

Innovation and Market Share: Evaluating Maruti Suzuki's Growth in the Indian Market

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Companies plan to increase market share through innovation. Market share refers to the percentage a company controls of the total market for its products and services. Through process and product innovations companies try to capture their market share and maintain it by making their consumers loyal. In this article, the authors assess the continuously growing market share of Maruti from 38 per cent to 58 per cent from 2010 to 2021 through innovations – product, process, marketing and organisational and rein as the market leader in Indian automobile industry. The authors rely on Oslo Manual that focuses on four innovation categories - product innovation, process innovation, marketing innovation and organisational innovation as the methodological framework to assess Maruti's growing market share through innovation.

Keywords: Market, innovation, Maruti Suzuki, product innovation, process innovation, marketing innovation

The ability to innovate and to offer innovation effectively to the market will be critical factors of global competitiveness of countries, firms, organisations over the coming decades. Today, innovation performance is a determining factor of competitiveness. Miglani (2019) categorises growth path of the Indian automobile industry into four phases: very slow-paced growth- from 1950 to 1980; first wave of foreign direct investment (FDI)- from 1981 to 1991; second Wave of FDI-since 1992; fully de-licensed, free imports and 100% FDI allowed- since 2001. The major firms which gathered most of the market shares till the 1970s are Hindustan motors, Premier automobiles limited, Telco, Ashok Leyland, Mahindra & Mahindra (M&M), and Bajaj Auto. Very slow-paced growth, from 1950-1980 can be attributed to the economic backwardness of the nation, high import tariffs and compulsory manufacturing license. By the end 1970, government decided to introduce cars that could be reasonable for common man (Miglani, 2019). Before the arrival of Maruti Suzuki, Indian car industry was dominated by two players – Ambassador and Premier Padmini (popularly known as Fiat). The Ambassador was the first car to be made in India. Since it first went into production in 1957, the Ambassador was 'a taxi for many and a family car for the rich. It transported prime ministers, MPs and bureaucrats. It was truly India's national car, dominating the roads for decades'. The Premier Padmini was a four-seat saloon manufactured in India from 1964 to 2000 by Premier Automobiles Limited. Both cars found their decline with the advent

'AROnline. (2011, September 3). The cars : Hindustan Ambassador development story. <https://www.aronline.co.uk/cars/hindustan-motors/the-cars-hindustan-ambassador/>.

of more modern, cheaper and more fuel-efficient cars from Maruti Suzuki. The 1991 reforms of economic liberalisation allowed foreign car manufacturers to launch operations in India. Both Ambassador and Fiat tried to revive their sagging fortunes with updated models, but met with little success. Both cars lost its preeminent position to Maruti. (Premier Padmini ceased production in 2000; Ambassador continued till 2014).

During the second phase of 'first wave of FDI- from 1981 to 1991', government took steps to remove import barriers and allowed influx of foreign direct investment (FDI). The agreement between government owned MarutiUdyog Limited (MUL) and Suzuki Motor Corporation (SMC) to produce people's car was one of the most important events of this phase. According to Miglani (2019) Toyota, Mitsubishi, Mazda, and Nissan entered the market for light commercial vehicles through joint ventures (JVs) with Indian companies in the 1980s. The significant change that happened during the 'second wave of FDI-since 1992' was the abolition of auto licensing. In 1997, government of India allowed automatic FDI approval of joint ventures with a 51 per cent majority share for the foreign companion. Since 2001, automotive industry has been completely de-licensed and free imports are allowed for automotive components (Miglani, 2019). Mammen (2017) categorises Indian automobile industry as a 'sunrise sector', because of its fast-growing nature by occupying top positions in passenger car market and two-wheeler market. According to Mammen (2017), the contribution of automotive sector cannot be confined to revenues and profits, as it has brought quality products and process in Indian market.

Maruti Suzuki, became 'the new king of Indian roads' replacing Ambassador and it continues as the dominant player in Indian car market for the past 39 years. Started in 1981 as MarutiUdyog Limited, signed a joint venture in 1982 with Japanese automobile company, Suzuki. In 1983, they launched Maruti 800 and from 1983 till now, Maruti has remained as India's favourite brand. Maruti 800 was the number one selling vehicle from 1985 to 2004. In 2005, Alto came to the first position and its reign lasted till 2017 when Dzire occupied the first position. Maruti Suzuki India Limited's (MSIL) story is a fascinating one and their innovative capabilities and efforts are one of the reasons for their continuous growth in domestic market share. Through several innovations, Maruti has also occupied a good position in international export and market also. Maruti Suzuki exported to 125 countries in Europe, Asia, Latin America, Africa and Oceania in 2016. Among them are the highly competitive and mature European auto markets like the Netherlands, Germany, France, Italy and UK. According to Maruti Suzuki Annual Report 2017-2018, the annual export was 126, 074 Units. During the financial year 2019-2020, company exported 102,171 vehicles to over 100 nations, registering a drop of 6 per cent (MSIL Annual Report 2019-2020). The politico-economic uncertainties and increased protectionism in some of the export markets affected the sales. Exports to Latin American continent were unpleasantly affected due to socio-political unrest and huge currency depreciation in some of these countries. Restrictions on vehicle financing and the prevalence of used car market are the challenges for Maruti Suzuki in SAARC nations. The decline in sales was curtailed to some extent by increasing the exports to Africa and the Middle East. South Africa emerged as one of the growing markets for the company even during a total decline of 6 per cent in exports. The global outbreak of COVID-19 pandemic severely affected the export as well as

domestic performance. The present paper is a modest effort to study the innovations in Maruti Suzuki and their growth in domestic automobile market during the last decade along with analysing the impact of innovations for Indian Customers. Innovation is regarded as a multi-stage process whereby firms convert ideas into novel/enhanced products, service or processes, for progressing, contesting and distinguishing themselves productively in their marketplace (Baregheh, Rowley & Sambrook, 2009). Maruti, which has been 'progressing, contesting and distinguishing themselves' through this multi-staged, multi-faceted innovation in the Indian car industry has been unique.

Innovation and Market Share

When Joseph Schumpeter (1934), the Austrian Economist and pioneer in innovation studies, defined innovation as a "means to generate or practice something new", one of the major categories he considered as the result of innovation was opening of new market. Other categories included: establishment of a novel product or a qualitative transition of an existing product; process innovation, which is novel for a business sector; development of new resources and change in the organisation and management. Reguia (2014) states innovation as a feature that determines the success of economic companies and it helps to reach customer satisfaction and customer desire. She further says, capacity in developing competitive advantages through product innovation is a critical factor that defines the success and continuance of firm. The firms which maintain and improve their position in market are the first to introduce incremental product innovations or regularly implement innovations presented by their opponents (Freeman, 1982). If a firm fails to innovate and finally suffer declining market share and eventually incline to exit the industry, either by closing their businesses or by selling them to other incumbents (Banbury & Mitchell, 1995). Robinson (1990) says relative product advantage is an important innovation characteristic and major product advantage produces major market share rewards whereas moderate advantage generates moderate market share. Nelson & Winter (1977) says innovations lead to major developments in price of the product. According to Cohen et al (1984) product refinement has a significant role in established industries for their survival in market performance. Bloom and Kofler (1975) identify four effective strategies for market share: product innovation, market segmentation, distribution innovation, and promotional innovation. The most effective way for having a greater market share is product innovation and companies such as Xerox, Zenith and Polaroid made better market share because of their product innovation. Innovation requires a good analysis of needs and preferences of market. Market segmentation is the second strategy for market share. Distribution innovation plays an important role in the same. The most prominent reason for the success of Timex as a manufacturer was distribution innovation; distributing their watch through unconventional outlets. Promotional innovations such as a clear, clever, and different campaign are important for acquiring significant share in the market. Among these strategies, "the best defense for maintaining market share is a good offense-product innovation'. The development of new products, new and improved customer services, novel channels of distribution and cost reducing process are important for being competitive in the market.

