

## An Investigation on Turbulent Times of Passenger Vehicle Segment in India

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### ABSTRACT

Indian Automobile sector is fifth largest in the world. The number of manufacturers, Associated MSME's, foreign brands, Luxury brands and several notable new comers flood the market every year. Passenger is vehicle the main contributor for automobiles in India. But why is this segment struggling to pose a sustainable growth? Several analysts forecast that India would reach third in PV among all nations provided with this set of infrastructure and other aspects in the year 2030. There are several explanations for this. This research paper examines the actual reasons for the slow growth of the PV segment namely COVID 19 impact, Inflationary situation, Semiconductor shortage and Fuel price surge. This paper also portrays the actions taken by the manufacturers, dealers and Government to safe guard this industry from economic failure as well seeking in hope that PV segment can revive itself overtime with strategic actions.

**KEYWORDS:** Fuel price surge, Semiconductor shortage, COVID 19, BS 4, BS 6, Inflation, liquidity crunch

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### INTRODUCTION

The Public transportation service in India keeps on growing and does not reach a saturation point due to the development phase of the nation. It is visible through the continuous infrastructure developments and expanding road networks. The need for commuting has forced the citizens to opt for personal vehicle purchasing. But unfortunately this component is the reason for existing congestion crisis in the south Asian country. In today's scenario majority of the middle class Indians looks forward to own a house as well as car for commuting and societal status. In addition to this manufacturers believe that India is a potential market for passenger vehicles when compared to that of other nations. The bulk population of the middle class and working class is a potential market to pitch the sales of new models and

moderate priced cars. This is the reason that India is a playground for manufacturers in the whole of Asia for deploying their facility. The present query is very critical; is this segment posing a positive prospect? The answer would be negative. The reason for this reply is due to the continuous hit on the industry over 5 years. Back to back impact factors that have taken this industry to a spot were government needs to take immediate policy framework to recover from the negative side.

### Objectives

- To understand the characteristics of Personal vehicle segment in India
- To enumerate the problems faced by the PV segment in India

- To analyse the various Initiatives taken by the Government towards the PV segment
- To suggest recovery initiatives for PV segment

### Research Methodology

Since the nature and scope of the paper is confined to several dependant as well as independent variables relating to PV segment, descriptive analysis is used to validate the data. This study contains secondary data abstracted from several journals, SIAM annual reports, GOI publications, articles published in newspapers and websites.

### Passenger Vehicle segment in India

Passenger vehicles segment is one of the notable industrial areas that dominate the domestic auto market next to two wheeler segment. 2020 turned India to be fifth largest automobile market in the world, with breath taking sales of 3.4 million units

sold in the passenger and commercial vehicles combined. India is a pivotal vehicle exporter and has strong infrastructure spread throughout the country. There is absolutely no question about labour requirement or land availability. India always welcomes manufacturing units to promote job opportunities. All these contents expose a positive background about the industry, but the present situation seems to be little disastrous. The top industry players also raised their concern to the government to change the phase of slow growth. The situation does not favour the segment with the present actions. Apart from India, several other nations also face the same quantum of risk and sluggishness. The respective governments are planning appropriate actions to tackle this problem. But the big question is whether this will work out make this segment stable in short span of time.

Manufacturer	2018	2019	2020	YOY change	Prospect
Maruti Suzuki	1,731,179	1,485,943	1213660	18.32 %	<b>Negative</b>
Hyundai	550,002	510,260	423642	16.98 %	<b>Negative</b>
Mahindra	232,181	219,663	136500	37.86 %	<b>Negative</b>
Tata motors	213,625	152,944	170151	11.25 %	<b>Positive</b>
Honda	174,880	134,741	70593	47.61 %	<b>Negative</b>
Toyota	151,480	126,701	76111	39.93 %	<b>Negative</b>
Ford	97,804	73,636	45799	37.80 %	<b>Negative</b>

(Data compiled by authors from SIAM, ET and FE 2019-2020)

### Literature review

Singh A., Gupta Dr. V. (2012) **Indian Automobile Industry: A Review**. The car Industry in India is currently working as far as the elements of an open market. Many joint endeavours have been set up in India with unfamiliar coordinated effort. India positions simply behind China with the world's second biggest populace at more than 1 billion individuals. Less than 1% of the populace right now possesses cars, which is a lot more modest extent than the remainder of the Southeast Asia area. India likewise has one of the quickest developing economies, and numerous U.S. organizations view India as a possibly rewarding business sector.

