Enhancing High-Quality Automobile and EV Industry in Pakistan

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Abstract:

This research examines the evolution of Pakistan's automotive industry through various government initiatives and policies designed to foster growth, innovation, and sustainability. Key programs such as the Deletion Program, Tariff-Based System (TBS), Auto Industry Development Program (AIDP), Automotive Development Policy (ADP), National Electric Vehicle Policy (NEVP), and Auto Industry Development & Export Policy (AIDEP) have significantly impacted the sector. These initiatives have promoted local manufacturing, reduced reliance on imports, and enhanced export potential. Special attention is given to the NEVP's role in advancing sustainable transportation and mitigating climate change. The paper also highlights challenges and offers policy recommendations, including infrastructure development, incentivizing localization, fostering human capital, and promoting electric vehicles. Through a mix of short, medium, and long-term strategies, the study underscores the importance of aligning industrial growth with environmental sustainability and global competitiveness.

Key words:

Automotive policies, electric vehicles, localization, sustainable transportation, export competitiveness

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Introduction

The government of Pakistan issued various automobile production programs and policies in order to develop and protect the automobile industry in Pakistan. The Deletion Program, also known as the Compulsory Localization Policy, was initiated in 1987 and continued until 2004. This program aimed to promote local manufacturing and reduce reliance on imported automotive components. The policy mandated local assembly plants to gradually increase the use of locally sourced parts and components, with the ultimate goal of achieving full localization. This program played a crucial role in developing the automotive industry in Pakistan, fostering growth and investment in the sector. The Tariff-Based System (TBS) was introduced in 2006 to rationalize and streamline the tariff structure for the automotive industry. This program aimed to reduce the cost of production for local manufacturers by lowering tariffs on imported raw materials and components. The TBS also sought to encourage exports by providing incentives for manufacturers who exported a significant portion of their production. This policy helped to create a more competitive environment in the automotive sector, promoting efficiency and productivity (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021).

The Auto Industry Development Program (AIDP) was launched in 2007 and ran until 2012. This program aimed to promote the growth and development of the automotive industry in Pakistan, with a focus on increasing exports and reducing imports. The AIDP provided incentives for manufacturers to invest in new technologies, upgrade their production facilities, and enhance their product quality. The program also sought to develop the local supply chain, encouraging the establishment of new auto parts manufacturing facilities. The AIDP played a significant role in modernizing the automotive industry in Pakistan, enhancing its competitiveness and export potential. The Automotive Development Policy (ADP) was introduced in 2016 and remained in effect until 2021. This policy aimed to create a conducive environment for the growth and development of the automotive industry in Pakistan. The ADP focused on promoting investment, innovation, and exports, while also encouraging the adoption of new technologies and environmentally friendly practices. The policy provided incentives for manufacturers to establish new production facilities, upgrade existing ones, and develop new products. The ADP also sought to enhance the competitiveness of the local supply chain, promoting the development of auto parts manufacturing in Pakistan (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021).

The National Electric Vehicle Policy (NEVP) was launched in 2019 to promote the adoption of electric vehicles in Pakistan. This policy aimed to reduce greenhouse gas emissions, improve air quality, and develop the local electric vehicle industry.

The NEVP provided incentives for manufacturers to produce electric vehicles, including tax exemptions, reduced tariffs on imported components, and subsidies for research and development. The policy also sought to develop the necessary infrastructure for electric vehicles, including charging stations and battery-swapping facilities (Ministry of Climate Change Islamabad, Government of Pakistan, 2019). The Auto Industry Development & Export Policy (AIDEP) was introduced in 2021 and will remain in effect until 2026. This policy aims to promote the growth and development of the automotive industry in Pakistan, with a focus on increasing exports and reducing imports. The AIDEP provides incentives for manufacturers to invest in new technologies, upgrade their production facilities, and enhance their product quality. The policy also seeks to develop the local supply chain, encouraging the establishment of new auto parts manufacturing facilities. The AIDEP aims to create a competitive and sustainable automotive industry in Pakistan, capable of competing in global markets.

Problem Statement

The Government of Pakistan has enacted a series of policies aimed at regulating the automobile industry, including the electric vehicle sector, fostering market competition, enhancing the export of vehicles and auto parts, and advancing the green economy. Despite some progress, the industry continues to encounter multifaceted challenges that impede its growth and quality enhancement. Therefore, this task force aims to identify these challenges and devise strategic interventions to foster the development of a high-quality automobile and electric vehicle industry in Pakistan.

Scope

The study seeks to conduct a comprehensive evaluation and analysis of the extant policy framework governing the automobile industry, with the objective of assessing its impact on industrial growth and quality enhancement. Through a rigorous examination, this study aims to identify and ascertain the specific challenges and obstacles hindering the development and expansion of the industry, and evaluate the industry's infrastructural and developmental capabilities. Furthermore, this inquiry seeks to assess the efficacy of existing green economy initiatives and their impact on the industry's competitiveness, culminating in the formulation of policy recommendations for policymakers to address the identified challenges and optimize the growth and development of the automobile industry, thereby contributing to the existing body of knowledge in this field.

Research methodology

This research employed a mixed-methods approach, incorporating both qualitative and quantitative data collection and analysis methods. Secondary data was collected from reputable internet sources, providing a comprehensive foundation for the study. Subsequently, a range of analytical techniques was applied to the data,

including situational analysis, legal and institutional framework analysis, SWOT analysis, GAP analysis, and stakeholder analysis. These analytical techniques, applied in conjunction with the mixed-methods approach, enabled a rich and multifaceted understanding of the automobile industry in Pakistan, providing a robust foundation for policy recommendations and future research.

Literature Review

The historical trajectory of the automotive sector in Pakistan can be delineated into distinct phases: the Deletion Program or Compulsory Localization Policy (1987–2004), characterized by stringent localization measures; the Tariff Based System (TBS) (2006), which introduced a tariff-centric approach; the Auto Industry Development Program (2007–2012), aimed at fostering industry growth; and the Automotive Development Policy (ADP) (2016–2021), a comprehensive framework designed to promote sustainable development and industrial expansion. Each phase uniquely contributed to the sector's evolution, shaping its present-day landscape (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021). The National Electric Vehicle Policy (NEVP) 2019 prioritizes the promotion of Electric Vehicles (EVs) to mitigate greenhouse gas (GHG) emissions, setting targets for EV adoption and the development of associated infrastructure. The policy estimates significant benefits for the country, including fuel savings, a reduced fuel import bill, and the utilization of idle capacity in the national electricity grid, enhancing energy efficiency and reducing reliance on fossil fuels (Ministry of Climate Change Islamabad, Government of Pakistan, 2019).

The Automotive Industry Development and Export Policy (AIDEP) 2021–2026 supports the EV industry's growth through measures such as new tariff lines, a new product policy, and safety regulations. The policy provides incentives for EVs, promotes local parts manufacturing, and targets the export of vehicles and parts equivalent to 10% of the Cost and Freight (C&F) value of imports, fostering a robust EV ecosystem in Pakistan (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021).

