Major Research Project on

ELECTRIFYING THE FUTURE: CHALLENGES AND COMPETITVE STRATEGIES FOR EV'S IN TODAY'S MARKET (A Case Study on Maruti Suzuki)

Submitted By

Vanshika Agrawal

2K23/DMBA/138

Submitted To

Dr. Chandan Sharma

Assistant Professor, DSM

DELHI SCHOOL OF MANAGEMENT

Delhi Technological University

Bawana Road Delhi 110042

ACKNOWLEDGEMENT

I would like to express my sincere gratitude to all those who supported me throughout the course of this Major Research Project titled "**Electrifying the Future: Challenges and Competitive Strategies for EVs in Today's Market, A Case Study on Maruti Suzuki"**

First and foremost, I would like to express my sincere gratitude to Dr. Chandan Sharma for his unwavering support and thoughtful inputs. His involvement played a pivotal role in the successful completion of this study.

I would also like to thank the other esteemed faculty members of the Delhi School of Management, Delhi Technological University, for their constant academic support and inspiration.

I am equally grateful to my peers, friends, and family for their unwavering support, motivation, and understanding during the entire journey of this project.

This work would not have been possible without the contributions of each of the aforementioned individuals, and I express my deepest appreciation to all.

Vanshika Agrawal

2K23/DMBA/138

Date:

EXECUTIVE SUMMARY

Maruti Suzuki, a cornerstone of India's automotive industry, finds itself at a pivotal moment amidst the rising tide of the electric vehicle (EV) era. Despite its longstanding dominance in the traditional vehicle market, Maruti Suzuki now confronts heightened competition from Tata Motors and Hyundai in the swiftly evolving EV sector. Shareholder apprehensions regarding Maruti Suzuki's pace in transitioning to EVs compared to its rivals underscore the critical need for a strategic and adaptable approach.

My proposed solution positions Maruti Suzuki's venture into EVs as essential for preserving its market leadership and fostering consumer trust. Currently in the initial phase, the company aims to introduce six EV models by 2031. Success hinges on consumers embracing affordable and appealing EV options, necessitating innovation, astute marketing strategies to reshape perceptions, and ongoing adaptation to maintain a competitive edge in the dynamic EV landscape.

During the data analysis phase, insights into the target audience unveil a predominantly young demographic, aged 18-27, with a male and student bias. With over 91% of respondents already car owners, this demographic presents a ripe opportunity for cross-selling EVs. Notably, 47.3% express a strong interest in EVs, citing price, range, and charging infrastructure as pivotal factors influencing their decisions.

Maruti Suzuki's extensive distribution channels—including Maruti Suzuki Arena, Nexa, True Value, and commercials—underscore the company’s wide-reaching presence. To bolster these channels, marketing recommendations include establishing EV experience centres, forging partnerships with charging providers, implementing digital marketing initiatives, and hosting educational workshops to enhance brand visibility and consumer awareness.

Strategic communication channels, brand awareness, and perception management emerge as crucial components. Leveraging existing brand loyalty and emphasizing affordability within the ₹15 lakh range are identified as key market entry points. This refined strategy serves as a comprehensive roadmap, guiding Maruti Suzuki's marketing team in precise targeting, strategic communication, and brand perception

enhancement.

In conclusion, my executive summary encapsulates a robust strategic roadmap for Maruti Suzuki, addressing challenges and capitalizing on opportunities in the EV revolution. Grounded in a consumer-centric approach, innovative marketing strategies, and a steadfast commitment to reshaping consumer perceptions, this roadmap positions Maruti Suzuki as a formidable contender in India's rapidly evolving EV market.

DECLARATION

I, Vanshika Agrawal, a student of the Delhi School of Management, Delhi Technological University, hereby declare that the **Major Research Report titled "Electrifying the Future: Challenges and Competitive Strategies for EVs in Today's Market, A Case Study on Maruti Suzuki"** submitted in partial fulfilment of the requirements for the award of the Master of Business Administration (MBA) degree, is my original work. I affirm that neither I nor anyone else has submitted this project report to any other institution or university for any degree or diploma. I also confirm that all information and data collected from various sources have been properly acknowledged in this project.

Vanshika Agrawal

2K23/DMBA/138

Date:

CERTIFICATE

This is to certify that the Major Research Project titled "**Electrifying the Future: Challenges and Competitive Strategies for EVs in Today's Market, A Case Study on Maruti Suzuki**" is submitted by Vanshika Agrawal, 2K23/DMBA/138 to Delhi School of Management, Delhi Technological University, in partial fulfillment of the requirement for the award of the degree of Masters in Business Administration during the academic year 2024–2025.

Dr. Chandan Sharma	Dr. Saurabh Agrawal
Assistant Professor	Head of the Department

TABLE OF CONTENTS

CHAPTER 1: INTRODUCTION

1.1. Background of the EV Industry

Electric Vehicles (EVs) have emerged as a **transformative force in the global automotive industry**, driven by the need for **sustainable transportation** and **energy efficiency**. The evolution of EVs can be traced back to the **19th century**, but their widespread adoption has gained momentum in the last two decades due to **technological advancements, environmental concerns, and government policies**.