Fagerberg (2006) says that to have the capacity to transform an invention into an innovation, a firm normally requires merging different types of awareness,

capabilities, skills and resources. The firm requires manufacturing knowledge, skills and facilities, market knowledge, an efficient distribution system, adequate financial resources, and so on. Product and process innovations are vital to the development and expansion of any company. Any improvement to current manufacturing, delivery, packaging, marketing, project management, etc. can be considered as process innovation. Product innovation is often linked with new product development. A good or service that is novel or significantly upgraded is categorised as product innovation. Important upgradation includes improvements in technical specifications, components and materials, software in the product, user friendliness or other functional features. A new or considerably improved production or delivery method comes under process innovation and it can be important changes in techniques, technology, equipment and/or software. An innovative marketing method including noteworthy modifications in product design or packaging, product placement, product promotion or pricing is defined as 'marketing innovation'. Organisational innovation comprises new organisational method in business practices, workplace organisation or external relations of firms. Banbury and Mitchell (1995) summarise incremental product development and speedy product introduction as important determinants of business performance. Introducing incremental product innovations strongly influences an industry's market share. According to Banbury and Mitchell (1995), the firm to introduce incremental product innovation will have more market share. The earliest introduction of incremental product innovation of other firms by a particular company has minor positive relationship with greater market share. The ability to support innovative products in the market is more important than mere introduction of technically innovative products. They further say that technological alteration has a greater role in supporting national growth, and individual firm competitiveness.

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Oslo Manual (2005) considers innovation as essential to the growth of output and productivity of firms and business enterprises. Oslo Manual, which defines innovation as "the implementation of a new or significantly improved product (good or service), or process, a new marketing method, or a new organisational method in business practices, workplace organization or external relations" (p.46) also focuses on four innovation categories: product innovation, process innovation, marketing innovation and organizational innovation. It identifies a series of scientific,

technological, organisational, financial and commercial activities and upgradations as Technological Product and Process (TPP) innovations. They include technologically implemented novel products and processes and major technological enhancements in products and processes. The purpose of organisational innovations is to increase the performance of firms by reducing administrative and transaction costs, increasing labour productivity by improving workplace satisfaction, and decreasing supply cost. The strategic decisions taken by the management are critical for the organisational innovations of the firms. Organisational innovations in business practices include “the implementation of new methods for organising routines and procedures for the conduct of work”. The introduction of novel methods for allocating responsibilities and decision-making employees for the separation of works are also organisational innovations. New types of collaboration which include collaborations with research organisations, customers, other firms, and outsourcing and sub-contracting of business are also organizational innovations (Oslo Manual, 2005, p. 51).

In our discussion, we will be focusing on the automobile sector, by taking Maruti Suzuki as a case study. Innovation significantly varies across sectors in terms of characteristics, sources, actors involved, the boundaries of the process and the organisation of innovative activities; a comparison based on these actors in different sectors (e.g., in pharmaceuticals and biotechnology, chemicals, software, computers, semiconductors, telecommunications or machine tools) shows striking differences (Malerba, 2005). Moreover, sectoral innovation system analysis gives more priority to the dynamic of technology development and technology firms in a specific sector than national innovation systems (Mammen, 2017). For this, we will be following the Oslo Manual (2005) categorisation of innovations for interpreting innovation data of the firm Maruti Suzuki. Oslo Manual measures both scientific and technological activities of firms and it is a tool of analysis that helps to capture changes. Innovation is simply about changes happening in a society or a firm and by using this categorisation; we can study the innovative performance of Maruti Suzuki which is considered the king of the Indian passenger automobile industry.

Maruti’s Growth in Domestic Market (2010-2021)

Globalisation has strengthened the Indian automobile sector, as it offers a wide range of choices for the Indian customers due to the entry of multiple actors to the sector (Mammen, 2017). The first wave of FDI from 1981-1991 saw the joint venture agreement between the Indian government and Suzuki Motor Corporation (SMC). The entry of SMC was the result of government’s intention to produce compact cars with good fuel efficiency and low cost (Motohashi, 2015). Growth in domestic market is the key determinant of any firm’s total achievements and growth. Maruti’s domination began in the Indian market, in 1985, with the increasing popularity of Maruti 800. By 1986, Maruti had above 40 per cent share, with Maruti 800 and Premier Padmini occupying the top position in the Indian market. In 1993, market share of Maruti increased to 48.8 per cent and its model Maruti 800, had 29.8 per cent market share. In the years, 1996 and 1997, Maruti had a market share of 52.5 per cent and 55.1 per cent share respectively. MSIL has accounted for more than 35 per cent of market share in Indian passenger car market for more than 20 years. The growth of MSIL in the last decades and its market share are given in following chart and table.

TABLE 1. Maruti Suzuki's Market Share 2010-2020

Year	Industry Sales	Company Sales	Market Share
2010	26,70,943	10,18,365	38.13%
2011	28,91,997	12,71,005	43.95%
2012	32,06,794	11,33,695	35.35%
2013	29,84,267	11,71,434	39.25%
2014	29,31,177	11,55,041	39.41%
2015	31,17,550	12,92,415	41.46%
2016	33,45,460	14,29,248	42.72%
2017	36,70,028	15,68,603	42.74%
2018	39,83,507	17,79,574	44.67%
2019	35,28,040	18,62,449	52.79%
2020	26,92,344	15,63,297	58.06%

Source- Society of Indian Automobile Manufacturers (SIAM)

Approximately there is 20 per cent increase in the market share of Maruti Suzuki in the Indian market from 2010 to 2020. Lowest market share of Maruti was in 2012, 35.35 per cent, and highest in 2020 as 58.06 per cent. From 2012 onwards there is a steady growth in MSIL's market share and registers maximum growth during the 2018-2019 from 44.67 per cent to 52.79 per cent. Having a market share of 35 per cent consistently for one decade is a great achievement for Maruti Suzuki, despite immense competition from other players like Hyundai, M&M, Tata, Toyota, Honda and Renault.

