

# Analyzing the Performance of the Indian Automobile Sector

Prerna Khanna<sup>1</sup>; Dr. Satinder Kumar<sup>2</sup>

<sup>1</sup>Research Scholar, DAV University, Jalandhar, Punjab, India

<sup>2</sup>Research Guide, Assistant Professor, DAV University, Jalandhar, Punjab, India

**Corresponding Author Email:** [prernakhanna9876@gmail.com](mailto:prernakhanna9876@gmail.com)

**Abstract**— This study analyzes the performance of the Indian automobile sector over the period from 2014-15 to 2023-24, using data collected from the Society of Indian Automobile Manufacturers (SIAM). The analysis focuses on key performance indicators such as production, domestic sales, and exports, aiming to understand the trends, challenges, and opportunities within the industry. The overall production of the Indian automobile sector expanded from 23.36 million units in 2014-15 to 28.43 million units in 2023-24, reflecting a compound annual growth rate (CAGR) of 2.21%. The growth was primarily driven by a strong recovery in the passenger and commercial vehicle segments, while the two- and three-wheeler markets faced persistent challenges. Domestic sales increased from 19.72 million units to 23.85 million units, with a moderate CAGR of 2.13%, demonstrating resilience in the face of structural and economic hurdles. In contrast, the export market experienced fluctuating growth, with significant increases in 2016-17 and 2018-19, but a downturn in 2020-21 and 2023-24, attributed to the global market's volatility and the pandemic's impact. Despite these challenges, the recovery of certain vehicle categories, particularly passenger vehicles and two-wheelers, coupled with the emergence of new categories like quadricycles, indicates potential growth opportunities. In conclusion, while the sector has faced setbacks in specific areas, the overall performance highlights its resilience and suggests positive long-term prospects for the Indian automobile industry.

**Keywords:** Growth, Automobile Industry, India, Export, Production, Domestic Sale.

---

## I. INTRODUCTION

India's strong economic growth of 8.2% in 2023-24 has greatly helped the Indian automotive industry grow at an impressive rate. The industry expanded by 12.5% in terms of the number of vehicles produced, contributing significantly to the country's economy. It now makes up 6.8% of India's overall GDP and 40% of the manufacturing sector's GDP. With an annual turnover of around ₹20 lakh crore (USD 240 billion), it plays a key role in creating jobs and strengthening the economy (Annual Reports of SIAM, 2023-24). The sector's remarkable trajectory has been shaped by key factors such as advanced technology, a skilled workforce, and a well-established auto-ancillary ecosystem (Rajesh and Dileep, 2013)). Furthermore, foreign direct investment (FDI) inflows, which surged post-liberalization, have provided a significant impetus to its development.

The Indian government has also supported this growth through various policies. The Auto Policy of 2002 was an early step toward making India a leader in the automobile sector. This was followed by the Automotive Mission Plan 2006-16, which set clear goals for development, and the updated Automotive Mission Plan 2016-26, which focuses on innovation and sustainability. These policies aim to make India a global hub for vehicle manufacturing and design (Bhasker and Sharma,(2013)).

Today, with the help of these strategies, the Indian automotive industry is not just meeting domestic demand but is also making a mark internationally. These government-led initiatives are shaping the future of the sector, helping it grow stronger and more competitive on the world stage.

## II. REVIEW OF LITERATURE

The evolution of the Indian automobile industry has been deeply shaped by a mix of government policies, economic reforms, and foreign investments. Early research, like Agarwal (1991), studied how features such as vertical integration, diversification, and the age of firms affected their profits during the tightly controlled economy before liberalization. This period had limited technological progress and competition due to strict policies.

The economic reforms of the 1990s marked a turning point, as Bowonder and Richardson (2000) explained. These changes brought in new technologies and partnerships with global companies like Suzuki, Hyundai, and TELCO, helping Indian firms

improve their research and development (R&D) skills and become more competitive. This laid the groundwork for steady growth based on innovation and market competitiveness. Studies by Narayanan (2001, 2004) highlighted clear differences between the impact of policies before and after liberalization, showing how removing restrictions encouraged technology upgrades and export growth, which significantly improved the performance of companies in the industry.