Vehicular emissions, industrial activities, and agricultural practices, such as crop burning, have been identified as primary sources of air pollution in

Pakistan. Amidst the global surge in EV adoption driven by environmental concerns and technological advancements, Pakistan's transition to EVs remains sluggish. The development and effective implementation of a comprehensive EV policy are crucial for Pakistan, given its economic constraints. While the current policy landscape is a commendable initiative, significant enhancements are needed to promote local EV manufacturing, manage foreign EV imports, and facilitate technology transfer and skill development. These measures are essential for fostering a skilled workforce and positioning Pakistan as a regional EV technology hub (Khan, 2023).

Analysis

A situational analysis of the current policies, initiatives, practices, and output of the automobile and Electric Vehicle (EV) industry in Pakistan reveals a complex landscape shaped by various factors. The Automobile Development Policy (ADP) 2016–2021, aimed at promoting the growth and development of the industry, has had a significant impact on the sector. The ADP's initiatives, such as tax incentives and investment facilitation, have contributed to increased production capacity and export volumes. The newly introduced Auto Industry Development and Export Policy (AIDEP) 2021–2026 builds upon the foundations laid by the ADP, focusing on export-oriented growth and technological upgradation. The AIDEP's emphasis on research and development, innovation, and human capital development is expected to enhance the industry's competitiveness and export potential.

The National Electric Vehicle Policy (NEVP) 2019, a landmark initiative aimed at promoting EV adoption, has created a supportive environment for the EV sector's growth. The NEVP's incentives, such as tax exemptions and subsidies, have encouraged investment in EV manufacturing and charging infrastructure development. However, the industry's growth is also influenced by other factors, including the import of auto parts and used vehicles. The import of auto parts has contributed to the development of the local supply chain, while the import of used vehicles has catered to the demand for affordable transportation. Nevertheless, these imports pose challenges, such as the need for quality control and their impact on local manufacturing.

The export of vehicles, a key indicator of the industry's competitiveness, has shown promising growth in recent years. Pakistani automakers have expanded their export markets, leveraging free trade agreements and strategic partnerships. However, the industry still faces challenges, such as meeting international quality standards and competing with established global players.

Analysis of Automobile Development Policy 2016–2021

The Automobile Development Policy (ADP) 2016–2021, a comprehensive framework aimed at fostering the growth and development of the automobile industry in Pakistan, has had a profound impact on the sector. A key feature of the ADP was the granting of Greenfield status to manufacturing companies, enabling them to establish new production facilities and expand their existing capacities. This initiative led to a significant influx of investment, totaling over USD 1.0 billion, demonstrating investors' confidence in the industry's potential. The ADP also paved the way for new entrants into the market, increasing competition and driving innovation.

Furthermore, Pakistan's accession to the United Nations Economic Commission for Europe's (UNECE) World Forum for Harmonization of Vehicle Regulations (WP.29) facilitated the adoption of international standards, enhancing the industry's competitiveness and export potential. The introduction of competition, facilitated by the ADP, has led to improved product quality, reduced prices, and increased consumer choice.

The ADP also served as a foundation for the Auto Industry Development and Export Policy (AIDEP) 2021–2026, which builds upon the successes achieved under the ADP. Provisions such as duty-free import of plant and machinery and concessional customs duty rates have reduced production costs and increased the industry's attractiveness to investors. These incentives have enabled manufacturers to upgrade their technology, improve efficiency, and enhance product quality, ultimately contributing to the industry's growth and development.

The ADP 2016–2021 has played a crucial role in transforming Pakistan's automobile industry, attracting investment, promoting competition, and enhancing competitiveness.

The production trends of Pakistan's automobile industry from 2015 to 2021 reflect fluctuating performance. The production value increased dramatically to 3,978 billion rupees, then declined to 2,114 billion rupees in 2019–2020 due to the COVID-19 pandemic. It subsequently rebounded significantly to 3,417 billion rupees in 2020–2021. A detailed account of these production trends is provided below for reference.

Production Trend of Automobile Sector of Pakistan 2016-21 (In Rs. Billions)						
Products	**2015-16**	**2016-17**	**2017-18**	**2018-19**	**2019-20**	**2020-21**
Cars	180	187	218.5	211	98	161.
Jeeps/ SUV	0.78	3.5	13	7.5	6.	28.7
Pick Up/ LCV/ Van	38.5	27.5	32.5	25	16	25.
Total	219	218	264	244	120.8	215
Trucks	7	10	9	6	3.3	6.2
Buses	1.4	1.4	1	1.14	0.6	0.66
Total	8	11.4	10	7	3.9	6.86
Tractors	34	48	72	50	22.3	50
Motorcycles	2.12	2246	3245	2789	1783	2815
Auto Rickshaw & 3 Wheelers	58	84	110	118	58	101
Grand Total	**2677**	**2837**	**3978**	**3463**	**2114**	**3414**

Source: (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021)

Analysis of Automobile Development and Export Policy (AIDEP) 2021–26)

The Auto Industry Development and Export Policy (AIDEP) 2021–26 is a forward-looking framework designed to propel the growth and development of Pakistan's automobile industry. The AIDEP aims to promote the adoption of new technologies, particularly Electric Vehicles (EVs), through targeted incentives and support measures. This initiative is expected to drive innovation, reduce carbon emissions, and enhance the industry's competitiveness.

The AIDEP has introduced new tariff lines, rationalizing the tax structure and lowering production costs for manufacturers. This step is anticipated to boost investment, improve efficiency, and promote economies of scale. Furthermore, the policy includes a new product strategy encouraging the development of innovative products and enabling manufacturers to diversify their offerings.

A key priority of the AIDEP is the implementation of safety regulations, aligning Pakistan’s standards with international best practices to ensure the production of safer vehicles. This measure is essential for enhancing consumer safety, reducing accidents, and facilitating the export of vehicles to global markets.

Another major focus of the AIDEP is promoting local part manufacturing to develop a robust and self-sufficient supply chain. This initiative is expected to reduce reliance on imports, increase local content, and create employment opportunities in the manufacturing sector.

The AIDEP also sets an ambitious target of exporting vehicles and parts equivalent to 10% of the Cost and Freight (C&F) value of imports, marking a significant shift towards export-oriented growth. This goal is anticipated to enhance the industry's competitiveness, boost foreign exchange earnings, and contribute to Pakistan's economic development.

Tax Incentives under AIDEP 2021–26

The AIDEP 2021–26 provides a range of tax incentives to support the development of Pakistan's automobile industry. Particular emphasis has been placed on promoting EVs, hybrids, 2-3 wheelers, and the agricultural sector (tractors). A detailed account of the tax exemptions in these sectors is summarized in the table below for reference.

S. No.	Auto Policy	Tax Exemptions Granted
1.	AIDEP 2021-26	Customs Duty (CD) on localized parts at 15% for Agricultural Tractors
2.		Customs Duty (CD) on localized parts at 30% for motorcycles exceeding 125 cc, motorcycle rickshaws and auto-rickshaws exceeding 200cc
3.		1% Customs Duty on parts specific to Electric Vehicles
4.		1% Sales Tax on sale of locally manufactured EVs
5.		Zero taxes and duties for capital machinery imports and charging infrastructure
6.		1% Customs Duty on electric buses and trucks
7.		3% Custom Duty on parts specific to plug-in hybrids
8.		4% Custom Duty on parts specific to normal hybrids

Table: Tax incentives under AIDEP 2021-26

Source: (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021)

Working Party (WP)- 29

WP.29 is the Working Party of the United Nations Economic Commission for Europe (UNECE) and serves as a UN forum for the harmonization of vehicle regulations. Established in 1952 as the "Working Party of Experts on Technical Requirements of Vehicles," it was renamed in 2000 to its current title.

