (2) higher costs of borrowing (interest rates), (3) sharia sensitivity to interest-based financing, and (4) undocumented small and medium enterprises (SMEs).

Figure 27: Loan Provisions to Manufactures of Fans



Source: SBP

8.3. Equilibrium Analysis

Correlation Analysis of Domestic Fan Production with Supply and Demand Side Factors

Correlation coefficients between domestic fan production and socio-economic indicators are measured using the Pearson correlation coefficient. The direction and magnitude of correlation can be summarized as follows:

- Domestic fan production is highly and positively correlated to GDP per capita reflecting a robust relationship between income-induced demand and the supply of domestic fans.
- The low correlation between domestic fan production and policy rate suggests a lower level of leverage in working capital financing which is also endorsed by industry participants.
- The moderately negative correlation coefficient between change in unit wage cost and production of domestic fans implies the labor-intensive nature of the domestic fan industry. Any increase in wages of labor tends to negatively impact the industry.

Table 28: Correlation Matrix

	Access to Electricity (% of population)	GDP per capita (constant $)	Inflation	Policy rate	Productivity growth rate (%)	Unit Wage cost (% YoY)	Exchange rate	Urban Population Growth rate (%)	Production of Fans
Access to Electricity (% of population)	1								
GDP per capita (constant $)	0.78	1							
Inflation	-0.32	0.12	1						
Policy rate	-0.55	-0.29	-0.09	1					
Productivity growth rate (%)	0.13	0.48	0.68	-0.18	1				
Unit Wage cost (% YoY)	-0.49	-0.12	0.56	0.67	-0.21	1			
Exchange rate	0.78	0.86	0.32	0.03	0.12	-0.34	1		
Urban Population Growth rate (%)	-0.71	-0.88	-0.18	0.06	-0.07	-0.18	-0.78	1	
Production of Fans	-0.11	0.61	0.08	0.02	0.83	-0.42	0.08	-0.02	1

Chapter 9

Government Policies/Initiatives

Government Policies/Initiatives

9.1. Quota for Imported Raw Materials Under SRO-565(I)/2006 & 2014

Electric fan manufacturers can avail SRO-565(I) for mainly importing electrical steel sheets. The input-Output Coefficient Organization (IOCO) allocates import quota under concessionary tariff regime for the available manufacturing capacity to importer-cum-manufacturer having suitable in-house facilities and who are registered with the Sales Tax Department under the category of manufacturer. Manufacturers availing such quota facility are subject to the following:

- In case of non-consumption of imported goods within one year from the date of import, the importer shall pay the customs duty and other taxes involved or obtain an extension for a further period from the concerned Director of IOCO after giving plausible reasons for seeking extension in utilization period.

- The Director of IOCO may, whenever deemed necessary, get the records of the importer-cum-manufacturer audited and may also get the stocks verified. In case it is found that the inputs have not been properly accounted for or have not been consumed in the manufacture and supply of goods as prescribed, recovery of duties and penal actions may be taken by customs authorities.

9.2. Export Finance Scheme (EFS)

The Export Finance Scheme (or refinance scheme) is in operation since 1973 with the objective to boost exports. Under the scheme, short-term financing facilities are provided to exporters through banks for exports of all manufactured goods with the exception of basic & primary raw materials.

EFS Part-I: Part-I is a transaction-based facility. The commercial banks provide export finance to the exporters on a case-to-case basis at the pre-shipment and/or post-shipment stage against Firm Export Order/Contract/LCs. Exporter must raise export proceeds equivalent to the loan amount as performance. The tenor of the facility is up to 180 days with a rollover option for a further 90 days subject to showing performance equivalent to 117 percent of the borrowed amount in case of availing rollover option.

EFS Part-II: It is a performance-based facility, where entitlement of exporter for revolving export finance limit is equal to 50 percent of the export proceeds realized through the export of eligible commodities in the preceding financial year. The export performance of an exporter has to match annually with the total loan availed during the financial year on a daily product basis.

The maximum tenor of the loan under Part-II of the scheme is also 180 days which could be rolled over for another 180 days subject to showing at least 70 percent shipment of loan availed in initial 180 days.

Mark-up Rate: The mark-up rate includes SBP refinance rate plus 2 percent. The SBP refinance rate is linked with the weighted average yield on six months T-Bills.

9.3. Long Term Financing Facility (LTFF)

Under the Long-Term Financing Facility (LTFF), the Participating Financial Institution (PFIs) can provide long-term local currency finance for imported and locally manufactured new plants and machinery to be used by the export-oriented projects. The facility is available to the export-oriented projects with at least 50% of their sales constituting exports or if their annual exports are equivalent to USD 5.0 million, whichever is lower.

9.4. Refinance Facility for Modernization of SMEs

The State Bank of Pakistan has launched a refinancing facility for the modernization of small and medium enterprises as part of its overall strategy to focus on the development of the SME sector in the country. Financing is available to a wide range of SME clusters/sectors.

Following are the key features of SBP's refinancing facility:

- Medium to long-term financing is available to SMEs for modernization of their existing units or setting up of new SME units.
- Financing is available against local purchase/import of new machinery at a mark-up rate of up to 6 percent per annum.
- The financing limit for small enterprises is Rs. 25 million and for medium enterprises it is Rs. 200 million.
- The maximum financing tenor is 10 years including a grace period of 6 months.