Foreign direct investment (FDI) became a key factor in the industry's growth. Nayak (2005) and Rajesh and Dileep (2013) showed how FDI changed the structure of the industry, with the Suzuki-Maruti collaboration being a major success story. Rajalakshmi and Ramachandran (2011) also pointed out how FDI helped improve production, sales, and exports in different types of vehicles. The mix of globalization, changes in policies, and smart collaborations has continued to drive the industry's progress. Research by Sarangi et al. (2014) and Krishnaveni and Vidya (2015) showed steady growth in the passenger and two-wheeler segments, despite occasional ups and downs in the commercial vehicle market.

A focus on better operations and managing financial structures has been a common theme in studies. Earlier findings by Chisti et al. (2013) and Tiwari (2013) are still relevant, as newer research continues to show how important these factors are for keeping profits and staying competitive. For example, Abey and Velmurugan (2018) studied what drives profits in 23 automotive companies and found that larger companies, higher sales growth, and better use of assets positively affected profits. They stressed the need to make better use of fixed assets and take advantage of government support to improve results. Miglani (2019) looked at how the industry has grown, increasing foreign investments, and policies like the Automobile Mission Plan 2026 as key reasons. The study also highlighted the need for homegrown technological improvements and better funding to connect India with global value chains. The findings suggest that matching policies with market needs is crucial for consistent growth.

In a more recent study, Chowdhury and Chatterjee (2020) used data from multiple companies to explore what influenced the industry's growth between 1998 and 2016. They found that labor productivity, capital productivity, company age, and policy support were important factors. At the same time, the government has started focusing on new areas, like electric vehicles (EVs), by promoting local battery production and environmentally friendly technologies. Investments in infrastructure and incentives for EV manufacturing show a clear shift toward sustainability and preparing for the future.

Overall, the Indian automobile industry's journey shows a strong connection between policy changes, global influences, and company strategies. A mix of better operations, innovation, and government support has made the industry a key part of India's economic growth while preparing it for a stronger role in the global market.

### **III. OBJECTIVE OF THE STUDY**

To examine the Current Growth Of different segments of Indian Automobile Industry.

### **IV. DATA SOURCE, TIME FRAME AND METHODOLOGY**

This study used data from the Society of Indian Automobile Manufacturers (SIAM), which is the main national organization representing vehicle and engine manufacturers in India. SIAM is a charitable society registered under the Societies Registration Act, 1860, and works to help the automobile industry grow and contribute to the Indian economy. It also aims to promote the industry's social responsibilities, improve efficiency, and ensure the safety and protection of vehicle users and the public. The time period for the study was taken from 2014 to 2024. SIAM collaborates with various stakeholders to help shape economic, environmental, and commercial policies, regulations, and standards for the automobile sector. It provides useful economic and statistical data, as well as technical and policy guidance, to the industry. SIAM publishes reports such as Monthly Industry Statistics and Monthly Commodity Price Monitor to share important information. The time period for the study was taken from 2014 to 2024. One of SIAM's main goals is to increase the automobile industry's contribution to the growth of the Indian economy. To analyze the data, the study used two methods: the Average Annual Growth Rate (AAGR) and the Compound Annual Growth Rate (CAGR). The time period for the study was taken from 2014 to 2024.

### **V. DISCUSSION: PERFORMANCE OF INDIAN AUTOMOBILE INDUSTRY**

**Table 1: Automobile Production Trends (Number of Vehicles)**

Category	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	CAGR
Total Passenger Vehicles	3,221,419	3,465,045	3,801,670	40,20,267	4,028,471	34,24,564	30,62,280	36,50,698	45,87,116	49,01,844	4.77%
Total Commercial Vehicles	698,298	786,692	810,253	8,95,448	1,112,405	7,56,725	6,24,939	8,05,527	10,35,626	10,66,429	4.82%
Three Wheelers	949,019	934,104	783,721	10,22,181	1,268,833	11,32,982	6,14,613	7,58,669	8,55,696	9,92,936	0.50%
Total Two wheelers	18,489,311	18,830,227	19,933,739	2,31,54,838	24,499,777	2,10,32,927	1,83,49,941	1,78,21,111	1,94,59,009	2,14,68,527	1.67%
Quadricycle	-	531	1584	1,713	5,388	6,095	3,836	4,061	2,897	5,006	32.37%
Grand Total	23,358,047	24,016,599	25,330,967	2,90,94,447	30,914,874	2,63,53,293	2,26,55,609	2,30,40,066	2,59,40,344	2,84,34,742	2.21%