Pakistan is among the countries that have acceded to WP.29's 1958 Agreement, which addresses the technical prescriptions for the construction and approval of wheeled vehicles, as well as their periodic technical inspections. WP.29 is responsible for managing the multilateral agreements signed in 1958, 1997, and 1998, which govern technical prescriptions and standards for vehicle construction and inspections. Additionally, WP.29 develops and amends UN Regulations, UN Global Technical Regulations, and UN Rules.

By acceding to the 1958 Agreement, Pakistan has committed to adopting the technical prescriptions and protocols for the type approval of vehicles and components. This obligates Pakistan to recognize type approvals granted by other contracting parties to the agreement.

The 1958 Agreement operates on principles of type approval and reciprocal recognition. Any country that accedes to the agreement has the authority to test and approve a manufacturer's design of a regulated product, regardless of the country of production. Once a type approval is granted by one country, all other acceding countries are required to honor it.

In 2020, the Government of Pakistan acceded to 17 out of the 170 regulations established under the 1958 Agreement. A detailed list of the regulations to which Pakistan has acceded is provided below for better understanding.

Description	UN Regulations (UNRs)	Vehicle Category
Brakes	R 13 &R 13H	Passenger Cars and Vans + Commercial Vehicles and Buses
Steering	R 79	Passenger Cars and Vans + Commercial Vehicles and Buses
Tyres	R 30	Passenger Cars and Vans
Lighting	R 48	Passenger Cars and Vans + Commercial Vehicles and Buses
Safety Belts Anchorage & Belts	R 14 & R 16	Passenger Cars and Vans + Commercial Vehicles and Buses
Seats/ Head Restrain	R 17 & R25	Passenger Cars and Vans
Collision	R 94, R 95, & R 135	Passenger Cars and Vans
Airbags	R 121, R 114	Passenger Cars and Vans
Safety Glazing	R 43	Passenger Cars and Vans
Mirror & Cameras	R 46	Passenger Cars and Vans + Commercial Vehicles and Buses
Anti-theft	R 18	Passenger Cars and Vans + Commercial Vehicles and Buses

Table: The regulations for safety measures
Source: (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021)

The obligatory export

The obligatory export targets are designed to promote export-oriented growth, increase foreign exchange earnings and enhance the industry's competitiveness. By setting these targets, the government aims to encourage manufacturers to focus on export markets, improve product quality and reduce their reliance on domestic sales. The targets will also help to promote

the development of local supply chains, increase employment opportunities and contribute to the country's economic growth. It is to identify here that the obligatory exports targets are the ambitious and the government of Japan raised concerns that the target is illogical and it will discourage the automobile trade between Pakistan and Japan. For that reasons, the Japan' s government approached the WTO to settle the issue on international forum. For information, the government of Pakistan has defined the following obligatory export targets under the AIDEP 2021-26.

Financial Year	Mandatory export as % of C&F value
2021-22	0 %
2022-23	2 %
2023-24	4 %
2024-25	7 %
2025-26	10 %

Table: The obligatory export under AIDEP 2021-26
Source: (Engineering Development Board, Ministry of Industries and Production, Government of Pakistan, 2021)

Promotion of EVs and New Technologies

The Automotive Industry Development and Export Policy (AIDEP) 2021-26 prioritizes the promotion of Electric Vehicles (EVs) and new technologies as a strategic imperative for Pakistan's automotive industry. This focus aims to address pressing environmental and economic challenges while creating opportunities for industrial growth and employment generation.

Pakistan's vulnerability to climate change, combined with the transport sector's significant contribution to greenhouse gas emissions, necessitates the adoption of EVs and fuel-efficient green technologies. These initiatives aim to reduce emissions and mitigate the adverse impacts of climate change. By encouraging the adoption of innovative technologies and manufacturing practices, the policy seeks to drive industrial growth and enhance the competitiveness of Pakistan's automotive sector.

Investments in EVs and green technologies are expected to create employment opportunities, fostering economic development and social prosperity. Additionally, Pakistan's reliance on oil imports places a heavy burden on the current account deficit. Promoting fuel-efficient technologies and EVs aims to reduce the oil import bill, alleviating economic pressures. The policy also emphasizes enhancing energy security by adopting alternative energy sources and sustainable solutions to reduce dependence on fossil fuels.

Incentives for Hybrids

The AIDEP 2021-26 includes the following incentives for hybrid vehicles:

- Parts specific to plug-in hybrids: Concessionary Customs Duty (CD) rate of 3%.
- Parts specific to normal hybrids: Concessionary CD rate of 4%.
- Hybrid buses/trucks: Concessionary CD rate of 1%.
- Sales tax: Reduced rate of 8.5% for both locally manufactured and imported hybrids.

These incentives aim to promote the adoption of hybrid vehicles in Pakistan, supporting the transition toward environmentally friendly and fuel-efficient transportation solutions. By reducing customs duties and sales tax rates, the government seeks to encourage domestic production and importation of hybrid vehicles, contributing to a more sustainable and competitive automotive industry.

Concerns of Japan's Government

The Government of Pakistan announced the **Automobile Production Policy 2021-26** to facilitate the auto industry and foster competition among companies. The policy set a target to maximize vehicle production domestically and export **10**% of total production by 2026.

However, the Government of Japan raised concerns about the export component of the policy and threatened to approach the **World Trade Organization (WTO)** to address the issue. Pakistan plans to resolve the matter in accordance with international procedures and protocols. If bilateral efforts fail, the issue will be referred to the WTO Committees on **Market Access** and **Trade-Related Investment Measures (TRIMS)**. Should these efforts remain unresolved, the matter will escalate to the WTO's **Dispute Settlement Body (DSB)**, although this process could take approximately one year.

Major Players in the Automobile Industry

Pakistan's automotive industry is dominated by prominent players, including:

- Indus Motor Company
- Pak Suzuki Motor Co. Ltd.
- Honda Atlas Cars Ltd.

New entrants like **Tesla Industries (Pvt.) Ltd.** and **Hyundai Nishat Motor (Pvt.) Ltd.** are also making their mark with innovative products. Companies such as **Al-Haj FAW Motors (Pvt.) Ltd.** and **Kia Lucky Motors Pakistan Ltd.**

are further expanding their presence by offering diverse vehicle options to cater to varying consumer preferences. A detailed list of major automobile companies operating in Pakistan is provided below.

S. No.	Car Manufacturers	S. No.	Car Manufacturers
1.	Tesla Industries (Pvt.) Ltd	8.	Al-Haj FAW Motors (Pvt.) Ltd.
2.	Indus Motor Company Ltd.	9.	Al-Haj Automotive (Pvt.) Ltd.
3.	Pak Suzuki Motor Co. Ltd.	10.	Mg JW Automobile Pakistan (Pvt.) Ltd.
4.	M/S Sazgar Engineering Works Ltd.	11.	United Motors (Pvt.) Ltd.
5.	Ghandhara Nissan Ltd.	12.	Regal Automobile Industry Ltd.
6.	Honda Atlas Cars Ltd.	13.	Kia Lucky Motors Pakistan Ltd.
7.	JW Sez (Pvt.) Ltd.	14.	Hyundai Nishat Motor (Pvt.) Ltd.