9.5. SME Bank Loan Regime

The table below provided outlines the primary current financing facilities available to Small and Medium Enterprises (SMEs) in Pakistan, combining conventional bank products with several lucrative government and State Bank of Pakistan (SBP) initiatives. The most accessible option for new entrepreneurs is the SBP's SME Asaan Finance (SAAF) scheme, which offers collateral-free loans up to PKR 10 million at a concessional 9% mark-up rate. Additionally, youth and agriculture sectors benefit from highly subsidized interest rates (ranging from 0% to 7%) through the PM Youth Business & Agriculture Financing Scheme, while specific provincial programs like the CM Punjab Asaan Karobar Loan offer interest-free financing for local startups. Alongside these targeted schemes, commercial banks provide standard market-rate working capital and term loans that typically require collateral.

Table 29: SME Bank Loan Financing Facilities

Scheme Name	Purpose	Financing Limit (PKR)	Mark-up Rate (p.a.)	Key Eligibility Requirements
SME Asaan Finance (SAAF/I-SAAF)	Working Capital & Term Finance	Up to 10 million	Capped at 9%	New SME borrowers (must not have an existing relationship with the bank); collateral-free.
PM Youth Business & Agriculture Financing Scheme (PMYB&ALS)	New/expansion of business, agriculture, IT/e-commerce	Up to 7.5 million	Tier 1 (up to 0.5M): 0%; Tier 2 (>0.5M to 1.5M): 5%; Tier 3 (>1.5M to 7.5M): 7%	Pakistani citizens aged 21-45 (18+ for IT); 25% quota for women.
CM Punjab Asaan Karobar Loan Scheme	Startups & expansion for small businesses (Punjab residents)	Up to 1 million (potentially up to 30 million in other sources with varying tiers)	0% (Interest-free)	Punjab residents, age 18-50, valid CNIC, no prior defaults.

Scheme Name	Purpose	Financing Limit (PKR)	Mark-up Rate (p.a.)	Key Eligibility Requirements
Standard Bank Products (e.g., UBL Karobar Loan, Meezan Bank Islamic Products)	Working Capital, Term Finance, Trade Finance, Seasonal Finance	Varies by bank and business size	Market-based rates (fixed or variable)	Requires collateral (property, assets, deposits); standard bank terms and conditions apply.
Export Finance Schemes (EFS) & LTFF	Export-oriented projects, machinery purchase	Varies by bank/project size	Concessional rates set by SBP	SME must be an exporter or involved in an export-oriented industry.

9.6. Cash Margin on Imports

Cash margins or margins against LCs aim to discourage the import of certain products. The State Bank of Pakistan has imposed a 100 percent cash margin on imports of domestic fans including Ceiling Fan (HS-84145110), Pedestal Fan (HS-84145120), Table Fan (HS-84145130), Exhaust Fan (HS-84145140), and other electric fans (HS-84145190) in 2017.

Chapter 10

Swot Analysis

Swot Analysis

10.1. Strengths

- Pakistan's fan industry has the capacity to produce high-quality fans to match the demand for high-end sophisticated consumer markets.
- The domestic fan industry's internal processes allow it to meet the stringent requirements under international certifications such as CE and UL markings.
- Over the years, the industry has developed a strong backward linkage with its suppliers/vendors located mostly in the vicinity of Gujrat and Gujranwala.
- Pakistan's domestic fan industry has also developed e-commerce, retail and marketing channels.
- The domestic fan industry is mature enough to adapt to technological advancements in parallel with any shifts in consumer preferences.
- The local industry is catering to around 99% of the demand of domestic fans in the Pakistani market providing economies of scale and competing with imports.
- Pakistani brands such as GFC, Pak Fan, Royal Fan, and others have strong consumer loyalty both in domestic as well as in international markets.
- The extensive domestic dealer and distributor networks facilitate higher penetration rates and availability of products even in remote areas.
- The availability of Fan Development Institute in Gujrat, having upgraded machinery for trainings, material testing and other common facilities.

10.2. Weaknesses

- A large mismatch between technical education and R&D needs of the industry causing a shortage of skilled labor.
- Small manufacturers are mostly unregistered and as a consequence have limited or no access to financial and other facilities provided by the government.
- Lack of marketing and branding limit the premium pricing of domestic fans.
- The size of the largest domestic manufacturers is relatively small as compared to regional and global competitors. This inhabits the ability of domestic manufacturers to compete on volumes and prices.
- There are no joint-ventures in the sector, this impacts technology transfer and product upgradation.
- There is lack of awareness of standards and ISO certifications.

- Sales and marketing strategy of some potential manufacturers is not developed for exports.
- There is a lack of awareness of export promotion schemes.

10.3. Opportunities

- Global demand for domestic fans has been increasing due to a change in global climate. Pakistani domestic fans can penetrate in most markets. However, the top potential markets are mostly from the African, Middle-Eastern, and Asian regions.
- Innovation towards energy-efficient and décor fans would allow the domestic fan industry to increase its footprint further in the international markets.
- Brushless Direct current (BLDC) fans are being successfully supplied in the local market; however, conventional fans are being exported. With the production capacity and experience of BLDC fans,
- Pakistan's fan industry has the opportunity to work on the exports of BLDC.
- In hot rural areas, solar-powered fans have shown robust growth in sales. There still exists further scope for penetration.
- Pakistan's Real Effective Exchange Rate (REER) has depreciated significantly which improves price competitiveness in international markets. Pakistani manufacturers can capitalize on this opportunity by making strategic entries in price-sensitive markets such as Africa.
- Pakistan's Trade Agreements and unilateral trade concessions such as the EU GSP+ provide an opportunity for Pakistani exporters to enter new markets.
- Participation in trade fairs and exhibitions can bring in new technology and joint ventures.
- Product design and development through institutes offer new markets.
- Investments for building international brands as well as acquiring existing brands and distribution networks would further expand export opportunities.