FIGURE 1. Industry and Company Growth



Source- taxguru.in

From the above diagram it is clear that from 2011 to 2020, except in 2012, company has outperformed the market in terms of growth. 2020 is marked for slowdown of

auto sector due to two reasons: the outbreak of COVID-19 pandemic and the implementation of BS-6 norms. Even under these circumstances company has performed better than market and recorded 16 per cent drop as against 23 per cent decline in the market. In the year 2012 company growth declined to -10.80 per cent, whereas industry had growth of 10.89 per cent. On the contrary, in 2019, industry had negative growth, whereas company managed to perform well with a positive growth of 4.66 per cent.²

Maruti provided a variety of variants. Interestingly, the lowest model was popular initially; but as the nation experienced economic growth and the consumers' pockets burgeoned, low cost models were replaced by high cost models. Maruti 800 was the most popular brand initially leading the Indian roads. Other popular models included Wagon R and Alto. Later Maruti Alto became a threat for the company's own 800 model which was a market leader for last 20 years. This trend continued resulting in the surpassing of Maruti Alto over Maruti 800 in 2005 and Alto became the most selling brand till 2011 (Thakkar, 2015). From 2011 to 2013, Swift, DZire and Wagon R also performed better along with Alto. In 2018, another interesting thing happened 'MarutiDZire ends 13 years of Alto reign'; this was the second time Maruti witnessed its own vehicle occupying the top position by breaking the reign of its own other models. The other two were the Maruti 800 from 1985 to 2004 and Maruti Alto from 2005 to 2017.

TABLE 2. Segment wise Market Share of Different Companies (in %)

<i>Segment</i>	<i>Maruti</i>	<i>Hyundai</i>	<i>M&M</i>	<i>Tata</i>	<i>Toyota</i>	<i>Honda</i>	<i>Renault</i>
Entry Hatchback (%)	8.2						1.5
Compact Hatchback (%)	6.6	2.3		8	1		
Premium Hatchback (%)	5.2	3.1		2	7	2	
Compact Sedan (%)	5.9	9	0.3	5	4	1.9	
Executive Sedan (%)	3.0	2.5			4	2.5	
Premium Sedan (%)		1.0			1.2	4.4	
Luxury Sedan (%)					3.1		
Compact SUV (%)	3.2	2.7	1.4	1.2		3	
Mid-SUV (%)	4	2.9	1.8	5			3
Premium SUV (%)		3	4		5.2	4	
MUV (%)	4.0		2.6	0.8	1.9	0.7	1.2
Van (%)	10.0						
Lifestyle Off roader (%)	1.1		8.9				
Total (%)	51.3	17.6	6.5	4.8	4.1	3.7	3.2

Source- Table worked out from data given by Autopundit

²According to Statista Research Department (2021), Maruti Suzuki had the highest share in the passenger car market across India in 2020 with more than 50 percent. The top three players (Maruti, Hyundai, and Tata) held approximately 75 percent of the market share. Kia, Mahindra, Renault, Toyota, Honda, Ford, MG occupy positions from four to ten respectively in market share.

The above table shows the segment wise market share of different automobile companies in India. Hyundai also performs well in Compact Hatchback, Premium Hatchback, Executive Sedan, Compact SUV, Mid- SUV segment with second best market share in these segments. There is no competitor for Maruti in van segment; Maruti Eco has 100 per cent market share. Mahindra occupies 89 per cent share in lifestyle off roader section, whereas Maruti has 11 per cent share. Maruti has no vehicles and share in categories like Premium Sedan, Luxury Sedan and Premium SUV. Toyota is leading the market share in these two segments with 52 per cent in Premium SUV and 31 per cent in luxury sedan. Maruti has 51.3 per cent total market share, whereas the second and third leading companies like Hyundai and M&M have only 17.6 per cent and 6.5 per cent share respectively. Maruti has predominance in eight segments out of total thirteen segments in market share. Maruti Suzuki vehicles have occupied all the top 5 selling positions in India since 2017-18. Alto, WagonR, Swift, Baleno and Dzire have been the best 5 selling cars for all these 4 years, which according to them is the result of 'persistent support from customers' (The Financial Express, 2021).

Product Innovation at Maruti

Product innovations are either the use of new knowledge and technologies or the use of new combinations of previous knowledge or technologies. The introduction of new goods and services is part of product innovations. New products are defined as the "goods and services that differ significantly in their characteristics or intended uses from products previously produced by the firm" (Oslo Manual, 2005, p. 48). Some of the examples for product innovations are the introduction of ABS braking, GPS in vehicles, and sub-system improvements in automobiles. The addition of new functions to existing services or the introduction of completely new services are examples of product innovations in services. Design plays an important role in the development of product innovations. According to Seth (2009) global automotive market has been ruled by a simple rule "Old models get substituted by new models". With a view to cater to the demand of all types of customers, Maruti Suzuki offers 15 car models ranging from Maruti Alto to the Maruti Suzuki XL-6.³ Maruti offers various brands which include Alto, S-Presso, Eeco, Celerio, Wagon R, Ignis, Celerio X, Swift, Baleno, Dzire, Vitara Brezza, Erica, S-Cross, Ciaz, XL6. Maruti Suzuki has about 150 variants among these 15 models. These different variants keep their sales further up.

Every product has at least 4 models, which cater to all types of customers and it helps them to capture and dominate the market, and the automobile industry in India. The strategy of pricing of Maruti cars is strongly related to the variants of each of the model. Each variant represents a variant product in a model, and hence could be considered as product innovation. Nevertheless, the variation among models was slight; but it is strongly related to the strategy of pricing. For instance, Maruti offers different car models with a price range 2.99 lakhs (Maruti Alto 800) to 12.39 lakhs (Maruti S-Cross). A further variation of 2.99 to 4.60 lakhs price range is provided in Alto (the lowest priced model), to ensure a dominant market share in

³Fifteen models include 8 cars in Hatchback category, 2 cars in MUV category and one each in SUV category, Sedan category, Minivan/Van category, Compact Sedan category, and Compact SUV category.

the lowest product category. This innovative strategy in product variants make Maruti Suzuki comparatively cheaper than other companies like Honda, Toyota and Tata Motors.⁴ The cost of petrol/ litre in India is among the highest in the world when measured in terms of purchasing power parity (PPP). India meets its domestic oil demand mainly through imports. Despite a sharp decline in international crude prices, in India it continues to soar. The Union government levies excise duty and cess on fuel, and states levy a value added tax (VAT) which make selling price of petrol high. This prompts the Indian car manufacturers to make attempts to improve mileage for having an edge in the domestic market. They have produced wide range of fuel-efficient cars with affordable price in India through their continuous product innovation (Mammen, 2017).