Rajalakshmi K, Ramachandran Dr. T. (2011) **Impact of foreign direct investment on India's automobile sector-with reference to passenger car segment**: FDI Inflows to Automobile Industry have been at an expanding rate as India has seen a significant financial progression over the course of the years as far as different enterprises. The vehicle area in India is developing by 18% each year. The fundamental benefits given by India in the vehicle area incorporate, trend setting innovation, cost-viability and effective labour. Additionally, India has a very much evolved and skilful Auto Ancillary Industry alongside car testing and R&D focuses. The car area in India positions third in assembling three wheelers and second in assembling of bikes:

T. Rajesh, A. S. Dileep (2013) **foreign direct investment in automobile industry**: The Foreign Direct Investment in Indian Automobile Industry has opened up new roads for the advancement of this significant area of Indian businesses. The advancement of government arrangements with respect to FDI in the auto business of India has expanded the extent of this industry. The primary FDI player in the Indian auto industry was Suzuki. In 1980s this organization went into a joint endeavour with Maruti Udyog, a state run undertaking. The then Indian government allowed this organization to enter the Indian auto market in 1983. In 1991, the public authority of India changed its arrangements in regards to the car business of India Foreign Direct Investment in the auto business of India was allowed. In 1993, FDI was additionally permitted in the traveller vehicle fragment of Indian car industry. This paper examination the headway up until this point made through FDI in Indian car industry.

Alfaro Laura (2003) **Foreign Direct Investment and Growth: Does the Sector Matter?** Despite the fact that it might appear to be normal to contend that unfamiliar direct venture (FDI) can pass on extraordinary benefits to have nations, this paper shows that the advantages of FDI shift significantly across areas by analysing the impact of unfamiliar direct speculation on development in the essential, assembling, and administrations areas. An exact examination utilizing cross country information for the period 1981-1999 proposes that complete FDI applies a vague impact on development. Unfamiliar direct interests in the essential area, nonetheless, will more often than not negatively affect development, while interest in assembling a positive one. Proof from the help area is ambiguous. The progress up until this point made through FDI in Indian car industry.

Ashish Verma, Vajjarapu Harsha, and Gayathri Harihara Subramanian **Evolution of Urban Transportation Policies in India: A Review and Analysis:** India's rising populace and vehicular proprietorship have prompted issues like gridlock, contamination, and street mishaps. The transportation area is a pivotal player in the nation's economy, and yet, it is likewise a huge supporter of environmental change. Since environmental change is a worldwide danger, most transportation strategies ultimately lead to taking care of the environmental change issue to accomplish manageable transportation. In spite of responsibilities from different nations, the fossil fuel by-products are coming up soon down and require the execution of aspiring strategies. Universally, nations are progressively investing more energy towards economical transportation through different approach drives, thus does India. Given the developing vehicle related externalities, the arrangement position of India towards metropolitan transportation is additionally continuously moving to frameworks come closer from supply-situated to request situated approaches. This paper features the huge transportation issues looked in India and how the Government of India's transportation area strategy intercessions for urban communities have developed since its freedom. The difficulties and holes in the current approaches are examined, and potential ways of outlining the strategies are introduced. This investigation discovers that most government strategy drives are still to see the planned degree of achievement. This is significantly because of absence of observing, complex institutional limits and metropolitan administration, unpredictable drafting of land and wasteful complete turn of events and portability plans.

Shivanshu Gupta, Neeraj Huddar, Balaji Iyer, and Timo Möller (2018), **the future of mobility in India's passenger-vehicle market:** India is relied upon to arise as the world's third-biggest traveller vehicle market by 2021. It took India around seven years to build yearly creation to 4,000,000 vehicles from 3,000,000. Be that as it may, the following achievement—5,000,000—is normal in less than five years. Hitting that imprint will rely upon the present quick monetary advancement proceeding, with a projected yearly GDP development pace of 7% through 2020, on-going urbanization, a thriving burning-through class, and steady guidelines and policies. With this development as a top priority, we set off to fabricate a point of view on the patterns moulding the Indian market, the incentive for the auto business in India, and objectives for winning on the lookout.