10.4. Threats

- Electric sheets are subject to regulatory import duties whereas there is no restriction on the exports of recycled aluminum and copper ingots.
- Production suffers from seasonality and a large number of factories have to shut their production from August to December each year.
- Access to finance is a major issue, viable credit and means of financing are not generally available. Three-way collateralization of loans by commercial banks has compelled industry participants to rely more on equity capital.

- The volatility of raw material prices has been exposing the industry to a continuous threat. The market-based exchange rate regime has increased the sensitivity of prices for imported raw materials.

- Non-competitive prices of Pakistani fans in international markets are adding export risk to the industry.

- Inconsistent tariff regimes, burdensome tax policies, and harassment by revenue officers are also impeding growth in the domestic fan industry.

- Extraordinary events such as COVID-19, global inflationary recession, floods, and political instability induce both demand and supply-side shocks to the consumer durable industry. Demand decreases due to lower purchasing power and the value chain gets disrupted due to distortions in raw material supplies.

- Despite a huge vendor base around the fan industry clustered in Gujrat and Gujranwala region, the non-standardization of these parts/components does not allow export of a consistent quality product. Therefore, large firms rely on imported raw materials such as electric steel sheets, PCBs, copper enameled wire, ball bearings etc.

- Suppliers of raw materials are able to exert considerable pressure on SMEs in peak production periods.

- Skilled labor in the industry is getting retired and the new generation is not interested in developing skills needed in the industry. This creates a shortage of skilled labor in peak season and often, production and order delivery gets delayed.

Chapter 11

Key Findings

Key Findings

The analysis of Pakistan's domestic fan industry reveals a sector that is technologically adaptive, domestically robust, and strategically positioned for export expansion, yet constrained by structural weaknesses and external risks. The findings below synthesize insights from the SWOT analysis and stakeholder interviews, offering a holistic view of the industry's current situation and future trajectory.

11.1. Strong Domestic Base with Mature Manufacturing Capabilities

The fan industry in Pakistan has developed a highly mature and well-integrated production base, supported by strong backward linkages in Gujrat and Gujranwala. Pakistani firms have proven their ability to produce high-quality, energy-efficient, and technologically sophisticated fans — including DC, BLDC, and inverter variants — at scale. The industry caters to approximately 99% of domestic demand, reflecting deep market penetration, well-established distribution networks, and strong consumer loyalty toward leading brands such as GFC, Pak Fan, and Royal. The existence of the Fan Development Institute in Gujrat further strengthens technical capabilities and provides an institutional platform for testing, training, and product development.

11.2. Technological Responsiveness and Growing Orientation Toward Energy Efficiency

A major finding is the industry's ability to rapidly adapt to technological change and consumer preference shifts, particularly the shift towards energy-efficient fans. Firms have successfully upgraded to BLDC and inverter technologies and built internal systems needed to meet international compliance requirements such as CE and UL certifications. This demonstrates not only manufacturing competence but also a capacity for incremental innovation, this positions the industry to explore high-end export markets where efficiency and design are key differentiators.

11.3. Persistent Skill Shortages Due to Generational Shifts in Labor

Despite strong manufacturing capabilities, the industry is facing a critical human capital challenge. Skilled workers — including machinists, winders, metalworkers, mold technicians, and assembly specialists — are aging and retiring, while the younger workforce shows limited interest in joining the fan industry. Many young workers prefer to pursue opportunities abroad or start their own micro-enterprises rather than working in factories. This has created a structural skill gap that becomes especially acute during peak production seasons, often resulting in delayed order fulfillment and production bottlenecks. The mismatch between technical education and actual industry requirements further exacerbates this problem. Without targeted interventions in vocational training, certifications, and workforce retention, labor shortages may emerge as a major constraint on future growth.

11.4. Limited Scale and Weak Access to Finance Constrain Competitiveness

The findings indicate that most domestic manufacturers remain small or medium-sized relative to regional competitors such as India and China. Their limited scale restricts their ability to achieve cost efficiencies or invest in advanced technology, branding, and automation. Access to formal finance remains a major obstacle:

- Commercial banks demand high collateral margins, often requiring three-way collateralization.
- Documentation gaps among small manufacturers restrict access to government schemes.

These structural financial constraints hinder modernization, expansion, and export readiness.

11.5. Untapped Export Potential, but Barriers to Market Entry Remain Significant

Global demand for fans is rising due to climate change and increasing temperatures across Africa, the Middle East, and South Asia. Pakistan has meaningful opportunities under preferential schemes such as the European Union's Generalized Scheme of Preferences Plus (GSP+), Indonesia-Pakistan Preferential Trade Agreement (IP-PTA), Malaysia-Pakistan Closer Economic Partnership Agreement (MPCEPA), and China Pakistan Free Trade Agreement (CPFTA) Phase II. However, several barriers limit the industry's ability to fully exploit these markets:

- Lack of branding and weak marketing strategies hinder premium pricing abroad.
- Limited awareness of export standards, certifications, and trade schemes reduces participation.
- High dependence on imported inputs (electric steel sheets, copper wire, PCBs, ball bearings) weakens price competitiveness in international markets.
- Non-standardized local components limit the ability of SMEs to deliver consistent quality products suitable for export.

Despite these challenges, the industry's strong experience with BLDC and inverter fans presents a promising opportunity for Pakistan to export higher-value products rather than relying solely on conventional AC fans.