SOURCE : Annual Reports of SIAM (Society of Indian Automobile Manufacturers)

The Table 1, shows a consistent upward trend in the total number of vehicles across all categories from 2014-15 to 2023-24. Passenger vehicles and commercial vehicles experienced steady growth, with a CAGR of 4.77% and 4.82%, respectively. Three-wheelers, however, saw minimal growth, with a CAGR of just 0.50%. Two-wheelers displayed moderate growth, with a CAGR of 1.67%. Quadricycles experienced the highest growth, with a remarkable CAGR of 32.37%. The grand total of vehicles grew at a rate of 2.21% annually. This indicates a generally positive expansion of the Indian automotive sector, though the growth rate for different vehicle types varies significantly. The most notable surge in the market occurred in the passenger and commercial vehicle segments. Despite the overall growth, three-wheelers lag behind in terms of growth rate. The future outlook suggests that the automotive market will continue to expand, driven mainly by passenger and commercial vehicles.

**Table 2 : Production of Automobiles (Y-O-Y) growth rate**

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total Passenger Vehicles	7.56	9.71	5.75	0.20	-14.9	-10.57	19.21	25.65	6.86
Total Commercial	12.65	2.99	10.51	24.22	-31.9	-17.41	28.89	28.56	2.97

Vehicles									
Three Wheelers	-1.57	-16.09	30.42	24.12	-10.70	-45.75	23.43	12.78	16.03
Total Two wheelers	1.84	5.86	16.15	5.80	-14.15	-12.75	-2.88	9.19	10.32
Quadricycle	–	198.30	8.14	214.53	13.12	-37.06	5.86	-28.66	72.79
Grand Total	2.81	5.47	14.85	6.25	-14.75	-14.03	1.69	12.58	9.61

Source : Author Calculations

The table 2, illustrates the year-on-year growth rates across various vehicle categories in the Indian automobile industry from 2015-16 to 2023-24. Passenger vehicles experienced steady growth until 2018-19, followed by a sharp decline during 2019-20 (-14.9%) and 2020-21 (-10.57%) due to economic challenges and the pandemic. However, strong recovery in subsequent years brought growth rates of 19.21% in 2021-22 and 25.65% in 2022-23. Commercial vehicles showed similar trends, with robust growth of 24.22% in 2018-19, followed by declines of -31.9% and -17.41% in 2019-20 and 2020-21, respectively, before recovering to 28.89% in 2021-22 and 28.56% in 2022-23.

Three-wheelers showed volatile growth, with a significant drop of -45.75% in 2020-21, reflecting the impact of reduced shared mobility demand during the pandemic, followed by partial recovery in later years. Two-wheelers, the largest segment, witnessed relatively stable growth until 2018-19 but experienced a prolonged decline during 2019-21, with modest recovery to 10.32% in 2023-24. Quadricycles exhibited the most dynamic growth, highlighted by a remarkable 214.53% increase in 2018-19, although growth has remained inconsistent in recent years. Overall, the industry faced significant challenges during the pandemic but has shown strong signs of recovery, particularly in the passenger and commercial vehicle segments, while two-wheelers and three-wheelers continue to recover at a slower pace.

**Table 3 : Automobile Domestic sales trend (Number of Vehicles)**

Category	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	CAGR
Total Passenger Vehicles	2,601,236	2,789,208	3,047,582	32,88,581	3,377,389	27,73,519	27,11,457	30,69,523	38,90,114	42,18,746	5.52%
Total Commercial Vehicles	614,948	685,704	714,082	8,56,916	1,007,311	7,17,593	5,68,559	7,16,566	9,62,468	9,67,878	5.17%
Three Wheelers	532,626	538,208	511,879	6,35,698	701,005	6,37,065	2,19,446	2,61,385	4,88,768	6,91,749	2.95%

Total Two wheelers	15,975,561	16,455,851	17,589,738	2,02,00,117	21,179,847	1,74,16,432	1,51,20,783	1,35,70,008	1,58,62,771	1,79,74,365	1.32%
Quadricycle	–	–	–	–	627	942	(12)	124	725	725	2.95%
Grand Total	19,724,371	20,468,971	21,863,281	2,49,81,312	26,266,179	2,15,45,551	1,86,20,233	1,76,17,606	2,12,04,846	2,38,53,463	2.13%