TABLE 4. Maruti Suzuki's- Number of Models, Price range, Mileage- Comparison with other leading companies

	<i>Maruti Suzuki</i>	<i>Hyundai</i>	<i>Toyota</i>	<i>Tata Cars</i>	<i>Kia</i>
Mileage Range	16.11-24.12 km/l	12.95-25.4 kmpl	10.52-23.87 kmpl	14.08-23.84 kmpl	14.11-24.1 kmpl
Number of products	15	12	7	9	3
Price Range	2.99 lakhs-12.39 lakhs.	4.76 Lakh-23.97 Lakh	7.34 Lakh-89.90 Lakh	4.99 Lakh-22.01 Lakh	6.79 Lakh-33.95 Lakh

Source- <https://www.cardekho.com/>

All five companies have good fuel efficiency cars with models offering a mileage above 21 kmpl⁵ but Maruti's lower price range attracts Indian customers more. Mathai (2021) lists Maruti Suzuki's models Dzire, Baleno, Alto, Swift, S-Presso, WagonR, Celerio as the nation's highest-rated petrol cars in terms of fuel efficiency. As indicated in above table, Maruti cars offer a mileage above 15 km/l. The price range of Hyundai

⁴In March 2018, Toyota and Suzuki had concluded a basic agreement for supplying hybrid and other vehicles to each other in the Indian market. As per the agreement, Suzuki were to supply premium hatchback Baleno and Vitara Brezza to Toyota, while Toyota had to provide Corolla sedan to Suzuki. This agreement, for instance, enabled Toyota to rebadge Vitara Brezza as Urban Cruiser for the Indian markets. The Urban Cruiser is essentially a redesigned Maruti Suzuki Vitara Brezza. This means it offers the same space as Vitara Brezza. However, the Vitara Brezza is priced between Rs 7.51 lakh and Rs 11.41 lakh (ex-showroom Delhi), which is sold in four trims: LXi, VXi, ZXi, and ZXi+ and is offered in 9 variants, whereas Toyota Urban Cruiser is priced at Rs 8.40-11.30 lakh (ex-showroom, Delhi) and is available in three trim levels- Mid, High and Premium. The ex-showroom starting price of the Urban Cruiser is a little over a lakh rupees more than that of the Vitara Brezza, because the former isn't being offered in a bare-bones variant. This indicates pricing as a marketing strategy of Maruti for the price-sensitive Indian car markets.

⁵Maruti Alto 800, Maruti S-Presso, Maruti Celerio, Maruti Wagon R, Maruti Ignis, Maruti Celerio X, Maruti Swift, Maruti Dzire and Maruti Ciaz offer a mileage of 20 kmpl and above. Economic times (2016) published a list of 17 cars with mileage over 25 km/l in India in 2016 and six out of seventeen cars were Maruti's product and they are Maruti Ciaz Smart Hybrid Vehicle by Suzuki (SHVS), Maruti Celerio diesel, Maruti Baleno diesel, Maruti Swift Dzire diesel, Maruti Swift diesel and Maruti Alto K10 CNG. Car Blog India identified Top Twenty-Five Fuel Efficient Indian Cars; seven cars belong to Maruti Suzuki.

and Tata are somewhat comparable with Maruti Suzuki as both firms have cars under 10 lakhs. But the combination of the three factors – number of models, better mileage range, and better price range than its competitors like Hyundai, Toyota, Tata Motors, and Kia, makes Maruti Suzuki more attractive. To reduce weight and improve mileage further, MSIL gives primacy to high-tensile steel as an essential material for manufacturing.⁶ There is more focus currently on the change to plastic as in the case of air intake and fuel tanks, which has already become generally accepted. For example, the intake manifold of the new Alto 800's engine has been changed to plastic, replacing the aluminum. This has resulted in the high volumetric efficiency and lowering the weight.

MSIL adopted this Total Effective Control Technology (TECT) concept from parent company Suzuki. This helps to realize stable handling and great fuel economy. The Economic Times (2017), highlights the outcome of TECT as more safety cars with new crash-test standards. "Suzuki's Total Effective Control Technology (TECT) is a model, for the occupant-protecting impact absorption and low weight". For each of its passenger car models, the Company offers variants that come equipped with enhanced safety features." (MSIL Annual Report 2015-2016). Maruti launched K series engines which are highly fuel efficient and low on Carbon dioxide emissions. K-series engine is the newest innovation coming from Suzuki Motor Corporation's focus of maximizing the environmental benefits of fully proven technologies. K series engines are fuel efficient and low on CO₂ emissions.

Alternate Fuel Technologies

Kowalewicz & Wojtyniak (2005) define 'alternative fuels' as energy sources that are not of petroleum origin. Some of the advantages of alternate fuels over petroleum products are high heating value, lower emissions, and diversification of sources. Liquefied natural gas (LNG), liquefied petroleum gas (LPG), methanol, biofuel and hydrogen are the most commonly used alternate fuel technologies. Maruti Suzuki, was the first company to introduce factory-fitted CNG cars in India with the intention of promoting clean fuel. New innovative ideas were tried towards improving fuel efficiency and bringing down emissions per car in 2014-15: a) introducing modifications in engine hardware to increase thermal efficacy and engine calibration. b) improved aerodynamic styling and weight reduction initiatives. c) making the combustion chamber compact. d) enhancing the compression ratio on gasoline engines. e) adoption of an innovative thermal management system along with low friction engine oil. Innovation enabled them to bring CNG, and other green initiatives. Gupta (2020) considers Maruti Suzuki's S-CNG as a way to address price rise in petrol and diesel prices for the middle-class car owners as well as the initial huge investment on electric vehicles. The S-CNG vehicles are equipped with

⁶The company has upped the usage of high tensile- steel in car bodies. World Steel Association (n.d) says usage of high tensile steel in vehicles make up as much as 60% of today's vehicles body structures making lighter, usage of high tensile steel enhance safety and increase fuel efficiency. Increased use of recyclable materials in vehicles, leading to lower negative impact on the environment is a landmark step as sustainability is concerned. For example, at the time of its introduction the recyclable rate for the A-Star was 87 %, and the recoverable rate was 96 %, at par with global standards.

intelligent injection system.⁷ Maruti Suzuki is working with hydrogen as 'interesting alternative' for future (The Economic Times, 2021). Smart hybrid is an innovative technology that helps increase fuel efficiency and improve driving performance. When idle, engine automatically stops and silently starts when the optimal conditions meet both transmissions.⁸ Three competitors of Maruti - Tata, Mahindra, and Hyundai - have vehicles in electric segments, which is a challenge. Maruti believes that bringing electric vehicles into the Indian market does not make sense till battery technology, charging infrastructure and financing improve in India (Gupta, 2020).

Process Innovation

Process innovations aim to reduce 'unit costs of production and delivery, to increase the quality of production and delivery'. Introduction of new automation equipment, software, and techniques on producing or the introduction of computer-based design for development of new products, new delivery methods, are examples of process innovation. Introduction of new automation equipment, software, and techniques on producing or the introduction of computer-based design for development of new products, new delivery methods, improved ICT technology intended to improve the efficiency and quality of auxiliary activities of any firm are examples of process innovation (Oslo Manual, 2005). Maruti Suzuki India has introduced a series of product innovations and process innovation that contain emission and lower water use. According to Business Standard (2018) in 2017-18, MSIL has reduced water consumption per vehicle manufactured by 6 per cent against the previous year and 1 per cent reduction in CO₂ release while producing each automobile over the past year in its industrial facilities. India CSR Network (2018) says use of Maruti Suzuki's Dry Wash system, resulted in saving 285 million liters of water in 2017-18.⁹ In 2017, twenty out of their total 110 patents were in the production line alone and this was the result of their young engineer's commitment to process innovation (Singh, 2017).