11.6. Exposure to External Shocks and Policy Inconsistencies

The sector remains highly vulnerable to external shocks such as exchange-rate volatility, import price fluctuations, political instability, and global economic slowdowns. These shocks affect raw material prices, demand patterns, and working capital cycles. Additionally, inconsistent tariff regimes, bureaucratic hurdles, and harassment by revenue officials discourage formalization and investment. Seasonality in demand also forces many firms to shut production for several months each year, raising unit costs and discouraging long-term workforce retention.

11.7. Strategic Opportunities for Growth Through Innovation and Market Diversification

Despite the structural challenges, the industry is positioned to grow through product innovation, design upgrades, and market diversification. Decor fans, super-efficient BLDC fans, solar-powered fans, and internationalized product designs can enable Pakistani firms to enter niche markets where quality and efficiency override mass-scale price competition. Opportunities also exist for:

- establishing joint ventures to accelerate technology transfer,
- participating in international exhibitions,
- leveraging depreciated REER to target price-sensitive markets,
- investing in brand building to improve visibility in global markets.

With coherent policy support, especially in standardization and compliance, Pakistan can shift from exporting low-priced conventional fans to higher-value premium fans.

11.8. Structural Dependence on Imported Raw Materials and Vulnerable Supply Chains

A major finding is that the fan industry relies heavily on imported raw materials—such as electrical steel sheets, copper wire, PCBs, ball bearings, and polyester films—yet faces high tariffs, regulatory duties, and quota restrictions. Small and medium sized manufacturers are particularly disadvantaged in securing electric steel sheet quotas, resulting in uneven access to quality inputs. Many SMEs are therefore forced to use scrap materials, which reduces product quality, energy efficiency, and export competitiveness.

This structural dependence and distorted tariff regime support the recommendations for rationalizing import duties, restoring regulatory duties on recycled metal exports, and allocating collective quotas for electric sheets.

11.9. Compliance Costs and Absence of Local Testing Infrastructure Increases Export Barriers

One of the strongest findings is the lack of internationally accredited testing laboratories in Pakistan. Exporters must send fans abroad—mainly to China—for safety and compliance tests such as CE, UL, LVD, EMC, and RoHS.

This increases cost, delays shipments, and discourages SMEs from entering export markets.
This finding drives the recommendation to upgrade PCSIR laboratories, align national standards with global standards, and provide subsidies for international certification.

11.10. Marketing, Branding, and Market Development Remain Weak

The industry has strong manufacturing capabilities but lacks modern marketing strategies, branding initiatives, and digital presence. Many SMEs have:

- Limited access to e-commerce channels (Amazon, Daraz)
- Have weak branding and packaging
- Do not participate regularly in international trade fairs
- Lack business-to-business (B2B) market linkages

These findings justify recommendations for digital marketing, brand building under a national program, government-financed participation in trade fairs, and virtual B2B sessions led by TDAP and commercial sections in embassies.

11.11. Seasonality of Domestic Demand Reduces Capacity Utilization

Domestic demand peaks between January and July, after which a majority of factories operate at suboptimal capacity or close down for the season.

This seasonality limits productivity, discourages workforce retention, and increases unit production costs.

This aligns with recommendations for diversifying export markets, particularly in Southern Hemisphere regions where summer demand cycles are opposite to Pakistan's.

11.12. Non-Standardization of Vendor Outputs Limits Quality Consistency

The presence of a large vendor base in Gujrat and Gujranwala could be a strength, but variability in component quality leads to inconsistent final products. SMEs particularly struggle with:

- Non-standard bearings
- Low-grade scrap metal rotors/stators
- Variations in molds and fittings
- Quality issues in enameled wire and PCBs

This finding underlies the recommendation for vendor development, support for PCB localization, and standardization of raw materials and components.