SOURCE : Annual Reports of SIAM (Society of Indian Automobile Manufacturers)

The table 3, presents the steady growth in the domestic sales of vehicles across all categories from 2014-15 to 2023-24. Total passenger vehicles saw the highest growth with a CAGR of 5.52%, reflecting increasing consumer demand. Commercial vehicles also experienced significant growth with a CAGR of 5.17%. Three-wheelers showed a moderate growth rate of 2.95%, while two-wheelers grew at a slower pace with a CAGR of 1.32%. The quadricycle segment, though small, exhibited positive growth in the last few years, with a CAGR of 2.95%. The grand total of all vehicles grew at a rate of 2.13% annually. Passenger vehicles contributed the most to the overall sales growth, followed by commercial vehicles. Despite slower growth in two-wheelers and three-wheelers, these segments continue to dominate the market. The steady rise in vehicle sales indicates a positive trend for the automotive industry. The growth pattern highlights the importance of the passenger vehicle segment in driving market expansion.

**Table 4 : Domestic sales of Automobiles (Y-O-Y) growth rate**

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total Passenger Vehicles	7.22	9.26	7.90	2.70	-17.87	-2.23	13.20	26.73	8.44
Total Commercial Vehicles	11.50	4.13	20.00	17.55	-28.76	-20.76	26.03	34.31	0.56
Three Wheelers	1.04	-4.89	24.14	10.27	-9.12	-65.55	19.11	86.99	41.52
Total Two wheelers	3.00	6.89	14.84	4.85	-17.76	-13.18	-10.25	16.89	13.31
Quadricycle	–	–	–	–	50.23	-98.72	933.33	484.67	0
Grand Total	3.77	6.81	14.26	5.14	-17.9	-13.5	-5.38	20.36	12.49

Source : Author Calculations

The table 4, illustrates the year-on-year (Y-o-Y) growth rates of domestic automobile sales across various categories in India from 2015-16 to 2023-24. Passenger vehicles showed steady growth until 2018-19, with a peak growth of 9.26% in 2016-17. However, the segment faced a significant decline in 2019-20 (-17.87%) and a marginal contraction in 2020-21 (-2.23%) due to economic slowdown and pandemic-induced disruptions. The recovery phase began in 2021-22 with a robust growth of 13.20%, further accelerating to 26.73% in 2022-23 before stabilizing at 8.44% in 2023-24.

Commercial vehicles displayed volatile growth, with strong double-digit gains in 2017-18 (20.00%) and 2018-19 (17.55%) before experiencing steep declines of -28.76% in 2019-20 and -20.76% in 2020-21. A sharp recovery followed, peaking at 34.31% in 2022-23, although growth slowed to 0.56% in 2023-24. Three-wheelers exhibited erratic growth, with sharp declines during the pandemic (-65.55% in 2020-21), followed by substantial recoveries of 86.99% in 2022-23 and 41.52% in 2023-24, reflecting renewed demand for shared mobility solutions.

Two-wheelers, the largest segment, grew consistently until 2018-19 but faced prolonged declines during 2019-21, with contractions of -17.76% and -13.18%, respectively. Recovery has been slower compared to other categories, with modest growth of 16.89% in 2022-23 and 13.31% in 2023-24. Quadricycles, a niche category, saw extreme volatility, including extraordinary growth of 933.33% in 2021-22, though this is attributed to its low base.

Overall, the Grand Total reveals a similar trajectory, with a strong growth phase until 2018-19, followed by declines in 2019-21 due to economic and pandemic-related challenges. The sector began recovering in 2021-22, achieving robust growth of 20.36% in 2022-23 and 12.49% in 2023-24, driven by pent-up demand, policy support, and economic revival.