Table: The major Car Manufacturers
Source: Pakistan Revenue Automation Limited (PRAL)

Import Bill of Pakistan

The **State Bank of Pakistan** reported a 5.76% year-on-year increase in Pakistan's petroleum import bill for November 2023, reaching **$1.32 billion**. While the monthly petroleum import bill remained stable, the overall import bill rose by 2.86% year-on-year and 1.82% month-on-month. Petroleum products' share in the total import bill stood at **29.76%** in November 2023. However, the import bill for petroleum products declined by 35% in the first five months of the fiscal year.

The transport sector saw a **12% year-on-year decline** in imports, while agricultural and other chemicals experienced a **10.67% year-on-year increase**. Food imports surged by **14% year-on-year**, but showed a significant decrease of **19.5%** over the first five months of the fiscal year. The machinery import sector recorded a substantial **43% year-on-year increase**, signaling potential growth in industrial activities (**SAMAA Web Desk, 2023**).

Analysis of National Electric Vehicle Policy 2019

The **National Electric Vehicle Policy (NEVP) 2019** is a strategic initiative aimed at promoting the adoption of Electric Vehicles (EVs) in Pakistan, focusing on reducing Greenhouse Gas (GHG) emissions, achieving sustainable development, and leveraging economic benefits. Pakistan is highly vulnerable to climate change, and the transport sector is a significant contributor to GHG emissions. The promotion of EVs aims to mitigate this issue.

Pakistan faces energy shortages and relies heavily on imported fuels, which puts pressure on the country's foreign exchange reserves. EVs offer an opportunity to reduce fuel imports and utilize the existing idle capacity in the national electricity grid. The **NEVP** estimates significant fuel savings and a reduced fuel import bill, resulting in substantial economic benefits for the country.

The policy sets target for introducing and sustaining EVs and infrastructure, including charging stations and manufacturing facilities, to support the growth of the EV industry. The policy presents a conservative estimate of benefits, indicating a potential for even greater advantages with increased EV penetration. The existing idle capacity in the national electricity grid can be utilized to support EV charging, optimizing energy resources and reducing waste. By addressing these situational factors, the **NEVP 2019** aims to create a supportive ecosystem for EV adoption, driving sustainable development, energy security, and economic growth in Pakistan.

The Export of Pakistan

The export data of Pakistan from **2020-21 to 2023-24** has been analyzed during this study. The export of automobiles and EVs reflects a concerning situation. Pakistan is far behind in the race for exports in the modern world. The export of EVs from Pakistan is **zero**, which is very alarming. A detailed account of Pakistan's exports during the specified period is provided below.

Vehicles Types	2020-21		2021-22		2022-23		2023-24	
	Quantity in Units	Export Value	Quantity in Units	Export Value	Quantity in Units	Export Value	Quantity in Units	Export Value
Motorcycle	11470	767.95	10187	837.93	30632	3710.33	45404	5840.23
Rickshaw	416	59.08	25	5.08	510	71.62	144	61.33
Tractors	1443	1498.27	4890	1744.22	7196	3703.61	11781	4002.66
Cars & Jeeps	0	0.00	0	0.00	0	0.00	0	0.00
Electric Vehicles	0	0.00	0	0.00	0	0.00	0	0.00
Buses & Trucks	0	0.00	1	7.89	2	22.74	7	76.96
Total:	13329	2325.30	15103	2595.12	38340	7508.30	57336	9981.19

Table: Export of Pakistan 2020-21 to 2023-24
Source: Pakistan Revenue Automation Limited (PRAL)

Legal and Institutional Framework Analysis

Legal Framework Analysis

The legal framework for regulating and managing the automobile sector in the country has been analyzed during the study. The major policies and Orders which have been issued for the purpose of development and sustenance of the automobile industry are as following:

- The Automobile Industry Development and Export Policy 2021-26
- The National Electronic Vehicle Policy 2019
- SRO 655/2006 dated 22.06.2006
- SRO 656/2006 dated 22.06.2006
- SRO 693/2006 dated 01.07.2006

S. No	Policies/Orders	Mandate	Issued by
1.	AIDEP- 2021-26	Automobile Industry Development and Export Policy, 2021-26	Ministry of Industries and Production (MoIP)
			Engineering Development Board
2.	NEVP- 2019	National Electric Vehicle Policy, 2019	Ministry of Climate Change
3.	SRO 655/2006 dated 22.06.2006	Allows vendors/ part manufacturers concessionary import of inputs	Federal Board of Revenue (FBR)
4.	SRO 656/2006 dated 22.06.2006	Authorizes assemblers/ OEMs import of CKD at concessionary Duty	
5.	SRO 693/2006 dated 01.07.2006	List of localized auto-parts on import of which assemblers have to pay additional duty	

Institutional Framework Analysis

S. #	Institutions	Role
1.	Ministry of Industries and Production	formulates policies to promote the growth and development of the automobile industry
2.	Engineering Development Board	Supports industrial development, including automotive manufacturing
3.	Ministry of Climate Change	Oversees environmental policies, including emission standards and green initiatives.
4.	Federal Board of Revenue	Responsible for taxation policies affecting the industry
5.	Ministry of Commerce	Involved in trade policy, export promotion, and regulation of imports
6.	Ministry of Planning Development and Reform	formulates long-term plans and policies for the automobile industry's growth and development
7.	Ministry of Energy (Power & Petroleum) Division	ensures the impact assessment of EVs on oil value chain, and plan future oil import and storage
8.	Ministry of Communication	Involve in infrastructure development and transportation policies
9.	Ministry of Foreign Affairs (MOFA)	Negotiates international trade agreements and treaties affecting the automobile industry and to promote export markets and foreign investment
10.	National Transmission and Dispatch Company	Specifying standards for smart metering of the charging infrastructure

Comparative Analysis of Pakistan's Automobile Sector Initiatives and Practices with Best Practices Around the World

China

The Chinese government initiated the development of Electric Vehicle (EV) technology in 2001, designating it as a priority science research project in the country's Five-Year Plan. This strategic decision marked the beginning of China's pursuit of a robust EV industry. In 2008, Wan Gang, China's Minister of Science and Technology, tested Tesla's inaugural EV model, the Roadster, signifying the government's interest in the technology. The government's support for the EV industry led to the sale of 500 EVs in China in 2009, a modest beginning that paved the way for future growth. Between 2009 and 2022, the government provided substantial subsidies totaling $29 billion to support the EV industry, demonstrating its commitment to the sector's development. Notably, these subsidies were not limited to domestic industrialists; they also extended support to foreign entities, such as Tesla. This support enabled Tesla to establish production facilities in China, including its Shanghai Giga factory, which was constructed rapidly in 2019. China's strategic support for Tesla has yielded significant benefits, exemplifying the "catfish effect." Building on this success, China is now internationalizing its EV industry, with a focus on the Gulf Cooperation Council region. The government is pursuing innovative strategies such as Vehicle-to-Grid (V2G) integration, rapid product development, vertical integration, and supply chain control, particularly in battery production. This multifaceted approach aims to solidify China's position as a global leader in the EV industry, leveraging its technological prowess and economic influence to drive growth and innovation.