11.13. Large Export Potential Exists but Requires Strategic Policy and Industry Upgrading

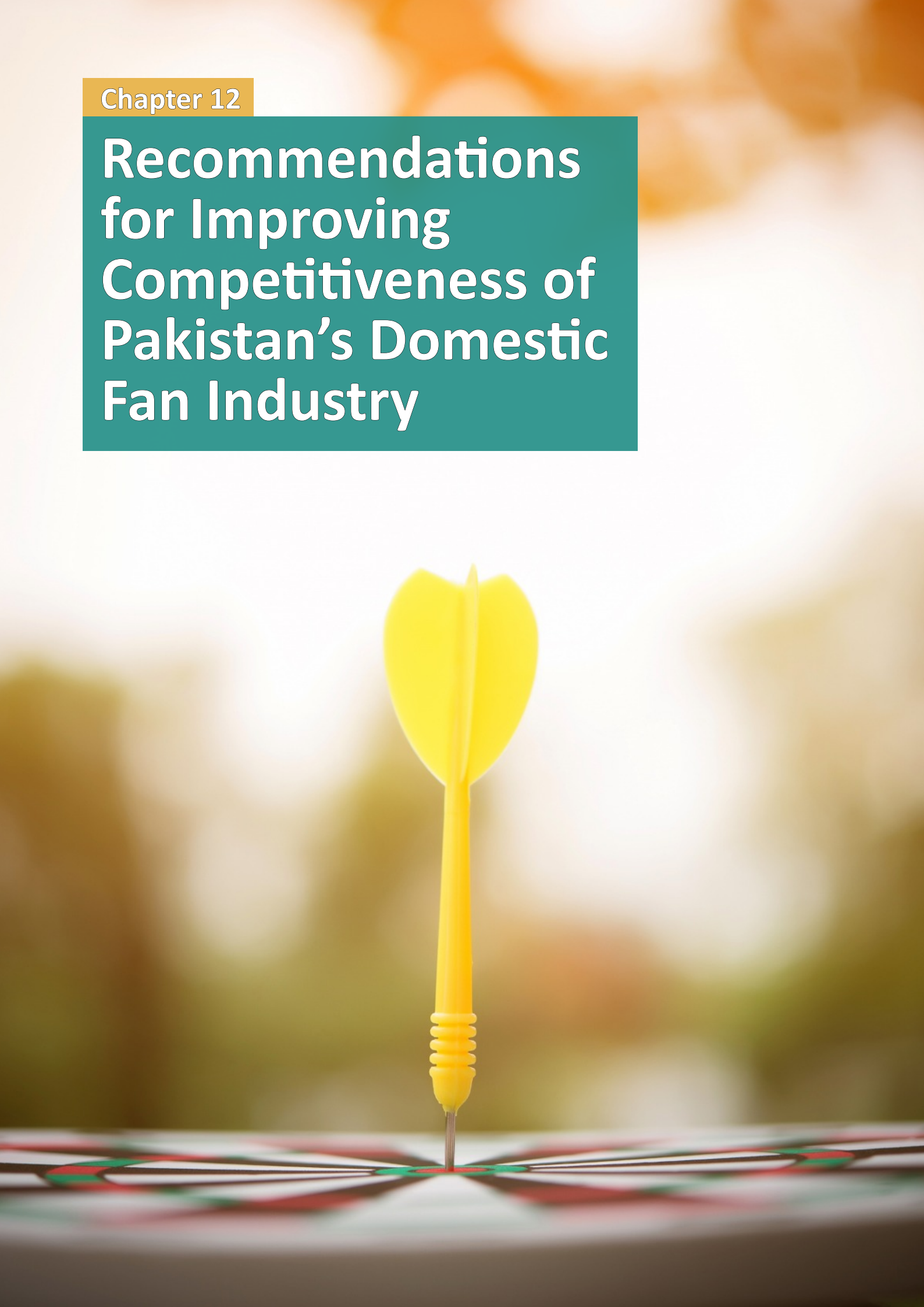
Pakistan is already among the top 15 fan exporters globally, and further potential exists in Africa, the Middle East, South Asia, and high-end niche markets in Europe and the USA.
However, realizing this potential requires:

- Improving product mix (BLDC, decor fans, plastic fans)
- Addressing cost disadvantages
- Upgrading design capabilities
- Removing tariff and logistics barriers
- Government support for certifications and branding

These findings validate the recommendations for product diversification, promotion of plastic fans, and incentives for modern technology adoption.

Chapter 12

Recommendations for Improving Competitiveness of Pakistan's Domestic Fan Industry



Recommendations for Improving Competitiveness of Pakistan's Domestic Fan Industry

12.1. General Recommendations

Exports of Recycled Raw Materials Must be Discouraged

Recycled copper, steel, and aluminum are major inputs in the manufacture of various components of fans such as blades, rotors, stators and others. Pakistan's recycling industry has started exporting these materials to China in the wake of a ban on recycling activities in that country.

Regulatory duty needs to be restored on exports of recycled metals in order to protect domestic industries in the engineering sector.

Special Arrangements are Needed for Allocating Import Quotas of Electric Sheets

Most small and medium-size domestic fan manufacturers are unable to get import quota for electric steel sheets and end up producing energy-inefficient domestic fans. These manufacturers alternatively use scrap materials to produce rotor and stator components for fans.

Special arrangements such as a cumulative quota needs to be given to domestic fan associations (i.e., PEFMA) or the larger vendors based on estimated production capacity of SMEs.

Difficulties in Export Receipts Needs to be Addressed

Foreign importers in developing or least developed countries generally use informal channels for remitting export proceeds. After Pakistan's inclusion in the Financial Action Task Force's (FATF) grey list, remittances through informal channels became difficult, and even though Pakistan is no longer on the FATF, remittances from developing countries are still a major issue. State Bank of Pakistan (SBP) needs to develop a mechanism to facilitate Pakistani exporters facing this issue.

A smooth foreign payment mechanism is especially required to facilitate and promote exports in high-risk countries such as Yemen, Iraq, Sudan, and some African countries.

To reach certain markets, it can take up to 80 days after issuance of B/L for the consignment to reach its destination, Currently, the SBP requires export proceeds be realized within 30 days for shipments made against cash against documents and LC's where payment terms are sight. It is suggested that for markets where exporters are able to prove to the SBP's satisfaction long transit times, the SBP may allow up to 80 days for realization of export proceeds.

Greater Participation in International Trade Fairs

Government needs to finance participation in international trade fairs for fan exporters to allow exporters to display products in new markets and to build business contacts. This can be funded from the EDF.

Fan Sector Trade Delegations to Identified Markets

Government needs to finance trade delegations to prospective markets, with meetings arranged by commercial attaches with prospective buyers. PEFMA and few large manufacturers must be appreciated and supported as they are actively working on exploring new markets for exports.

Review of Current Duty Drawback Rate

The fan industry had submitted calculations of Duty Drawback at 8.0% but only 4.39% was approved. Industry is requesting a review and revision.

Hiring of Sector Specialists in Key Markets

It is recommended that the proposal for hiring sector (fan / engineering industry) specialists in key existing and potential markets be considered. Hired specialists would work under the commercial attachés at Pakistani embassies in these markets.

Building Further on the Positive Impact of DLTL

Industry believes that since value addition by the fan industry is significant and since there is a huge export potential, the DLTL scheme needs to be reintroduced for the industry and a case can be made for increasing the rate. Since implementation of the DLTL scheme, exports increased by more than 30% and Pakistan reached 15 in global domestic fan exports in 2024.