### **Factors causing slow growth**

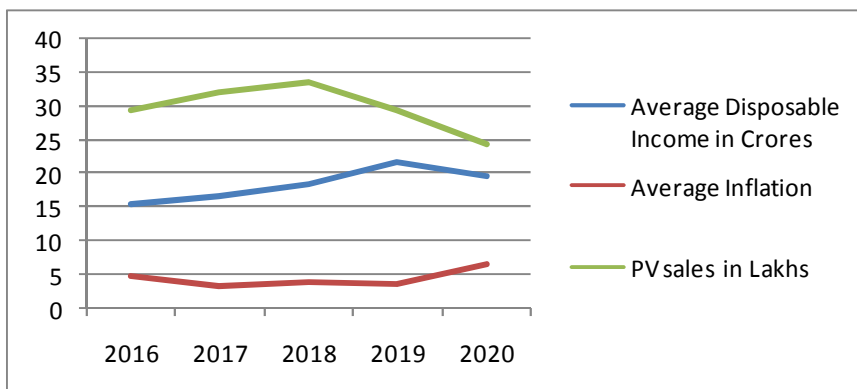
Whenever a segment of the market is taken for analysis it is very difficult to portray definitive reasons for its failure. Because the failure of a segment is not a quick process, it takes considerable time for depleting completely in to the segment and makes it to travel towards failure. Similarly PV segment also has faced the sluggishness for the past 3 years starting from 2018 and 2019 onwards (SIAMannual reports 2019-2020).

However it is very evident that few important factors that caused severe impact on the PV segment has been taken for discussion.

### **Reduced Disposable income**

The economic environment of India has been affected due to several economic reforms like Demonetization, implementation of GST and few strict norms advocated by RBI. These back to back policies did not adapt to the frequency of the economic activities. Eventually the creeping issues directly affected the liquidity parameter of the spending class and resulted in reduced spending or cautious spending. The increasing NPA issues also threatened the banks to step back from ease on vehicle loans policies. The interest rates, EMI rates and the consumer contribution also played their part in pulling down the free flow of money. So these reasons are very primitive in the role of slack in PV sales starting from 2019, 2020 (Vishnu prakash Misra)

**Chart 1: Relationship between Inflation, Disposable income and PV sales**



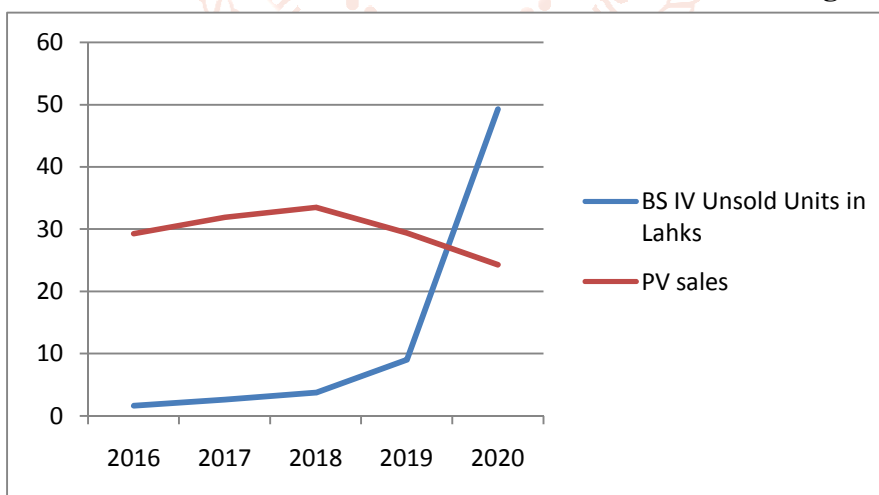
**COVID 19 impact**

Since the first lockdown implemented in India during March 2020 severely affected the manufacturers as well as dealers directly in carrying on with their business. The curbs, followed with spending issues, job loss and commuting problems creped one after another to add fuel to the on-going situation. The complete shut-down of logistics structure and health protocols disrupted the segment to its core. This is getting back on track with all possible actions. Not only the manufacturers and the dealers have been affected by this pandemic. But also the MSME players who were manufacturing spare parts and components for the vehicles severely affected by this issue and are looking forward to getting back on track. This factor is one of the major factors that impacted the PV sales in 2020 (Xavier susairaj)