The Government of India in February 2016, decided to leapfrog from BS IV to BS VI emission norms and from 1st April, 2020 onwards, only those vehicles fulfilling the stringent emission norms in place can be sold in the market (Economic Times, 2019). Maruti became the first automobile manufacturer in India to bring BS VI compliant vehicles in the mass segment, ahead of statutory time-lines, by launching

⁷S-CNG gives enhanced safety for the customers by providing Stainless Steel pipes and joints which is free from corrosion, integrated wiring harness which eliminates any chance of short circuits, micro switch which guarantees that car goes-off and does not start during CNG fuel filling process. Alto, Celerio, Wagon R, Ertiga, S-Presso and Eeco are the models that came out with S-CNG technology See www.marutisuzuki.com/corporate/technology/cng

⁸The high capacity cells (dual battery setup including a Lithium Ion Battery) store the energy formed during braking to assist the engine's idle start-stop and the torque assist functions. The energy stored in the Lithium-ion battery helps during acceleration which assists engine in providing optimal acceleration and performance. The smart hybrid technology helps reduce emissions by saving fuel consumption and also keep environment clean and green. Ertiga, Ciaz, S-Cross, Baleno, XL-6 and Brezza use Smart Hybrid Technology (Cardekho (2019).

⁹According to the statistics nearly, 3 million vehicles used Dry Wash system for cleaning in 2017-18. In 2017-18, Dry Wash system was available in 588 Maruti Suzuki workshops across 186 cities in India (India CSR Network, 2018).

BS VI versions of the Alto and the Baleno in April 2019. Maruti sold 775,340 units of BS VI compliant vehicles during 2019-20, which comprised around 50 per cent of domestic sales. According to Economic Times (2019) Maruti sold 2 lakh BS-VI vehicles in 6 months after the introduction of BS- VI vehicles. This shows customers' preference of new and innovative technologies. First introduction of new technologies in a market always helps the company to increase its market share.

Scroll (2017) reported that Maruti had taken efforts to partially replace manpower with robots at its Manesar and Gurugram plants for functioning in the automated weld, paint and press shops. The robots deployed are C-series robots bought from the Japan-based Fanuc Robotics. One of the advantages of this C series robots is 15 per cent more efficiency than predecessors. They had 2,500 robots at the Manesar facility and a total of 5000 robots including the Manesar facility (Scroll, 2017). Raj (2017) articulated that MSIL had one robot for every four factory workers at its car plants, indicating increasing mechanisation in their manufacturing sector. According to Malhotra (2019), Maruti was undergoing, mass adoption of Robotic Process Automation (RPA) in the areas of finance, and supply chain. Additionally, they have introduced the AI-Enabled Chatbot for HR Support, Industry 4.0 adoption and Data-Driven Decisions Using AI and Analytics (Malhotra, 2019). RPA for quicker turnaround and lower error rates enabled them to automate most of the routine works and processes. Hindustan Times (2020) says Maruti's Mobility and Automobile Innovation Lab (MAIL), is a platform to find technology driven, futuristic solutions in the mobility & automobile space, which are innovative and customer-oriented. Through this initiative, they aim to bring startups working for mobility & automobile software in India to the mainstream. Maruti Suzuki had collaborated with 18 startups selected by the Mobility & Automobile Innovation Lab' (MAIL) programme till 2020 (2020).

Marketing Innovation

Marketing includes advertising (product promotion and placement, packaging of products), direct marketing (telemarketing), exhibitions and fairs, market research and other activities to develop new markets, pricing strategies and methods sales and after-sales activities, including help desks other customer support and customer relationship activities (Brown, 2008). The aims of marketing innovations are effective addressing of needs of customers and opening up of new markets. Marketing innovation also includes changes in product design like changes in the packaging of products that do not alter the functional and user characteristics of products. The use of "product placement in movies or television programs, or the use of celebrity endorsements" is marketing innovation. Branding and presentation of products to the exact requirements of individual consumers can also be counted as marketing innovation (2005). The 'introduction of a new method which allows customers to choose desired product specifications on the firm's web site and then see the price for the specified product' is also part of marketing innovations (Oslo Manual, 2005). Oslo Manual (2005) identifies the objectives of marketing innovation as effective addressing of needs of customers and opening up of new markets. The use of "product placement in movies or television programs, or the use of celebrity endorsements" (p. 50) and branding and presentation of products to the exact requirements of individual consumers are examples of marketing innovation. Maruti Genuine

Accessories, Maruti Driving School, Maruti Insurance, Maruti Auto Card, Maruti Genuine Parts, Maruti True Value and Maruti Finance are examples of wide product range of MSIL related to every aspect of Auto sector. It tries to build its brand in every sphere, from learning driving, to buying a new car and to sell it in the second-hand market (See table). Through its service centers and advertising, it wants to create brand loyalty.¹⁰ Mammen (2017) considers Maruti finance as an example of how finance can be linked with innovation. The Indian Express (2020) says smart finance helps clients to relate and to make decisions on various possibilities regarding car loans and offers from different financiers.¹¹

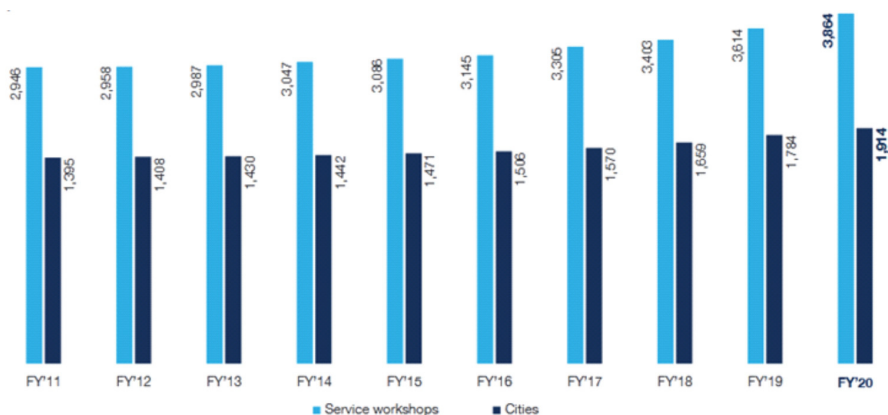
Large service networks of Maruti Suzuki are an example of marketing innovation and innovation in services. It has 3,864 service garages functioned across 1,914 cities and providing to over 1.7 million customers per month. Some workshops offer seven-days-a-week and night services to customers for giving them flexibility of availing services as per their convenience (Maruti Suzuki Annual Report 2019-20). Mammen (2017), states large service network of Maruti Suzuki is an innovative way of attracting customers.¹² Maruti gives a message that if you desire to service your vehicle, do it only at Maruti Suzuki service station. Hyundai has only 1200 service centers and workshops in India across various states and Union Territories in India (Prokerala. (n.d.)), whereas Tata Motors has only 711 service stations across 475 cities in India (Cardekho. (n.d.)). Hence, there is no comparison between the service networks of Maruti with other leading companies like Hyundai, Tata, and Toyota. Maruti has thrice the number of service garages than Hyundai and five times than Tata.