India

The Automotive Mission Plan 2016-26 (AMP 2026) underscores the significant contribution of the Indian automobile industry to the country's economy, accounting for approximately 7.1% of India's Gross Domestic Product (GDP). As the fourth-largest producer of vehicles globally, the industry achieved an impressive annual production of 25 million vehicles in 2016-17, solidifying its position as the largest manufacturer of two-wheelers, three-wheelers, and tractors worldwide. The Indian automobile policy fosters a conducive environment for Foreign Direct Investment (FDI) in the automobile sector, allowing foreign equity investment up to 100% without any minimum investment criteria. This liberal policy framework facilitates automatic approval for investments, providing a significant impetus to the industry's growth. By encouraging FDI, the government aims to enhance the industry's

competitiveness, technological capabilities, and global integration. The AMP 2026 vision is aligned with the government's initiatives to promote sustainable growth, innovation, and exports in the automobile industry. By leveraging India's large domestic market, skilled workforce, and competitive manufacturing costs, the industry is poised for significant expansion and development. The policy framework and investment incentives aim to drive the industry's transformation, enabling it to become a global leader in the automotive sector while contributing substantially to India's economic growth and development.

SWOT Analysis of Pakistan's Institutions Responsible for the Growth of the Automobile & EV Industry

SWOT analysis of the institutions (Ministries of Industries and Production Islamabad and Engineering Development Board (EDB) Islamabad), mainly responsible for the growth and development of the automobile and electric vehicle industries, has been conducted. The SWOT analysis of the aforementioned institutions is as follows.

SWOT Analysis of Ministry of Industries and Production

Strength

The Ministry of Industries and Production of Pakistan plays a crucial role as a facilitator in creating an enabling environment conducive to industrial growth in the automobile sector. Through its advisory capacity, the ministry contributes to policy formulations that foster a supportive framework for the industry's development. By identifying the specific needs of the auto industry, the ministry ensures that policies address key challenges and opportunities, thereby enhancing the sector's competitiveness. The ministry is responsible for the enforcement of policies related to the automobile industry, including the Automotive Industry Development and Export Policy (AIDEP) 2021-26 and the National Electric Vehicle Policy (NEVP) 2019. Additionally, it oversees the issuance and restriction of quotas, ensuring that the industry operates within a structured and regulated environment. Through periodic reviews of existing policies, the ministry assesses their effectiveness and implements necessary revisions to align with the industry's evolving needs. The ministry also prioritizes skill development within the industry, recognizing the importance of human capital in driving growth and innovation. By promoting training and capacity-building initiatives, the ministry enables the industry to acquire the necessary skills and expertise to remain competitive in the global market. Through these efforts, the Federal Ministry of Industries and Production plays a vital role in shaping the trajectory of Pakistan's automobile industry.

Weaknesses

The policy formulation process in the Ministry of Industries and Production of Pakistan has been criticized for lacking a comprehensive baseline study, which would have provided a thorough understanding of the automobile industry's dynamics and needs. This omission has resulted in policies that may not effectively address the industry's challenges and opportunities. The ministry has also been accused of failing to proactively intervene in the auto industry, neglecting to provide the necessary support and guidance to foster growth and development. Furthermore, the industry's research and development (R&D) capabilities have been deemed weak, hindering innovation and technological advancements. Additionally, the ministry has been criticized for its lack of coordination with other relevant ministries, resulting in a fragmented approach to policy-making and implementation. This has led to policy inconsistencies and a lack of coherence in the government's approach to the automobile industry. These shortcomings have impeded the industry's potential for growth and development, despite the introduction of policies such as the Automotive Industry Development and Export Policy (AIDEP) 2021-26 and the National Electric Vehicle Policy (NEVP) 2019.

Opportunities

The Ministry of Industries and Production of Pakistan has emphasized the importance of localization in the automobile industry, recognizing the need to promote self-reliance and reduce dependence on foreign technology. To achieve this, the ministry has stressed the need for technology upgradation, aiming to enhance the industry's competitiveness and innovation capabilities. The ministry has also prioritized the development of human capital, seeking to produce highly skilled engineers who can drive the industry's growth and development. Furthermore, the establishment of joint ventures and coordination with international partners is encouraged, facilitating the transfer of knowledge and technology. The development of automotive clusters is another key strategy, aiming to create specialized hubs for the industry's growth and development. Skill development and training programs are also being implemented, ensuring that the workforce is equipped with the necessary expertise to support the industry's expansion. Finally, the ministry has recognized the importance of developing automobile infrastructure, including the establishment of modern manufacturing facilities, testing centers, and research institutions. These initiatives are aligned with the goals of the Automotive Industry Development and Export Policy (AIDEP) 2021-26 and the National Electric Vehicle Policy (NEVP) 2019, among other policies.

Threats

The automobile industry in Pakistan operates in a highly competitive global market, with regional players also vying for market share. However, the industry's capacity in Pakistan is limited, hindering its ability to compete effectively. Furthermore, the industry's product offerings are characterized by limited diversification, resulting in a lack of innovation and technological advancements. The industry is also constrained by stringent emission regulations, which necessitate significant investments in research and development to comply. Moreover, the industry's heavy reliance on the import of auto-parts poses significant challenges, including exposure to exchange rate fluctuations and supply chain disruptions. Notably, Pakistan has yet to export a single electric vehicle (EV), despite the National Electric Vehicle Policy (NEVP) 2019 aiming to promote the adoption of EVs. These challenges underscore the need for effective policy interventions, such as those outlined in the Automotive Industry Development and Export Policy (AIDEP) 2021-26, to address the industry's limitations and enhance its competitiveness. The Ministry of Industries and Production of Pakistan must prioritize strategies to enhance capacity, diversification, and innovation, while also promoting export-led growth and reducing reliance on imports. By doing so, the industry can become a significant contributor to Pakistan's economic development and global competitiveness.

SWOT Analysis of the Engineering Development Board (EDB)

Strengths of the Engineering Development Board

1. The EDB plays a crucial role in formulating and coordinating government policies related to the engineering sector, including the automobile industry. It works closely with the government to develop policies that promote the industry's growth and development. These policies aim to create a conducive environment for the industry to thrive, ensuring alignment with the overall government vision and promoting innovation, investment, and exports.
2. The EDB actively engages with the industry to understand its needs and concerns. It collaborates with industry stakeholders to develop policies and programs addressing their needs, providing a platform for discussions and support in training and development. This engagement fosters a culture of innovation and collaboration.
3. The EDB ensures coherence and consistency in policies related to the automobile industry. It collaborates with other government agencies to align policies, avoiding contradictions and adhering to international best practices. This effort creates a predictable and stable policy environment that encourages investment and growth.
4. The EDB supports research and development (R&D) initiatives in the automobile industry by providing funding and collaborating with

academia and research institutions to develop innovative solutions. This support enhances innovation and competitiveness.
5. The EDB promotes exports in the automobile industry by identifying opportunities, supporting the development of export-oriented products, and facilitating participation in international trade fairs and exhibitions, thus boosting global competitiveness.
6. The EDB offers technical training programs to industry stakeholders, enhancing skills in areas such as product design, manufacturing, quality control, supply chain management, and lean manufacturing. These programs encourage continuous learning and improvement in the industry.