**BS IV –VI transition**

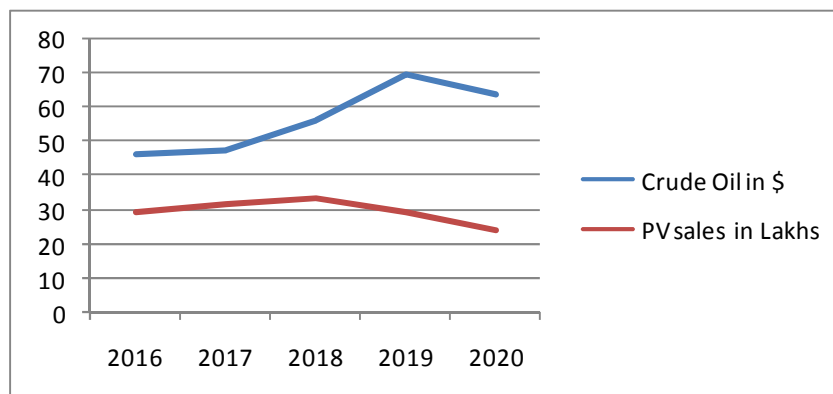
The government of India took a strong decision to tackle the climate change propaganda with stopping the registration of BS IV vehicles from March 31 2020 onwards. The manufactures have been riddled with lot of queries relating to present stock of vehicles and bookings and the manufacturers are not yet equipped to supply BS VI variants at the earliest. The dealers on the other hand who took early stock to meet the demand also raised their concern over the vehicles available with them. But certain policies have to be advocated in consideration of the future generations. Unfortunately this decision has adversely affected the manufacturers who were not ready for the BS VI production. This transition phase played a pivotal role in liquidity crunch for the dealers to take up stock of new variants (Prathyush Bhatt)

**Chart 2 shows - PV sales affected due to Ban on BS IV vehicle registration**



**Fuel prices**

The COVID 19 situation and world-wide financial crunch during 2019-2020 has escalated the cost of transport as well as extraction of fossil fuels. This has ultimately led to the steady rise of crude oil process throughout the world. India is not an exemption form this crisis. The prices of diesel and petrol have touched 100 mark and costs dearer for middle class to afford. Many have planned to make a shift towards public transport, EV and high mileage yielding vehicles. This scenario also haunted the purchase intention of middle class to rethink about purchasing of car for their family use. The fuel price surge is one of the predominant short range issues that is behind the slow growth of PV sales (Walter McManus)

**Chart 3: Reallationship between Crude oil price and PV sales**

### Semi-conductor shortage

Semiconductor is one of the pivotal requirements for a vehicle. In case of PV it is the most wanted component without which the assembly would be incomplete. China is the highest producer of semiconductors in the world. Due to power shortage and other operational issues china is facing acute production problems. It is unable to supply for its buyers. This has directly impacted the PV segment. The cars are assembled and waiting for chip installation. The manufacturers are unable to fulfil the orders on time. The delay in supply has created a negative impact on the industry and causes consumers to postpone the purchase activity. This has also elevated further and made the dealers to slow the sales process. So this factor is one of the predominant one that has impacted the PV sales in India during recent times.

### Level and Range of Impact

The level and range of impact that causes slow growth is computed based on simple three scale analysis. The components of the three scales are namely

- *Moderate* – Impact is within the controllable limit of the Industry and Government
- *Higher* – Impact is difficult to control by Industry and Government
- *Severe*–Impact id beyond the controllable limit of Industry and Government and requires immediate actions- (Hanley D Simple impact model – 3 scales)

Factor affecting sales	Level of Impact for Manufacturers	Level of Impact for Dealers	Range of Impact
BS IV – VI Transition	<b>Severe</b>	Higher	Long Range
COVID 19 Pandemic	<b>Severe</b>	<b>Severe</b>	Long Range
Disposable Income shortage	<i>Moderate</i>	Higher	Long Range
Fuel Price surge	<i>Moderate</i>	Higher	Long Range
Vehicle price surge	Higher	Higher	Short Range
Insurance Premium dearer	<i>Moderate</i>	Higher	Short Range
Semi-Conductor Shortage	<b>Severe</b>	Higher	Short Range

(Data computed based on SIAM, GOI and Various other agencies publications)

The range of impact as portrayed in the table above denotes severe category for manufactures on three instances namely COVID situation, BS IV transition and Semi-conductor shortage. This can be interpreted further; these three impacts pose a severe threat for the segment on the long range as well as short range. This implies that these above mentioned impacts have to be handled with immediate care and has to be addressed with crucial revival plans. The impacts that are mentioned as higher and moderate has to be handled at the earlier stage itself. From the above table impacts that have been mentioned are extracted from various sources and are highly relevant to the study. The prospects mentioned have been scrutinized carefully to fit for the subject area of the study.