Refunds Should be Made Timely

Fan manufacturers report that duty drawback refunds, Pakistan's tax rebate scheme meant to reimburse embedded taxes in exported goods, are subject to significant delays, often stretching to two years or more. These prolonged delays create acute cash-flow pressures, particularly for small and medium exporters who depend on timely refunds to finance production cycles and manage working capital. As a result, firms struggle to invest in technology upgrades, maintain competitive pricing, or expand their export capacity. The uncertainty and inconsistency in the release of duty drawback payments undermines the very purpose of the scheme, reducing its effectiveness as an export-support instrument.

Access to Finance Needs to be Simplified

Manufacturers do not have access/awareness to/of soft loan regimes and fan manufacturers are reluctant to seek interest-based financing schemes. The cumbersome collateral requirements of commercial banks also discourage bank borrowing. For instance, securing loans from commercial banks is grueling mainly due to a three-way collateral securitization for a single loan, that is, a real estate mortgage, personal guarantee, and charge creation on current assets.

State Bank of Pakistan is requested to simplify the financing regime by reducing collateral requirements and encouraging banks to look at cashflows as a basis for financing of SMEs. In addition, the SBP needs to simplify procedures, and provide alternate Islamic financing products.

Advancing the Technical Knowledge Pool Will Improve Industry Competitiveness

The Fan Development Institute was established in 2005 jointly by the ministry of Science & Technology and the Pakistan Electric Fan Manufacturers Association (PEFMA). The purpose of setting up this institute was to produce skilled/semi-skilled industrial workers for meeting the needs of the fan

industry of Gujrat and Gujranwala. These vocational training programs are not yielding desired results compelling manufacturers to provide on-job training to new workers.

The curriculum for skill development programs needs to be revised in consultation with relevant stakeholders including industry participants, PEFMA, and relevant government bodies. Courses and trainings on lathe machine handling, winding, die development, and fitting process should be covered under the ambit of the Fan Development Institute (FDI)

Diversification of Product Mix

Domestic fan industry needs to broaden its product offering by venturing into industrial fans with categories such as Axial & Propeller fans for industrial use and roof extractors and air curtains for domestic use.

Promoting Plastic Fans Especially for Exports

Exports of the fan sector can increase by producing disposable plastic fans, which are aimed at the richer consumer markets like the USA and Europe. China has a major market share in this segment and is hard to compete with but some of the manufacturers from Pakistan have started exporting plastic fans to Europe. Pakistani fans are not price competitive but are competitive in terms of quality and reliability.

Since the manufacturing of plastic fans requires injection molding and 3-D printing machines, both of which consume large amounts of electricity, the government may support such exports by providing incentives in the form of higher drawback rates on exports of plastic fans.

Upgradation of National Laboratories to Enhance Testing Facilities

Currently, Pakistani exporters need to send their products abroad (mostly to China) in order to fulfil certain marking requirements. For instance, testing requirements for getting a CE mark requires tests for which a local accredited testing facility is not available. The absence of these facilities has increased both the compliance time and costs.

PCSIR, Lahore can be upgraded to provide testing facilities such as Low Voltage Directive (LVD) test, Electromagnetic Compatibility (EMC) test, and test for Restriction of the use of certain Hazardous Substance in Electrical and Electronic Equipment (RoHS).

National Standards Should Align with Global Standards

The production of fans in Pakistan is mostly aligned with the preferences of local consumers and the product does not comply with international standards. To promote export competitiveness, industry needs to lobby for the implementation of domestic standards aligned to international standards. This will lead to less difficulties in complying with standards of major importing countries.

New Markets Could Resolve the Issue of Seasonality

Given that 80% of the sales from Gujrat and Gujranwala are confined to the local market where demand only exists between January to early July, a large number of small factories have to shut down during the remaining part of the year. Fan exports from Pakistan can be developed to cater to demand in countries in the Southern Hemisphere to ensure that during those months when local sales are not taking place, fans can be exported to countries in South America and Africa.

Bangladesh's High Import Tariffs Need to be Addressed

There is a market for Pakistani fans in Bangladesh, however high tariffs are preventing Pakistani exporters from exploiting this opportunity. It is recommended that the Government of Pakistan take up this issue with the Government of Bangladesh, and ensure that fans are part of any FTA/PTA that Pakistan signs with Bangladesh.

Tariff Parity Needs to be Taken Up with the Government of Vietnam

There is a huge demand for domestic fans in Vietnam for which Pakistani manufacturers have a comparative advantage. However, the customs tariff in Vietnam currently favors India and China over Pakistan. Ministry of commerce needs to take this up with the Vietnamese Government to allow Pakistani domestic fans to enter the Vietnamese market on similar terms as those offered to Chinese and Indian fan imports.

Government Needs to Subsidize Cost for Obtaining International Certifications

International certifications are among the major non-tariff barriers for exporting domestic fans to major markets. The estimated cost for getting the CE mark is between PKR 5 to 6 million, and for G mark, it is between PKR 2 to 3 million.

The government should utilize export development fund (EDF) to provide subsidies in order to cover certification costs.

Definition of SMEs and the Classification Criteria Must be Harmonized

A consistent and harmonized definition of Small and Medium Enterprises (SMEs) is essential for effective policymaking in Pakistan's fan industry. Currently, multiple institutions, including the SBP, FBR, SECP, and SMEDA, use different size thresholds based on employment, annual turnover, or asset value. These conflicting classifications create confusion for firms and lead to fragmented support programs, where a company may qualify as an SME under one regulator but not under another. For fan manufacturers, this inconsistency directly affects eligibility for concessional financing, tax incentives, export facilitation, and technology-upgradation schemes. Harmonizing the SME definition across government would streamline access to support programs, improve policy targeting, and ensure that genuine small and medium fan manufacturers receive the benefits intended for them.