**Table 5 : Automobile exports trends (Number of Vehicles)**

Category	2014-15	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24	CAGR
Total Passenger Vehicles	621,341	653,053	758,727	7,48,366	6,76,192	6,62,118	4,04,397	5,77,875	6,62,703	6,72,105	0.88%
Total Commercial Vehicles	86,939	103,124	108,271	96,865	99,933	60,379	50,334	92,297	78,645	65,816	-3.05%
Three Wheelers	407,600	404,441	271,894	3,81,002	5,67,683	5,01,651	3,93,001	4,99,730	3,65,549	2,99,977	-3.35%
Total Two wheelers	2,457,466	2,482,876	2,340,277	28,15,003	3,280,841	35,19,405	32,82,786	44,43,131	36,52,122	34,58,416	3.87%
Quadricycle	–	334	1,556	1,605	4,400	5,185	3,529	4,326	2,280	4,178	37.14%
Grand Total	3,573,346	3,643,828	3,480,725	40,42,841	4,629,049	47,48,738	41,34,047	56,17,359	47,61,299	45,00,492	2.60%

SOURCE : Annual Reports of SIAM (Society of Indian Automobile Manufacturers)

The table 5, reveals mixed growth trends across different vehicle categories from 2014-15 to 2023-24. Passenger vehicles experienced modest growth with a CAGR of 0.88%, indicating steady demand but slow expansion. Commercial vehicles, on the other hand, saw a decline with a negative CAGR of -3.05%, reflecting a slowdown in this segment. Three-wheelers also experienced a decline, with a CAGR of -3.35%, indicating reduced demand in this category. Two-wheelers grew at a healthy rate of 3.87%, highlighting strong consumer preference and robust sales. The quadricycle segment showed remarkable growth with



a CAGR of 37.14%, albeit from a smaller base. The grand total of all vehicle categories grew at a moderate rate of 2.60%, driven by the two-wheeler and quadricycle segments. The overall trend suggests a steady market for passenger and two-wheel vehicles, while commercial and three-wheel segments faced challenges. Despite the slow growth in certain categories, the Indian automotive market continues to expand overall. The shift towards two-wheelers and the emerging popularity of quadricycles signal evolving consumer preferences.

**Table 6 : Exports of Automobiles (Y-O-Y) growth rate**

Category	2015-16	2016-17	2017-18	2018-19	2019-20	2020-21	2021-22	2022-23	2023-24
Total Passenger Vehicles	5.10	16.18	-1.36	-9.64	-2.08	-38.92	42.89	14.67	1.41
Total Commercial Vehicles	18.61	4.99	-10.53	3.16	-39.58	-16.63	83.36	-14.79	-16.31
Three Wheelers	-0.77	-32.77	40.12	48.99	-11.63	-21.65	27.15	-26.85	-17.93
Total Two wheelers	1.03	-5.74	20.28	16.54	7.27	-6.72	35.34	-17.80	-5.30
Quadricycle	_	365.86	3.149	174.14	17.84	-31.93	22.58	-47.29	83.24
Grand Total	1.97	-4.47	16.14	14.49	2.58	-12.94	35.88	-15.23	-5.47

Source : Author Calculations

The table 6, presents the year-over-year (Y-O-Y) growth rates for automobile exports across various categories from 2015-16 to 2023-24.

The exports of total passenger vehicles fluctuated significantly over the years. After a robust growth of 16.18% in 2016-17, exports experienced negative growth in 2017-18 and 2018-19, with a sharp decline of 38.92% in 2020-21, reflecting the impact of the pandemic. However, there was a strong recovery in 2021-22, with growth of 42.89%, before stabilizing at 1.41% in 2023-24. Total commercial vehicles exhibited volatility with significant fluctuations in the growth rates. After an 18.61% increase in 2015-16, exports dropped sharply in 2019-20 by -39.58%. Despite an impressive recovery of 83.36% in 2021-22, the subsequent years saw a decline, with a decrease of -16.31% in 2023-24, reflecting the challenges faced by the sector in international markets. For three-wheelers, the growth was highly volatile. While 2017-18 and 2018-19 saw substantial growth rates of 40.12% and 48.99%, respectively, 2020-21 witnessed a significant dip of -21.65%. The overall trend indicated high fluctuations, with a negative growth of -17.93% in 2023-24, largely due to global disruptions. Two-wheelers displayed moderate growth overall. After experiencing a 20.28% increase in 2017-18, there were declines in the following years, including a sharp -6.72% drop in 2020-21. Despite this, two-wheeler exports rebounded in 2021-22 with a growth of 35.34%, but declined again by -5.30% in 2023-24. The quadricycle category, although relatively small, showed extreme volatility. After an extraordinary 365.86% growth in 2016-17, there were sharp fluctuations, including a significant drop of -31.93% in 2020-21 and a strong recovery in 2023-24 with 83.24% growth. In summary, the overall grand total growth rate fluctuated significantly over the years, with strong growth in 2016-17 (16.14%) and 2018-19 (14.49%), but a downturn in the pandemic years, especially in 2020-21. The growth rate turned negative in 2020-21 and 2023-24, largely reflecting the challenges of the global automotive market during these years. The data indicates a recovery in certain categories like passenger vehicles and two-wheelers, while others, such as commercial vehicles and three-wheelers, continued to face setbacks.