### Government and Industry initiatives

The Indian passenger vehicle (PV) industry is relied upon to post an amazing development of 22-25% for FY2022, later a 2-4% de-development in FY2021. In the event that the development energy supported, the business could outperform prior top volume of FY2019 in FY2022, ICRA said in an assertion. The organization added that the semiconductor lack was a critical test in Q1 FY2022 as the auto business represented 12% of the worldwide semiconductor interest.

The public authority reported a large number of measures to launch India's auto area, which has been going through a droop for the beyond nine successive months, up until July. All BS-IV vehicles bought up

to March 2020 will stay functional for their whole time of enrollment, the Finance Minister said at a press meet today. 15 extra percent deterioration will be given on vehicles gained from this point until March 2020, taking the absolute devaluation to 30 percent. The money serve said that the public authority will likewise consider a 'scrapage policy', something which the auto business has been upholding for, to get ill-suited vehicles off the streets and hence increment the interest for new vehicles.

### Government initiatives:

In November 2021, the association government added >100 cutting edge innovations, including substitute fuel frameworks like compacted flammable gas (CNG), Bharat Stage VI agreeable flex fuel motors, electronic control units (ECU) for security, progressed driver help frameworks and e-quadra cycles, under the creation connected impetus (PLI) conspire for the cars.

- In September 2021, the Union Minister for Road, Transport and Highways, Mr. Nitin Gadkari reported that administration wants to make it obligatory for vehicle makers to deliver flex-fuel motors subsequent to getting the necessary authorizations from the Supreme Court of India.
- In September 2021, the Indian government provided warning in regards to a PLI plot for vehicle and auto parts worth Rs. 25,938 crore (US\$ 3.49 billion). This plan is relied upon to bring speculations of over Rs. 42,500 (US\$ 5.74 billion) by 2026.
- The Indian government has arranged ~US\$ 3.5 billion in motivations north of a five-year time span until 2026 under a redid plan to support creation and commodity of clean innovation vehicles.
- As of June 2021, Rs. 871 crore (US\$ 117 million) has been spent under the FAME-II plan, 87,659 electric vehicles have been upheld through motivations and 6,265 electric transports have been endorsed to different state/city transportation endeavours.
- In July 2021, India introduced the public auto test tracks (NATRAX), which is Asia's longest high velocity track to work with car testing.
- In Union Budget 2021-22, the public authority presented the wilful vehicle scrapage strategy, which is probably going to help interest for new vehicles subsequent to eliminating old unsuitable vehicles right now utilizing on the Indian streets.
- In February 2021, the Delhi government began the interaction to set up 100 vehicle battery

charging focuses across the state to push reception of electric vehicles.

- The Union Cabinet outlaid Rs. 57,042 crore (US\$ 7.81 billion) for vehicles and auto parts area underway connected motivating force (PLI) plot under the Department of Heavy Industries.
- The Government intends to foster India as a worldwide assembling community and a Research and Development (R&D) centre.
- Under NATRiP, the Government of India is intending to set up R&D focuses at a complete expense of US\$ 388.5 million to empower the business to be comparable to worldwide guidelines.
- The Ministry of Heavy Industries, Government of India has shortlisted 11 urban communities in the country for presentation of EVs in their public vehicle frameworks under the FAME (Faster Adoption and Manufacturing of (Hybrid) and Electric Vehicles in India) plot. The Government will likewise set up hatching community for new businesses working in the EVs space.
- In February 2019, the Government of India endorsed FAME-II plan with an asset prerequisite of Rs. 10,000 crore (US\$ 1.39 billion) for FY20-22.

### Conclusive Remarks

Since this sector is an money yielding box for the country, the Government and the manufacturers has to take all possible measures to revive this sector at the earliest. The situation may not pose a favourable wind, but the helm has to be held with in accordance to the tide and wind. The economy will continue to show bitter face for few more months. The initiatives should be categorized as short as well as long range to tackle it with much efficiency. The ministry is keenly watching the scrap policy for confronting the advocacy and renewal of old vehicles by the public transportation system. The incorporation of the policy mandated can bring in more positive vibes for the sector and will possibly bring about a turn for the sector to breath fresh air.