Table 30: SMEs Definition Across Different Institutions

Institution	Micro Enterprise	Small Enterprise	Medium Enterprise	Basis of Classification
State Bank of Pakistan (SBP)	–	Up to 50 employees and/or up to PKR 150 million annual turnover	51–250 employees and/or PKR 150–800 million annual turnover	Employment + Annual Turnover
SMEDA (Small & Medium Enterprise Development Authority)	Fewer than 10 employees	Up to 50 employees	51–250 employees	Employment only
FBR (Federal Board of Revenue)	–	Annual turnover below PKR 100 million	Annual turnover PKR 100–800 million	Annual Turnover
SECP (Companies Act – "Small Company")	–	Paid-up capital ≤ PKR 100 million OR turnover ≤ PKR 300 million	– (SECP does not define medium firms explicitly)	Paid-up Capital + Turnover
Punjab & Sindh Provincial SME Policies	Up to 5–10 employees	Up to 50 employees	Up to 250 employees	Employment (varies province to province)

Customs Duties & Levies on Imports Need to be Rationalized

Certain raw materials used in the fan industry are facing high customs duties under the current tariff regime, there is no benefit to the fan industry in Finance Act 2025. A list is provided in the table below.

There is very little difference in the customs duties for few raw materials, for most of the raw materials or components, being used in the fan manufacturing, the CD, ACD, and RD is the same. To support the industry and make it more competitive in international market, the government needs to remove import and regulatory duties on imported raw materials/components that are not domestically available.

Table 31: Duty Structure for Raw Materials

PCT Code	Description	2024-25 (%)			2025-26 (%)		
		CD	ACD	RD	CD	ACD	RD
3911.1090	Impregnating Resin	20.0	4.0	0.0	20.0	4.0	0.0
8534.0000	Printed Circuits	20.0	-	-	10.0	-	-
3920.6300	Polyester Film	16.0	2.0	0.0	-	-	-
7225.1900	Electrical Silicon Steel Sheet	0.0	0.0	2.5	0.0	2.0	2.5
8482.1000	Ball Bearings	11.0	0.0	8.0	10.0	2.0	8.0
8483.3020	Plain Shaft Bearings	20.0	4.0	0.0	20.0	4.0	0.0
8536.5099	Push Button Switch	20.0	4.0	0.0	20.0	4.0	0.0
8544.1900	Enamelled Aluminium Wire	20.0	4.0	0.0	20.0	4.0	0.0
3208.9090	Polyurethane Varnish	20.0	4.0	5.0	20.0	4.0	5.0
3208.9011	Polyamide Varnish	11.0	0.0	5.0	10.0	2.0	5.0
9107.0000	Timer 5-15 Min	3.0	0.0	0.0	0.0	2.0	0.0
3902.3000	Polyproplen Co Polymar	3.0	2.0	0.0	0.0	2.0	0.0
3901.9000	LLDP	3.0	2.0	0.0	0.0	2.0	0.0

12.2. Recommended Marketing Strategies

The National Brand-Building Program

The international competitiveness of Pakistani fans is firmly linked with the perception of quality. Branding would allow exporters to charge a premium. Product-level branding has been adopted by large exporters in their individual capacities; however, SMEs suffer in the absence of strong brands.

Country-level branding is recommended to cover small industries as well. Moreover, a national brand development program should be launched, similar to the TURQUALITY program in Turkey and the domestic fan industry should be covered under this program. Government should also roll out subsidies for registering brands in potential markets.

Digital Marketing

Virtual Business-to-Business (B2B) Sessions: Trade Development Authority of Pakistan (TDAP) should hold virtual B2B sessions to help exporters understand product and market dynamics of domestic fans in different regions.

Commercial sections in Pakistani Embassies abroad also need to facilitate these sessions by taking foreign buyers, local manufacturers, and other stakeholders on board. By matching demand and supply, the focus must be given to lead generation.

Webinars: Pakistan's trade missions should hold webinars for domestic fan manufacturers for each of the potential countries identified by the Pakistan Electric Fan Manufacturers Association (PEFMA) as well as for markets identified in this report.

Local Sales through the e-commerce Channel: Around 95% of domestic fan manufacturers do not utilize e-commerce channels for promoting their sales. Pakistan has already been included among Amazon's approved sellers, additionally local e-commerce channels such as Daraz could provide greater outreach.

In the post-COVID-19 era, the new normal involves a long-term shift to e-commerce for shoppers (Forbes, 2021). A comprehensive awareness campaign needs to be launched to introduce e-commerce opportunities to manufacturers as well as exporters. Moreover, the government should cover partial costs for product registrations on international platforms.

Annexure

Annexure

This section discusses some indicators for measuring competitiveness at the industry level. Lack of industry-level competitiveness is a critical impediment in tapping global markets. This section quantitatively assesses the competitiveness of Pakistan's domestic fan industry using indicators including change in market share, revealed comparative advantage, and Vollrath's (1991) indices for competitiveness.

Change in Market Share

Measuring changes in market shares is a natural way to assess a country's competitiveness as rising market shares reveal a strong performance of a country's producers in international markets. According to the OECD's definition of competitiveness, "competitiveness is a measure of a country's advantage or disadvantage in selling its products in international markets", mathematically;

$$M_1 = Market\ Share\ (\%) = \left\{\left(\frac{X_{ijt}}{X_{njt}}\right) - \left(\frac{X_{ij(t-1)}}{X_{nj(t-1)}}\right)\right\} \times 100$$

Where X represents exports, i is the country, j is a commodity, n is the set of countries, and t is the time period.