## VI. SUMMARY

The production of Indian automobile industry has demonstrated steady growth from 2014-15 to 2023-24, expanding from 23.36 million units to 28.43 million units, reflecting a compound annual growth rate (CAGR) of 2.21%. This growth was driven by strong recovery in passenger and commercial vehicles, despite challenges faced by the two- and three-wheeler segments. Domestic sales also showed resilience, growing from 19.72 million units to 23.85 million units, with a moderate CAGR of

2.13%. However, exports experienced fluctuating growth, with significant growth in 2016-17 and 2018-19 but a downturn during the pandemic years, especially in 2020-21. The export market saw a negative growth rate in 2023-24, reflecting global market challenges. The recovery in passenger vehicles and two-wheelers suggests opportunities for future growth, particularly in emerging categories like quadricycles. Despite setbacks in certain segments, the overall resilience of the sector indicates positive long-term prospects.

## REFERENCES

1. Abey, J., & Velmurugan, R. (2018). Determinants of profitability in Indian automobile industry. *International Journal of Pure and Applied Mathematics*, 119(12), 15301-15313
2. Agarwal, R. N. (1991). Profitability and growth in Indian automobile manufacturing industry. *Indian Economic Review*, 81-97.
3. Bhasker, V. V., & Sharma, Y. S. (2013). Role of Foreign Direct Investment–FDI: in the growth of Automobile Industry in India. *Research Journal of Management Sciences ISSN*, 2319, 1171.
4. Bowonder, B., & Richardson, P. K. (2000). Liberalization and the growth of business-led R&D: the case of India. *R&D Management*, 30(4), 279-288.
5. Chisti, K. A., Ali, K., & Sangmi, M. I. D. (2013). Impact of capital structure on profitability of listed companies (evidence from India). *The USV Annals of Economics and Public Administration*, 13(1 (17)), 183-191.
6. Chowdhury, s. G., & Chatterjee, s. (2020). Determinants of Indian Automobile Industry Growth. *Eurasian Journal of Business and Economics*, 13(26), 65-91.
7. Krishnaveni, M., & Vidya, R. (2015). Growth of Indian automobile industry. *International Journal of Current Research and Academic Review*, 3(2), 110-118.
8. <https://www.siam.in/publications.aspx?mpgid=42&pgidtrail=44>
9. Miglani, S. (2019). The Growth of the Indian Automobile Industry: Analysis of the Roles of Government Policy and Other Enabling Factors. In *Innovation, Economic Development, and Intellectual Property in India and China* (pp. 439-463). Springer, Singapore.
10. Narayanan, K. (2001). Liberalisation and the differential conduct and performance of firms: A study of the Indian automobile sector.
11. Narayanan, K. (2004). Technology acquisition and growth of firms: Indian automobile sector under changing policy regimes. *Economic and Political Weekly*, 461-470.
12. Nayak, A. K. (2005). FDI model in emerging economies: Case of Suzuki Motor Corporation in India. *Journal of American Academy of Business*, 6(1), 238-245.
13. Rajesh, T., & Dileep, A. S. (2013). Foreign direct investment in automobile industry. *International Journal of Current Research and Academic Review*, ISSN, 2347-3215.
14. Rajalakshmi, K., & Ramachandran, T. (2011). Impact of Foreign Direct Investment on India's Automobile sector-with reference to Passenger car segment. *Research journal of Science and IT Management*, 1(1), 22-41.
15. Sarangi, P. K., Bano, S., & Pant, M. (2014). Future trend in Indian automobile industry: A statistical approach. *Apeejay-Journal of Management Sciences and Technology*, 1(2), 28-32.
16. Tiwari, S. (2013). Analysis of Profitability of Selected Two Major Two-Wheeler Automobile Companies In India. *Eduvantage*, 1(1).