### References

- [1] Miglani S. (2019): The Growth of the Indian Automobile Industry: Analysis of the Roles of Government Policy and Other Enabling Factors. In: Liu KC. Racherla U. (Eds) Innovation, Economic Development, and Intellectual Property in India and China. Innovation, Economic Development, and Intellectual Property in India and China pp 439-463

- [2] Sagar, A. D., & Chandra, P. (2004): Technological change in the Indian passenger car industry (BCSIA Discussion Paper 2004–05): Energy Technology Innovation Project, Kennedy School of Government, Harvard University
- [3] Singh, J (2014), India's automobile industry: Growth and export potential: Journal of Applied Economics & Business Research: 4(4), 246–262
- [4] Narayana, D. (1989). The motorvehicle industry in India (Growth within a regulatory policy environment): New Delhi/Trivandrum: Oxford & IBH Publishing Pvt. Ltd. /Centre for Development Studies.
- [5] Navdeep Singh Thind, Dr. Manish Gupta, Dr. Vijay Kumar (2020), Slowdown in the Automobiles Sector in India: Causes and Suggestion, European Journal of Molecular & Clinical Medicine, Volume 07, Issue 07.
- [6] Xiaoping Dai, Yangang Wang, Yibo Wu, Haihui Luo, Guoyou Liu, Daohui Li, Steve Jones(2016), Reliability design of direct liquid cooled power semiconductor module for hybrid and electric vehicles, Microelectronics Reliability, Volume 64, Pages 474-478.
- [7] Ahmad, (2020) "Automotive Semiconductor Industry - Trends, Safety and Security Challenges," 8th International Conference on Reliability, Infocom Technologies and Optimization (Trends and Future Directions) (ICRITO): pp. 1373-1377.
- [8] Yongling Sun, Mark Delucchi, Joan Ogden(2011), The impact of widespread deployment of fuel cell vehicles on platinum demand and price, International Journal of Hydrogen Energy, Volume 36, Issue 17, Pages 11116-11127.
- [9] Kenneth A. Small, Kurt Van Dender (2007), Fuel Efficiency and Motor Vehicle Travel: The Declining Rebound Effect, Journal of the IAEE's Energy Economics Education Foundation, Volume 28: Pages 25-52.
- [10] Stefan L. Mabit (2014), Vehicle type choice under the influence of a tax reform and rising fuel prices Transportation Research Part A: Policy and Practice, Volume 64, Pages 32-42.
- [11] Ramesh war DA SHARMA, Sandeep JAIN, Kewal SINGH (2011): Growth rate of Motor Vehicles in India - Impact of Demographic and Economic Development, Journal of Economic and Social Studies, Volume 1, PP 137-150.
- [12] Pradeepta K. Sarangi, Shahin Bano, Megha Pant (2014): Future Trend in Indian Automobile Industry: A Statistical Approach, Journal of Management Sciences and Technology 2 (1), pp28-32.
- [13] Sumila Gulyani (2001): Effects of Poor Transportation on Lean Production and Industrial Clustering: Evidence from the Indian Auto Industry, World Development: Volume 29, Issue 7, Pages 1157-1177.
- [14] Pucher, John, et al (2004), The Crisis of Public Transport in India: Overwhelming Needs but Limited Resources, Journal of Public Transportation, 7 (4), PP1-20.
- [15] Vino, G., Watkins, S., and Mousley, (2003), "The Passenger Vehicle Wake under the Influence of Upstream Turbulence," SAE Technical Paper-01-0650.
- [16] Yesul Kim, Li Huang, Sunling Gong, Charles Q. Jia, 2016, A new approach to quantifying vehicle induced turbulence for complex traffic scenarios, Chinese Journal of Chemical Engineering, Volume 24, Issue 1, Pages 71-78.
- [17] Dr. Raju, Dr. Vinay Kumar, N V Mahesh (2020): AN ANALYSIS OF SLOWDOWN OF INDIAN AUTOMOBILE INDUSTRY, Sam Bodhi Journal, Vol-43 No. 03(I),
- [18] Haugh, D., A. Mourougane and O. Chatal (2010): "The Automobile Industry in and Beyond the Crisis", OECD Economics Department Working Papers: No. 745, OECD Publishing, Paris.