Revealed Comparative Advantage (RCA)

Revealed comparative advantage (RCA) is based on the Ricardian trade, theory, which posits that the pattern of trade among countries is governed by their relative differences in productivity. Although such productivity differences are difficult to observe, an RCA metric can be readily calculated using trade data to "reveal" such differences. RCA is calculated as follows:

$$M_2 = RCA = \frac{X_{ij}/X_j}{X_{iw}/X_w}$$

Where X_{ij} are the exports of product I of country j, X_j is the total exports of country j, X_{iw} are the exports of product I by the world and X_w are total exports of the world. A country has a comparative advantage is RCA is greater than 1 and a comparative disadvantage if RCA is less than 1.

Vollrath's Indices for Competitiveness

Vollrath (1991) indices are used to measure comparative advantage as well as trade competitiveness. These three indices, discussed below, use exports and imports for measuring competitiveness. According to Vollrath (1991), positive indices reveal a competitive advantage whereas negative values reveal a competitive disadvantage. These indices are defined as follows:

Relative Trade Advantage:

The first measure of Vollrath (1991) is the relative trade advantage (RTA) which accounts for exports as well as imports. It is the difference between the relative export advantage (RXA) and relative import advantage (RMA).

$$M_3 = RTA = RXA - RMA = \frac{X_{ij}/X_{it}}{X_{nj}/X_{nt}} - \frac{m_{ij}/m_{it}}{m_{nj}/m_{nt}}$$

Where X and m represent exports and imports respectively, i is the country, j is a commodity, t is a set of commodities and n is a set of countries.

Revealed Export Advantage:

Volrath's (1991) second measure is simply the logarithm of the relative export advantage.

$$M_4 = ln(RXA) = \frac{X_{ij}/X_{it}}{X_{nj}/X_{nt}}$$

Where X represents exports, i is the country, j is a commodity, t is a set of commodities and n is a set of countries.

References

References

https://innovativesolutions.net.pk/pm-loan-scheme-2025/#:~:text=Loan%20Categories%2C%20Markup%20Rates%2C%20and,for%20established%20or%20larger%20businesses.

https://www.sbp.org.pk/Incen-others/saaf.asp#:~:text=All%20SMEs%20(new%20businesses%20as,w.e.f%20September%2018%2C%202023).

https://www.sbp.org.pk/departments/ihfd/Sub-Segment%20Booklets/Fan%20Industry%20Report.pdf

https://8171ip.com.pk/maryam-nawaz-loan-scheme-2025-get-rs-10-lakh-interest-free-for-your-business/#:~:text=Maryam%20Nawaz%20Loan%20Scheme%202025,%2C%20business%2C%20and%20CNIC%20details.

https://tipp.gov.pk/index.php?r=tradeInfo/view&id=20401

https://indianfanassociation.com/category/indian-fan-industry/

https://www.imarcgroup.com/india-electric-fan-market

https://www.frost.com/wp-content/uploads/2018/09/Dynamics-of-the-Indian-Fan-Market_EDT.pdf

https://www.clasp.ngo/wp-content/uploads/2023/06/Pedestal-Fans.pdf

https://www.afaqs.com/news/industry-news/indias-2-bn-fan-market-heats-up-with-smart-tech-and-premium-appeal-9380734

https://www.made-in-china.com/manufacturers/fan.html

https://www.statista.com/statistics/408908/china-household-electric-fan-production/?srsltid=AfmBOorcUHyLzwQ-pvBQJ5r-6mH2gLkhAgYuC3NTsLBcfaaZT48WX5_k

https://www.scribd.com/doc/45719233/Fan-Industry-of-Pakistan

https://documents1.worldbank.org/curated/en/099430009212232908/pdf/P169313077ec6d0c70b00b00a79012cc593.pdf

https://www.nation.com.pk/11-Nov-2024/pakistani-electric-fan-manufacturer-taps-into-global-opportunities-at-7th-ciie

https://tribune.com.pk/story/2511108/challenges-abound-for-fan-manufacturers

https://www.dawn.com/news/1693311

https://theelectricityhub.com/pakistan-eyes-export-boost-with-energy-efficient-fans/

https://www.commerce.gov.pk/about-us/trade-agreements/

https://www.commerce.gov.pk/wp-content/uploads/pdf/Indonesia_Pakistan_PTA.pdf

https://ict.net.pk/pakistan-budget-2025-26-tax-changes-guide/#:~:text=The%20new%20income%20tax%20slabs,PKR%202%2C400%2C000:%2010%25%20tax%20rate

https://taxsummaries.pwc.com/

https://fbr.gov.pk/categ/customs-tariff/51149/70853/131188

https://download1.fbr.gov.pk/Docs/20241021010287106PakistanCustomsTariff-2024-25.pdf

https://download1.fbr.gov.pk/Docs/20258111683941732Tariff-2025-26.pdf

https://download1.fbr.gov.pk/Docs/202585238495687Fifth-Schedule.pdf

The Pakistan Business Council

FOSTERING ECONOMIC GROWTH

(A Company set up under Section 42 of the Companies Ordinance 1984)

**8th Floor, Dawood Centre, M.T. Khan Road,
Karachi, Pakistan**

+92 21 3563 0528-29

+92 21 3563 0530

**2nd Floor, 1-E (South) Jinnah Avenue,
Blue Area, Islamabad, Pakistan**

+92 51 8444 008

+92 51 8444 009

www.pbc.org.pk