Weaknesses of the Engineering Development Board

1. The EDB struggles with enforcing and effectively implementing policies due to limited resources, inadequate infrastructure, and insufficient manpower. Industry stakeholders are often unaware of policies and their benefits, highlighting the need for enhanced enforcement capabilities.
2. The EDB has limited innovation expertise in critical areas such as electric vehicles and autonomous vehicle technology. This gap hinders its ability to support the industry's growth, necessitating a focus on skill development in these domains.
3. The EDB's policy targets are often overly ambitious and not aligned with industry capabilities. They lack the specificity and feasibility of SMART objectives, requiring revision for better alignment with industry needs.
4. Bureaucratic delays and lengthy approval processes slow the EDB's policy implementation. The complex and time-consuming procedures undermine its effectiveness, emphasizing the need for streamlined processes.
5. The EDB suffers from limited representation of industry stakeholders in decision-making, resulting in a lack of understanding of industry needs. Enhanced representation is crucial for more informed decisions.
6. The EDB's lack of autonomy and interference from other government agencies undermine its effectiveness. Greater independence is needed to ensure policies align with industry needs.

Opportunities for the Engineering Development Board

1. The EDB can leverage its policies to create a favorable environment for investment and innovation, driving industry growth and competitiveness.
2. It can facilitate technology transfer and foreign collaborations, supporting the industry's technological advancement and enabling joint ventures between local and international companies.
3. The EDB can enhance export promotion by providing access to international markets, supporting the development of export-oriented products, and offering training programs to improve export competitiveness.

Threats to the Engineering Development Board

1. The global automobile industry is highly competitive, with Pakistan facing significant challenges from other countries, especially in Asia. This competition impacts the EDB's ability to promote the industry effectively.
2. Changes in regulatory policies and the legal framework can affect the EDB's role and decision-making processes. Adapting to these changes is critical to maintaining its effectiveness.
3. Political interference can hinder the EDB's autonomy and decision-making processes, potentially prioritizing political considerations over industry needs and slowing down its operations.

Gap Analysis of Current Policies, Initiatives, Practices, and Institutional and Legal Framework

The following gaps were identified by analyzing the current policies, initiatives, practices, and legal and institutional framework:

1. **Incentive Structure**
    - The current incentives do not sufficiently motivate localization, exports, or the adoption of new technologies, hindering industry growth and development.
    - Limited scope and scale of incentives fail to attract significant investment.
    - Insufficient support for innovation and technology adoption restricts industry growth.
    - Policies do not effectively promote exports, limiting growth potential.

2. **Infrastructure Deficiency**
    - Pakistan's automobile industry lacks modern and efficient infrastructure, including manufacturing facilities, testing centers, and training institutes.
    - Outdated infrastructure hampers industry development.
    - Limited government investment in infrastructure restricts competitiveness and global standard alignment.

3. **Logistics and Transportation**
    - Underdeveloped logistics and transportation infrastructure increase costs and reduce efficiency.
    - Poor road networks and inadequate logistics infrastructure hinder industry growth.
    - Insufficient government investment in logistics infrastructure impacts competitiveness.

4. **Weak Supply Chain**
    - The supply chain for auto parts is fragile, with local suppliers facing challenges in financing, technology, and skilled labor.
    - Policies fail to support local suppliers, limiting their growth and the industry's development.

5. **Limited Competition**
    - Dominance by a few major players limits competition, innovation, and investment.
    - Policies do not encourage market competition, restricting industry growth.

6. **Environmental Sustainability**
    - Significant environmental impact due to a lack of focus on eco-friendly vehicles and sustainable practices.
    - Policies fail to promote environmental sustainability within the industry.

7. **Unclear Export Strategies**
    - Ambitious export targets lack clear strategies for achievement.
    - Policies do not provide a roadmap for export growth, limiting industry potential.

8. **Weak Policy Enforcement**
    - Ineffective enforcement of policies and regulations leads to non-compliance.
    - Institutional capacity for enforcement is inadequate, impacting industry growth.

9. **Electric Vehicle (EV) Adoption**
    - Unclear targets and timelines for EV adoption hinder progress.
    - Limited incentives and underdeveloped charging infrastructure restrict EV adoption.
    - Import duties favor internal combustion engine vehicles over EVs, discouraging transition.

10. **Research and Development (R&D)**
    - Limited investment in R&D hampers innovation and growth.
    - Policies fail to promote significant investment in technological advancements.

11. **Workforce Development**
    - Workforce lacks specialized skills in EV technology.
    - Insufficient training and development programs restrict industry progress.

12. **Battery Recycling**
    - Unclear policies on battery recycling raise environmental concerns.

Stakeholder Analysis

The development of Pakistan's automotive industry involves a range of stakeholders, including the government, foreign investors, manufacturing units, new entrants, the general public, and industry workers. Each stakeholder has distinct interests, expectations, and influences shaping the industry's trajectory.

The Government of Pakistan

The Government of Pakistan, as a paramount stakeholder in the automotive industry, possesses a multifaceted set of interests and expectations. Primarily, the government is driven by a desire to foster economic growth, enhance the country's competitiveness in the global market, and increase exports. Moreover, it seeks to attract foreign investment, create employment opportunities, and improve the overall standard of living for its citizens.

In terms of expectations, the government anticipates the effective implementation of policies and regulations to support the industry's development, including the establishment of Special Economic Zones (SEZs) and the provision of incentives for manufacturers. Furthermore, it expects the industry to adhere to stringent quality and safety standards, comply with environmental regulations, and contribute to the nation's technological advancement.

The government's influence on the industry is profound, as it has the authority to establish and enforce policies, regulations, and incentives that shape the industry's trajectory. Through its various ministries and agencies, such as the Ministry of Industries and Production and the Pakistan Automotive Manufacturing and Development Company (PAMADCO), the government plays a crucial role in shaping the industry's development. Therefore, the government's interests, expectations, and influence are pivotal in determining the fate of the automotive industry in Pakistan.

The Government of Japan

The Government of Japan, as a pivotal stakeholder in the Pakistani automobile industry, possesses a distinct set of interests that shape its engagement with the sector. Japan's primary interest lies in expanding its automotive market share in Pakistan, thereby consolidating its position as a leading player in the global industry.

To achieve this, Japan seeks to protect the interests of its investors and manufacturers operating in Pakistan, ensuring a favorable business environment that fosters growth and profitability. Furthermore, Japan is keen to promote the export of its vehicles and automotive parts to Pakistan, capitalizing on the country's growing demand for high-quality vehicles. Additionally, Japan aims to encourage technology transfer and collaboration between its companies and Pakistani counterparts, thereby enhancing the industry's technological capabilities and competitiveness. By doing so, Japan seeks to support the development of Pakistan's automotive industry in a manner that aligns with its economic and strategic interests.

The Government of Japan expects a range of outcomes from its engagement with the Pakistani automobile industry. It expects favorable trade agreements and regulatory frameworks that facilitate the entry and operation of Japanese companies in Pakistan. Japan further expects the protection of its intellectual property rights and investments, ensuring a secure and predictable business environment. Additionally, Japan anticipates access to a skilled and competent workforce, enabling its companies to operate efficiently and effectively.

A stable and predictable business environment, free from undue regulatory burdens and political risks, is also a key expectation for Japan. Moreover, Japan seeks opportunities for collaboration with Pakistani companies and research institutions, fostering innovation and technological advancement in the industry.