¹⁰In one of the Maruti's advertisements a small baby was presented crying. Initially all relatives of the baby except the mother tried to stop the baby from crying but were failed in that. Finally, when the baby touches her mother's hand, started laughing. The ad completed with the voiceover- "Bring your Maruti only to the Maruti Suzuki Service Network"

¹¹Benefits of Maruti finance are one stop shop for customers' requirements, extensive choice of financier, distinctive offers and benefits and creating customer delight. Maruti Finance is currently available in top 30 cities for salaried customers. Through this innovative step, Maruti had assumed the role of facilitator between the financier and the customer. Maruti launched Maruti Finance in January 2002. Prior to this, Maruti had started two joint undertakings Citicorp Maruti with Citi Group and Maruti Countrywide with GE Countrywide to assist its client in obtaining loan. Maruti linked with ABN Amro Bank, HDFC Bank, ICICI Limited, Kotak Mahindra, Standard Chartered Bank, and Sundaram to provide car finance. Maruti launched Maruti insurance in 2002 and later in 2012 it was renamed as Maruti Insurance Broking Private limited. Some of the benefits of Maruti Insurance are cashless accident repairs, hassle free service across 450 plus cities in India, easy claim settlement, quality repairs at authorized stores and instant policy issuance (Maruti Suzuki. (n.d.)). Innovation in services "extends beyond the service sectors to affect service activities in all sectors of the economy" (Miles 2005).

¹²Maruti Suzuki in one of its TV ads presents an interesting advertisement. Maruti car comes and stops before four men sitting at a crossroad in a desert. Man, inside the car asks them about nearest Maruti Suzuki's service station, after his question speedily all the sited men's stands up and shows the different directions in answer. The person confused and laugh himself indicating that Maruti Suzuki's service station is everywhere. This innovative advertising strategy of Maruti Suzuki's Service Network is a critical factor helps them to market their products, there attractive and catchy advertising strategies have a huge impact on the customers. Through this advertisement the company tried to highlight that Maruti Suzuki's strong and wide service network is available everywhere even at a sandy area i.e. Desert. One of another catchy TV Ad launched by Maruti Suzuki about its service network in 2009.

FIGURE 3: Maruti Suzuki's- Expansion of service workshop network



Source: Maruti Suzuki Annual Report (2020-2021)

The above figure shows a continuous expansion of Maruti Suzuki's service workshop network. Within a gap of ten years, they have opened more than 900 service workshops. Interestingly in past three years, they have an increase of around 400 service workshops and around 250 cities. The widest and deepest service networks, easy access to service centers are some examples of service innovations as they help the customers.

The company has developed a Doorstep Service Facility, with 126 specially designed 'Service on Wheels' workshops; this facility has been made available in 112 cities across India. Moreover, Maruti Mobile Support (MMS) vehicles are providing servicing facility at the doorstep of customers mostly in areas far from the existing service infrastructure. They have launched Quick Response Teams (QRT) to deliver emergency support to customers stranded due to vehicular breakdowns. QRT comprises 425 four-wheelers and 350 two-wheelers in 426 cities; the QRT attends to nearly 13,000 breakdown calls per month. A web-based live tracking system helps the customer contact and coordinates with the nearest service technician. They have a mobile-based customer interface application 'Maruti Care', being used by over 1.1 million customers to avail services such as service booking, workshop locator, cost calculator, driving tips, service records, and feedback and service reminders. They have implemented Online Customer Approval System (OCAS) across the service network to bring transparency within the process of vehicle servicing. According to Motor Intelligence (2020) Cars 24, Maruti True Value, Mahindra First Choice Wheels, OLX, and Big Boy Toyz are the major companies operating in Indian used car market. Other market competitors like Tata, Hyundai, Kia, Toyota are not listed in this list. Maruti started its True Value (pre-owned car market) in 2001 and is India's largest certified, used car dealer network, with around 1252 outlets spread across 942 cities (True Value, (n.d)).

During the year 2019, business cooperation between Suzuki Motor Corporation and Toyota Motor Corporation (TMC) started taking shape with the signing of an agreement for capital alliance to establish cooperation in new fields like electric vehicle technology and autonomous driving. According to the Economic Times (2020), from this partnership Maruti Suzuki gets access to new-age technologies whereas Toyota gets opportunity to increase sales volume of the Company's models by cross badging. As per the statistics of Society of Indian Automobile Manufacturers

(SIAM), Toyota has sold 1,784 units of the car per month. The Company is offering Baleno, VitaraBrezza, Ciaz and Ertiga to Toyota. Toyota Kirloskar Motor (TKM) came with Glanza premium hatchback in the Indian market which is the cross-badged version of Maruti Suzuki Baleno and later they launched its second cross-badged vehicle Urban Cruiser, which is based on the VitaraBrezza. The Economist (2019) describes this deal as “an unlikely marriage”, because in their analysis TMC will gain most from Maruti Suzuki's supremacy in India. However, this deal can be considered as the recognition of Maruti Suzuki's importance in Indian market by the Toyota.

Conclusion

In recent times, studies on innovation have gained increased attention as a way to address some of the profound issues. This paper attempted to find the relation between market and innovation in automobile industry. It sought to identify innovations at different levels -products, process, and marketing for improving market share by taking Maruti as a case study. As we noted, from 2012 onwards, there is steady growth in MSIL's market share, registering maximum growth during the 2018-2019 from 44.67 per cent to 52.79 per cent. Maruti Suzuki had market share of 35 per cent consistently for a decade in the Indian market. The most important factor that helped them to maintain a domineering position is their continuous commitment to innovation; the most important being the introduction of various models with significant number of variants in each of the models. There are mainly three types of Innovation happening in their firm and they are product innovation, process innovation and marketing innovation. Wide range of products with large number of variants is a typical example of product innovation and through their innovations in product, they aim to enhance drivability, safety, giving fuel efficient engines, latest technologies to their customers. Maruti, as part of their process innovation, introduced computer-based design for development of new products, new delivery methods, and improved ICT mediated technology to improve the efficiency and quality of auxiliary activities. Marketing innovation not only helped them to make inroads into new customer base but also build brand loyalty for its existing customers. Maruti Genuine Accessories, Maruti Driving School, Maruti Insurance, Maruti Auto Card, Maruti Genuine Parts, Maruti True Value and Maruti Finance are examples of wide supporting product range of MSIL, hence covering aspects of automobile industry in a holistic manner. The ease and low cost of maintenance of vehicle is a critical determinant of the success of automobile Industry. This includes close proximity of service workshops and availability of spare parts at affordable prices. Growing competition, changing customer preferences, and evolving regulatory requirements are swiftly changing the Indian automobile market. Innovative advertising and marketing strategies help them to capture the market in such conditions. Maruti Suzuki's innovations has additionally been proven beneficial to the Indian Consumers as it brought cars with cheap price, green technology, and fuel efficiency. Maruti Suzuki stands always ahead than its competitors because of constant innovations and technological up gradations. Innovations in Maruti Suzuki helped them to export their product even to highly industrialised and developed European nations and this is the net effect of product innovation, process innovation and marketing innovations.