The Manufacturing Units

The manufacturing units, comprising both domestic and foreign players, constitute a vital stakeholder group in the Pakistani automobile industry. These units, engaged in the production of vehicles and automotive parts, have a profound interest in the industry's growth and development. Their primary interest lies in maximizing profits, reducing production costs, and increasing market share.

To achieve these objectives, manufacturing units seek a favorable business environment characterized by minimal regulatory hurdles, access to high-quality inputs, and a skilled workforce. The manufacturing units expect a range of outcomes from their engagement with the industry. They anticipate access to incentives and subsidies that enable them to compete with global players. They also expect a stable and predictable supply chain, ensuring the timely delivery of high-quality inputs.

Additionally, manufacturing units expect government support in terms of investment in infrastructure, research and development, and human capital development. They seek a favorable trade regime to export their products to

international markets. Furthermore, manufacturing units seek protection from unfair competition, ensuring a level playing field for all industry players.

The influence of manufacturing units on the industry is significant, as they play a crucial role in shaping the industry's development trajectory. Through their investments, production, and employment practices, manufacturing units contribute to the industry's growth and competitiveness. Their interactions with suppliers, customers, and regulatory bodies also influence the industry's structure and evolution. Moreover, manufacturing units have the capacity to shape industry trends, drive innovation, and influence consumer preferences. Therefore, their interests, expectations, and influence are critical in determining the fate of the Pakistani automobile industry.

The New Entrants in the Automobile Industry

The new entrants in the automobile market of Pakistan, comprising both domestic and foreign players, constitute a distinct stakeholder group with unique interests and expectations. These new entrants, seeking to establish a foothold in the industry, have a primary interest in accessing the market and gaining a competitive edge.

They aim to capitalize on the growing demand for vehicles in Pakistan, leveraging their innovative products, services, and business models to capture market share. The new entrants expect a range of outcomes from their engagement with the industry. They expect a favorable regulatory environment, enabling them to enter the market with minimal barriers and bureaucratic hurdles. They anticipate access to adequate infrastructure, including roads, ports, and logistics facilities, to facilitate their operations.

Additionally, new entrants expect a skilled and competent workforce capable of supporting their production and sales activities. They also expect a competitive market structure, free from undue barriers and restrictive practices, allowing them to compete on a level playing field.

The influence of new entrants on the industry is significant, as they bring innovation, competition, and dynamism to the market. Through their entry, they challenge incumbent players, driving them to improve their products, services, and processes. New entrants also contribute to the industry's growth, creating new employment opportunities and enhancing the industry's technological and managerial capabilities. Moreover, they influence consumer preferences, shaping the industry's product and service offerings. Therefore, the interests, expectations, and influence of new entrants are crucial in shaping the future trajectory of the Pakistani automobile industry.

The General Public

The general public, comprising individuals and households, constitutes a vital stakeholder group in the Pakistani automobile industry, as they are directly affected by the industry's activities and outcomes. The general public has a primary interest in accessing affordable, safe, and reliable transportation, which is critical to their daily lives, livelihoods, and well-being.

They expect the automobile industry to provide a range of vehicles that meet their diverse needs, preferences, and income levels. The general public expects several outcomes from the automobile industry. They expect access to vehicles that meet stringent safety and environmental standards, minimizing the risk of accidents and environmental degradation.

They also anticipate affordable vehicle prices, financing options, and maintenance costs, enabling them to own and operate vehicles without undue financial burden. Additionally, the general public expects a comprehensive network of roads, highways, and transportation infrastructure, facilitating safe and efficient travel.

They also expect the industry to provide employment opportunities, contribute to economic growth, and support social development. The influence of the general public on the industry is significant, as their preferences, behaviors, and expectations shape the industry's product and service offerings.

Through their purchasing decisions, the general public influences the demand for specific vehicle types, features, and technologies, driving the industry's innovation and investment strategies. Moreover, the general public's expectations regarding safety, environmental sustainability, and social responsibility shape the industry's regulatory environment and corporate social responsibility initiatives. Therefore, the interests, expectations, and influence of the general public are crucial in determining the industry's trajectory and its impact on the Pakistani economy and society.

The Workers in the Automobile Industry

The workers in the automobile market of Pakistan, comprising laborers, technicians, and professionals, constitute a vital stakeholder group as they are directly engaged in the production, sales, and service of vehicles. These workers have a primary interest in securing decent employment, fair compensation, and safe working conditions, which are essential to their well-being and livelihoods. They expect the industry to provide opportunities for skill development, career advancement, and social protection.

The workers in the automobile industry expect several outcomes from their engagement with the sector. They expect fair wages and benefits commensurate with their skills and contributions to the industry. They

anticipate a safe and healthy work environment, free from hazards and risks that might affect their physical and mental well-being. Additionally, workers expect opportunities for training and development, enabling them to enhance their skills and adapt to technological changes. They also expect a stable and secure employment relationship, protected by labor laws and regulations.

The influence of workers on the industry is significant, as their skills, efforts, and commitment shape the industry's productivity, quality, and innovation. Through their daily work, workers contribute to the design, production, and delivery of vehicles, influencing the industry's reputation and competitiveness. Moreover, workers' experiences, concerns, and expectations shape the industry's human resource policies, labor relations, and corporate social responsibility initiatives.

Therefore, the interests, expectations, and influence of workers are crucial in determining the industry's performance, social impact, and sustainability in Pakistan.

Issues and Challenges in Policy Implementation

1. The setting of unrealistic targets for the industry's growth and development poses significant challenges for stakeholders (Ghumman, 2024).
2. The monopoly of large corporations limits competition, innovation, and market access for smaller players.
3. The slow pace of localization hinders the industry's ability to develop indigenous capabilities and reduce reliance on imports.
4. The reliance on imported auto parts for assembly and production constrains the industry's growth and competitiveness (J. Seirut, 2023).
5. The influx of used vehicles and auto parts undermines the domestic industry's development and poses environmental concerns (Business Recorder, 2023).
6. The limited availability of skilled labor and trained professionals hinders the industry's innovation and growth.
7. The Japanese government's policies and regulations pose challenges for Pakistan's automobile industry, particularly in terms of trade and investment (Ghumman, 2024).
8. The lack of supporting infrastructure for emerging technologies, such as electric vehicles, hinders their adoption and development.
9. The lack of FTAs and PTAs limits the industry's access to global markets and raw materials.
10. The inadequate provision of incentives and subsidies by the government constrains the industry's growth and development.
11. The slow pace of charging infrastructure development hinders the adoption of electric vehicles.

12. The rapid adoption of electric vehicles without adequate infrastructure upgrades poses significant risks to the power grid.
13. The high costs of production and purchase pose significant challenges for both manufacturers and consumers (Mustafa, 2023).
14. The limited availability of raw materials hinders the industry's growth and development.
15. The lack of thorough research and analysis leads to ineffective policies and regulations.
16. The significant import bill for auto parts and vehicles poses challenges for the country's trade balance.
17. The neglect of public transport development hinders the industry's growth and sustainability.
18. The failure to effectively market the economic benefits of electric vehicles constrains their adoption.