Authorship

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References

- The Economic Times. (2016). *17 cars with mileage of over 25 KM/L in India - 17 cars with mileage of over 25 Km/l*. <https://economictimes.indiatimes.com/auto/17-cars-with-mileage-of-over-25-km/l-in-india/17-maruti-alto-k10-cng/slideshow/51709779.cms>.
- Cardekho. (n.d.). *711 Tata car service Centers: Tata CAR Repair/servicing near me*. www.cardekho.com/Tata/car-service-center.htm.
- True Value. (n.d.). *About us*. <https://www.marutisuzukitruevalue.com/about-us>.
- Worldsteel. (n.d.). *Automotive*. <https://www.worldsteel.org/steel-by-topic/steel-markets/automotive.html>.
- Baregheh, A., Rowley, J.&Sambrook, S. (2009). Towards a multidisciplinary definition of innovation. *Management Decision*, 47, 1323-1339.
- Banbury, C.& Mitchell, W. (1995). The Effect of Introducing Important Incremental Innovations on Market Share and Business Survival. *Strategic Management Journal*, 16, 161-182. <http://www.jstor.org/stable/2486774>
- Bhargava, R. C. Seetha (2010). *The Maruti Story. How a Public Sector Company Put India on Wheels*. Harper Collins Business.
- Business-Standard. (2018, June 5). *Maruti Suzuki innovations to reduce emissions and water use*. https://www.business-standard.com/article/news-cm/maruti-suzuki-innovations-to-reduce-emissions-and-water-use-118060500670_1.html.
- Brown, S. (2008). Business processes and business functions: A new way of looking at employment. *Monthly Labor Review*, www.bls.gov/mlr/2008/12/art3full.pdf.
- Cohen, S., Teece, D.J., Tyson, L.&Zysman, J. (1984). *Global Competition: The New Reality*. President's Commission on Industrial Competitiveness, Government Printing Office, Washington DC, Vol. III.
- Car Dekho. (n.d.). *Electric cars in INDIA, E Cars PRICE 2021, Mileage, Images*. <https://www.cardekho.com/electric-cars>.
- Fagerberg, J. (2006). *The Oxford Handbook of Innovation*. New York: Oxford University Press.
- Maruti Suzuki. (2021, April 13). *Four years in a row - India's top 5 best-selling cars come from Maruti Suzuki*. <https://www.marutisuzuki.com/corporate/media/press-releases/2021/april/four-years-in-a-row-indias-top-5-best-selling-cars-come-from-maruti-suzuki>.
- Freeman, C. (1982). *The Economics of Industrial Innovation, (2nd edition)*. Frances Printer.
- Prokerala. (n.d.). *Hyundai Service Centers - Hyundai Service Center Location, Contact Details*. <https://www.prokerala.com/automobile/hyundai/service-centers/>.
- George, J. (2020, May 15). *BS6 Maruti Suzuki engines explained, model availability & mileage listed*. Indian Autos Blog. <https://indianautosblog.com/every-bs6-maruti-suzuki-engine-explained-model-availability-mileage-listed-p320663>.
- Gupta, S. D. (2020, April 9). *Why Maruti Suzuki is not charged up about India's electric car race*. Business Standard. https://www.business-standard.com/article/automobile/why-maruti-suzuki-is-not-charged-up-about-india-s-electric-car-race-120040900511_1.html.

- Khurana, R. (2020, March 23). *Best mileage cars In INDIA: Top fuel efficient cars with price*. Car Blog India. <https://www.carblogindia.com/best-mileage-cars-in-india>.
- Kowalewicz, A.&Wojtyniak, M. (2005). Alternative fuels and their application to combustion engines. *Proceedings of the Institution of Mechanical Engineers, Part D: Journal of Automobile Engineering*, 219(1), 103–125. <https://doi.org/10.1243/095440705x6399>
- Lafley, A.G., &Charan, R. (2008). *The game-changer: How you can drive revenue and profitgrowth with innovation*. Crown Business.
- Malhotra, S. (2019, March 13). *Maruti Suzuki Implementing RPA across functions & a chatbot for HR Support*. dynamicCIO.com. <https://www.dynamiccio.com/maruti-suzuki-implementing-rpa-across-functions-ai-chatbot-for-hr-support/>.
- Mammen, J.T. (2017). Globalization and Sectoral Innovation in India Automobile Industry: A case study of Maruti Suzuki. In R.Girish Kumar (Ed.), *Globalization and India's Innovation systems: A 'Creative Destruction'?*. MG University.
- Maruti Insurance Broking - Bringing Smiles to Vehicle Owners, since 2002*. (n.d.). <https://www.marutisuzukiinsurance.com/About-MarutiInsurance.aspx>
- Maruti Suzuki India Limited Annual and Sustainability Report 2015-2016. https://marutistorage.blob.core.windows.net/msilintiwebpdf/Maruti_Suzuki_AnnualReport_2015-16.pdf
- Maruti Suzuki Annual and Sustainability Report 2017-2018. https://marutistorage.blob.core.windows.net/msilintiwebpdf/MSIL_AR_201718_LR.pdf
- Maruti Suzuki India Limited Annual Integrated Report 2018-2019. https://marutistorage.blob.core.windows.net/msilintiwebpdf/Integrated_Report_201_19_Low.pdf
- Maruti Suzuki India Limited Annual Integrated Report 2019-2020. <https://marutistorage.blob.core.windows.net/msilintiwebpdf/MarutiSuzuki-AnnualIntegrated-Report-2019-20-Low-res.pdf>
- Maruti Suzuki India Limited Annual Report 2010-2011. <https://marutistorage.blob.core.windows.net/marutisuzukipdf/AR-10-11.pdf>
- Maruti Suzuki India Limited Annual Report 2011-12. https://marutistorage.blob.core.windows.net/marutisuzukipdf/MARUTI_AR_2012_Dluxe_27-07-12.pdf
- Maruti Suzuki India Limited Annual Report 2012-13. https://marutistorage.blob.core.windows.net/marutisuzukipdf/MarutiSuzukiAnnualReport_2012_13.pdf
- Maruti Suzuki. (n.d.). *Safety features in Maruti Suzuki cars - new generation heartect platform*. <https://www.marutisuzuki.com/corporate/technology/heartect>.
- Maruti Suzuki. (n.d.). *Maruti Suzuki car insurance - Cashless and easy claim settlement*. <https://www.marutisuzuki.com/more-from-us/insurance>.
- The Economic Times. (2017, April 10). *Maruti Suzuki shifting to safer vehicles, plans to consolidate more models on four platforms*. <https://economictimes.indiatimes.com/maruti-suzuki-shifting-to-safer-vehicles-plans-to-consolidate-more-models-on-four-platforms/articleshow/58099739.cms?from=mdr>.
- Economic Times. (2019, October 4). *Maruti Suzuki sold over 2 LAKH bs-vi vehicles in 6 months - Et auto*. <https://auto.economictimes.indiatimes.com/news/passenger-vehicle/cars/maruti-suzuki-sold-over-2-lakh-bs-vi-vehicles-in-6-months/71435138>.

- Maruti Suzuki. (n.d.). *Maruti Suzuki cars - SMART hybrid technology*. <https://www.marutisuzuki.com/corporate/technology/smart-hybrid>.
- Mathai, L. (2021, January 13). *Petrol BS6 cars with highest fuel efficiency in India: Marutisuzuki DZIRE, Toyota GLANZA and more*. The Financial Express. <https://www.financialexpress.com/auto/car-news/most-fuel-efficient-bs6-petrol-cars-in-india-maruti-alto-nissan-magnite-dzire-baleno-specs-price/2170020/>.
- Miglani, S. (2019). The growth of the indian AUTOMOBILE Industry: Analysis of the roles of government policy and other enabling factors. *Innovation, Economic Development, and Intellectual Property in India and China*, 439–463. https://doi.org/10.1007/978-981-13-8102-7_19
- Miles, I. (2006). Innovation in Services. In J. Fagerberg & D.C. Mowery (Eds.), *The Oxford Handbook of Innovation* New York: Oxford University Press.
- Miles, I. (2008). Patterns of Innovation in Service Industries. *IBM Systems Journal*. 47. 115-128. [10.1147/sj.471.0115](https://doi.org/10.1147/sj.471.0115).
- Maruti Suzuki Mail. (n.d.). *Mobility and Automobile Innovation lab in India*. <https://www.marutisuzukimail.com/#about>.
- Mordor Intelligence. (2020). *India Used Car Market - Growth, Trends, COVID-19 Impact, and Forecasts (2021 - 2026)*. <https://www.mordorintelligence.com/industry-reports/india-used-car-market>.
- Motohashi, K. (2015). Suzuki Motor's expansion in India. *Global Business Strategy*, 223–241. https://doi.org/10.1007/978-4-431-55468-4_14
- OECD. (2005). *Oslo manual: Guidelines for collecting and interpreting innovation data* (3rd ed.).
- Pavankalyan. (26 Jul 2020). *How Maruti Suzuki is able to maintain more than 40% marketshare in Passenger Car Segment from past 20+ Years*. <https://taxguru.in/finance/maruti-suzukimaintain-40-per-cent-market-sharepassenger-car-segment-20-years.html>
- People Technology*. (n.d.). Retrieved from Maruti Suzuki <https://www.marutisuzuki.com/corporate/technology>
- Porter, M.E., & Stern, S. (1999). *The new challenge to America's prosperity: Findings from the innovation index*. Council on Competitiveness.
- Maruti Suzuki. (n.d.). *Protect Your Maruti Suzuki Car with Maruti Insurance*. <https://www.marutisuzuki.com/more-from-us/insurance>.
- Raj, A. (2017, May 8). Robots sweep Across Maruti Suzuki's shop floor. Mint. <https://www.livemint.com/Companies/oqexlea1CoMelXiAXcveOJ/Robots-sweepacross-Maruti-Suzukis-shop-floor.html>.
- Robinson, W. (1990). Product Innovation and Start-up Business Market Share Performance. *Management Science*. 36(10), 1279-1289. <http://www.jstor.org/stable/2632666>
- Safety Heartect Platform*. (n.d.). <https://www.marutisuzuki.com/corporate/technology/heartect>
- Schumpeter, J.A. (1934). *The Theory of Economic Development: An Inquiry into Profits, Capital, Credits, Interest, and the Business Cycle*. Transaction Publishers.
- S-CNG Technology. (n.d.). <https://www.marutisuzuki.com/corporate/technology/cng>.
- Seth, S. (2009, August 5). *Multiple variants keep auto sales up*. Mint. <https://www.livemint.com/Companies/kjayYwbF UWorcQ4r2FYGIN/Multiple-variants-keep-auto-sales-up.html>.

- Singh, S. R. (2017, November 23). *How staff engineers drive innovation at Maruti Suzuki*. Businessline. <https://www.thehindubusinessline.com/companies/How-staff-engineers-drive-innovation-at-Maruti-Suzuki/article20697202.ece>.
- Scroll. (2017, May 9). *Maruti Suzuki partially replaces manpower with robots at Its Manesar and Gurugram plants*. Scroll. <https://scroll.in/latest/837078/maruti-suzuki-partially-replaces-manpower-with-robots-at-its-manesar-and-gurugram-plants>.
- Smart Hybrid technology*. (n.d.). <https://www.marutisuzuki.com/corporate/technology/smarthybrid>.
- The Economist Intelligence Unit. (2019, June 3). Solutions, E. I. U. D. (n.d.). <http://www.eiu.com/industry/article/928087676/toyota-and-suzuki-an-unlikely-marriage/2019-06-03>.
- Statista Research Department. (2021, July 28). *India: Passenger car market SHARE 2018*. <https://www.statista.com/statistics/316850/indian-passenger-car-market-share/>.
- Maruti Suzuki. (n.d.). *Why Maruti Suzuki Smart Finance? The Simplest Way to Finance Your Car in Just a Few Clicks*. <https://www.marutisuzuki.com/more-from-us/finance>
- The Financial Express. (2021, April 13). *India's top 5 selling cars are Maruti Suzuki: SWIFT, Baleno rule the grid*. <https://www.financialexpress.com/auto/car-news/indias-top-selling-cars-maruti-suzuki-swift-dzire-alto-wagonr-vitara-brezza-price-industry-sales/2231987/>.
- True Value*. (n.d.). Retrieved from given by MSIL to its models Maruti Suzuki. <https://www.marutisuzukitruevalue.com/aboutus>
- India CSR Network. (2018, June 6). *Maruti Suzuki innovations to reduce emissions and water use*. <https://indiacsr.in/maruti-suzuki-innovations-to-reduce-emissions-and-water-use/>.
- Hindustan Times. (2020, November 17). *Maruti Suzuki launches fifth round OF 'MAIL' initiative*. <https://www.hindustantimes.com/business-news/maruti-suzuki-launches-fifth-round-of-mail-initiative/story-bfw5aw8hMS7Jioo4TstilJ.html>.
- The Indian Express. (2020, December 9). *Maruti Suzuki Launches online car financing platform smart Finance across 30 cities*. <https://indianexpress.com/article/business/companies/maruti-suzuki-india-msi-launches-multi-financier-online-car-financing-platform-smart-finance-7098217/>.
- Maruti Suzuki India Limited Annual Report 2011-12. https://marutistorage.blob.core.windows.net/marutisuzukipdf/MARUTI_AR_2012_Deluxe_27-07-12.pdf
- Thakkar, K. (2015, August 11). *Maruti wins the majority, corners highest market share in over a decade*. The Economic Times.
- Rai, R. (2019, July 19). *Explain what is smart hybrid?* CarDekho. <https://www.cardekho.com/carfaqs/maruti/ertiga/explain-what-is-smart-hybrid-1856734.htm>.
- MotorOctane.(2020, October 7). *What is Maruti S-CNG and why to prefer it?*. <https://motoroctane.com/news/209789-maruti-s-cng-motoroctane>.
- Bloom, P. & Kotler, P. (1975). Strategies for High Market-Share Companies. *Harvard Business Review*. <https://hbr.org/1975/11/strategies-for-high-market-share-companies>