Conclusion

The Government of Pakistan has implemented a series of initiatives aimed at fostering the development and competitiveness of the automotive industry. These programs and policies, including the Deletion Program, Tariff-Based System, Auto Industry Development Program, Automotive Development Policy, National Electric Vehicle Policy, and Auto Industry Development & Export Policy, have had a profound impact on the industry, promoting growth, investment, innovation, and sustainability.

Through these initiatives, the government has sought to reduce reliance on imports, promote local manufacturing, and enhance the industry's export potential. The policies have encouraged the development of a local supply chain, with new auto parts manufacturing facilities established to support the growing industry. The National Electric Vehicle Policy, in particular, aims to promote sustainable transportation and mitigate climate change by reducing emissions. This policy seeks to position Pakistan as a key player in the global electric vehicle value chain, generating employment opportunities and contributing to a sustainable future.

The cumulative effect of these policies has transformed the automotive industry in Pakistan into a vibrant and competitive sector, with manufacturers producing high-quality vehicles for both domestic and international markets. The government's commitment to promoting a competitive and sustainable automotive sector remains a key driver of growth and development in Pakistan.

Recommendations

Based on the issues and challenges identified in Pakistan's automobile industry through the study of related policies, initiatives, legal provisions, practices, and processes, the following short-term, medium-term, and long-term policy recommendations are proposed:

Short-term

Comprehensive Tax Incentive Review
A thorough review of tax incentives is necessary to align them with national objectives, enhance industry competitiveness, and promote sustainable growth. The review should evaluate the impact of incentives on investment, employment, and exports, involving stakeholder consultations to ensure a balanced approach.

Reassessment of Export Targets
Obligatory export targets should be reviewed to ensure they are realistic, achievable, and aligned with national goals. This process must consider the industry's capacity, global market trends, and trade agreements.

Enhancing Human and Technical Competence
Industry-focused training programs should prioritize upskilling and reskilling workers. Technology transfer agreements can support the adoption of advanced technologies, with international collaboration enhancing overall capabilities.

Signing Free Trade Agreements (FTAs) and Preferential Trade Agreements (PTAs)
New trade agreements can boost exports, foster investment, and increase competitiveness. Negotiations should align with industry needs and global market dynamics.

Addressing Japanese Government Concerns
Resolving issues related to the Special Trading Company (STC) is crucial for fostering bilateral cooperation and encouraging investment. Dialogue should emphasize mutual benefits and collaboration.

Resolving Business Community Concerns
Engaging stakeholders to address challenges and facilitate dialogue is essential for creating a conducive business environment.

Inter-Ministerial Coordination
Improved collaboration among ministries can ensure a coherent and logical policy framework, enhancing the effectiveness of implementation.

Conversion to Electric Vehicles (EVs)
Encouraging the conversion of Light Vehicles (LVs) to EV kits can reduce emissions and promote sustainable transportation, supported by targeted incentives and subsidies.

Mid-term

Localization of the Automobile Industry
Promoting local production through incentives, technology transfer, and skills development can reduce reliance on imports and enhance competitiveness.

Infrastructure Development
Investments in roads, ports, and logistics facilities are essential to support production capacity and industry growth, facilitating sustainable transportation.

EV Infrastructure Development
Establishing charging stations and related facilities can accelerate EV adoption, contributing to reduced emissions and environmental sustainability.

Transformation of Public Transport
Transitioning traditional public transport systems to EVs can improve air quality and promote sustainable practices, supported by incentives and subsidies.

Economic-Centric EV Policy
Introducing a policy that balances economic growth with sustainability can drive EV adoption and industry development, addressing market trends and national priorities.

Local Auto-Parts Production
Encouraging local production of auto parts through incentives and skills development can reduce imports and strengthen industry growth.

Simplification of Procedures
Streamlining business processes can enhance ease of doing business, promote investment, and encourage entrepreneurship. Regulatory reforms should focus on simplifying registration, licensing, and permitting.

Renewable Energy Integration
Utilizing solar and wind energy for EV charging can reduce emissions and support sustainability. Investments in renewable energy infrastructure can further encourage EV adoption.

Long-term

Enhancing Competition through New Entrants
Policies should incentivize new investments, technology transfer, and skills development to foster innovation and growth.

International Market Surveys
Conducting market research can identify export opportunities, promote trade, and guide investment strategies to enhance competitiveness.

Public-Private Partnerships (PPPs)
Collaboration between the public and private sectors can drive industry development, promote investment, and improve competitiveness through technology transfer and infrastructure projects.

Identifying Industry Needs
Regular assessments of industry needs can inform policy-making, ensuring alignment with market dynamics and long-term development goals.

Practical Plan Using Log Matrix to Address Identified Issues and Problems

A comprehensive study of the automobile and EV sectors has revealed critical fault lines hindering the development of Pakistan's automobile industry. These include:

1. Absence of adequate infrastructure for EV sector development
2. Ambitious targets under AIDEP 2021-26 and NEVP-2019
3. Slow localization
4. Reliance on auto-parts imports
5. Capacity constraints in the automobile industry
6. Enforcement and coordination challenges

Issue-wise Plan

Absence of Adequate Infrastructure for EV Sector Development
The lack of dedicated EV manufacturing facilities, charging infrastructure, and research and development centers obstructs the adoption of EVs.

Proposed Actions:
- Establish EV-specific manufacturing zones.
- Develop a nationwide EV charging network.
- Invest in R&D institutions focusing on EV technologies.
- Facilitate public-private partnerships to accelerate infrastructure development.

Ambitious Targets under AIDEP 2021-26 and NEVP-2019

While commendable, the ambitious targets require meticulous planning, coordination, and support for successful implementation.

Proposed Actions:

- Break down targets into achievable milestones with clear timelines.
- Strengthen inter-ministerial collaboration to ensure coordinated policy enforcement.
- Provide incentives to industry players to meet localization, export, and EV adoption targets.

Slow Localization

The gradual pace of localization has led to dependency on imported components, limiting self-reliance and competitiveness.

Proposed Actions:

- Prioritize localization by setting up auto-parts manufacturing facilities.
- Promote R&D centers and skill development programs for local production.
- Offer tax incentives and subsidies for businesses investing in localization.

Reliance on Auto-Parts Imports

This dependence exposes the industry to exchange rate volatility, supply chain disruptions, and limited access to advanced technologies.

Proposed Actions:

- Incentivize local manufacturing of auto-parts through research grants and tax benefits.
- Encourage technology transfer agreements with global partners.
- Establish a robust local supply chain for critical components.

Capacity Constraints in the Automobile Industry

Limited production volumes and outdated technologies hamper global competitiveness.

Proposed Actions:

- Modernize manufacturing technologies through government-backed investments.
- Launch programs to upskill the workforce in advanced automotive technologies.
- Enhance production capacity by supporting process optimization and efficiency initiatives.

Enforcement and Coordination Challenges

Weak policy implementation and fragmented efforts among stakeholders impede growth.

Proposed Actions:

- Create a dedicated coordination body for policy implementation and stakeholder engagement.
- Facilitate regular communication between policymakers, industry players, and other relevant entities.
- Monitor and evaluate policy outcomes to ensure accountability and alignment with objectives.

Summary of Approach

This plan emphasizes targeted investments, incentives, and collaboration across government, industry, and other stakeholders. By addressing these fault lines systematically, the automobile and EV sectors can achieve sustainable growth and global competitiveness.

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