Historical Context

- **1830s**: First crude electric vehicle developed.
- **1900s**: EVs gained popularity, but the rise of internal combustion engines (ICE) reduced their dominance.
- **1990s-2000s**: Renewed interest due to climate concerns and rising fuel prices.
- **2010s-Present**: Significant advancements in **battery technology, government incentives, and charging infrastructure** have made EVs a viable alternative to traditional petrol/diesel vehicles.

Key Drivers of EV Adoption

1. **Environmental Concerns**
    - EVs produce **zero tailpipe emissions**, reducing greenhouse gases and urban pollution.
    - Reduction in dependency on fossil fuels mitigates climate change.
2. **Government Policies & Incentives**
    - Subsidies like **FAME II (Faster Adoption and Manufacturing of Electric Vehicles) in India**.
    - Tax benefits and lower registration fees for EV buyers.
    - Investment in charging infrastructure development.
3. **Technological Advancements**
    - **Lithium-ion batteries** have improved **range, charging speed, and durability**.
    - Introduction of **solid-state batteries** for better energy

efficiency.

- Smart and connected vehicles with AI-based systems.

4. **Economic Benefits & Cost Savings**
    - Lower operational costs compared to traditional fuel-based cars.
    - Declining battery costs, making EVs more affordable.
    - Increasing fuel prices leading to higher savings with EVs.
5. **Rising Consumer Awareness**
    - Shift in consumer preferences towards sustainable transportation.
    - Expansion of **EV models by key players** like Tesla, Tata, Hyundai, and BYD.

Current Market Scenario

- **Global EV Market**: Expected to reach **$1.1 trillion by 2030** with a **CAGR of 23%**.
- **Indian EV Market**: Target of **30% EV penetration by 2030** under government initiatives like **FAME II and PLI schemes**.
- **Major players**: Tesla, BYD, Tata Motors, Mahindra Electric, Ola Electric, Maruti Suzuki's upcoming EV lineup.

Electric vehicles (EVs) are like the eco-warriors of the automotive world, swapping out the old gas-guzzlers for cleaner, greener rides. Picture this: instead of relying on internal combustion engines, EVs get their mojo from electric motors. These motors sip on juice stored in rechargeable batteries, giving them the power to zip around without a drop of gasoline or diesel. And here's the kicker—they leave behind a big fat zero in terms of tailpipe emissions, making Mother Nature do a little happy dance.

So, what's the big deal? Well, imagine cruising down the street without a care in the world, knowing you're not contributing to air pollution. It's like driving with a halo over your car, right? Plus, with the technology getting better by the day, EVs are becoming more accessible and practical for everyday use. It's like the automotive industry's way of saying, "Hey, let's clean up our act and roll into the future together.

Types of Electric Vehicles

1. **Battery Electric Vehicles (BEVs)** are the pure souls of the electric vehicle world, running solely on electric power stored in batteries. They're like the vegan option at a buffet—completely free of any internal combustion engine and needing a recharge from an external power source to keep on rolling.
2. **Plug-in Hybrid Electric Vehicles (PHEVs)** are the versatile middle ground, rocking both an electric motor and an internal combustion engine. They're like the Swiss Army knives of transportation—chargeable from an external power source and ready to switch to gasoline or diesel if needed, kind of like having a backup generator for your eco-conscious conscience.
3. **Hybrid Electric Vehicles (HEVs)** are the harmonious blend of old and new, marrying an internal combustion engine with an electric motor and a battery. They're like the yin and yang of the automotive world—no external charging needed, thanks to regenerative braking giving their batteries a little boost now and then.

Advantages of Electric Vehicles

1. **Environmental Benefits:** Think of EVs as the superheroes of the road, swooping in to save the day by producing zero tailpipe emissions. They're like the caped crusaders against air pollution and greenhouse gas emissions, fighting the good fight to combat climate change and keep our planet a little greener.

2. **Lower Operating Costs:** Picture this: driving without breaking the bank. That's the beauty of electric vehicles. They're like the thrifty wizards of the automotive world, waving their wands to conjure up lower fuel and maintenance costs. With electricity typically cheaper than gasoline or diesel, and fewer moving parts under the hood, EVs give your wallet a well-deserved break.

3. **Energy Efficiency:** Let's talk efficiency. Electric motors are like the efficiency gurus of the car kingdom, squeezing every last drop of energy from their batteries. Compared to their internal combustion counterparts, they're like the marathon runners, going the extra mile

with higher energy utilization and less energy wastage.

4. **Reduced Dependence on Fossil Fuels:** Imagine a world where we're not at the mercy of finite fossil fuel resources. That's the power of EVs. They're like the pioneers of energy independence and security, paving the way for a future where we rely less on fossil fuels and more on sustainable alternatives.

Challenges and Barriers

1. **Range Anxiety:** It's like that nervous feeling you get when you're not sure if your phone battery will last the whole day, but for cars. Some folks worry about EVs not having enough juice to go the distance, especially if charging stations are few and far between.

2. **Charging Infrastructure:** Think of it as the electric lifeline for EVs. We need a solid network of charging stations, both out and about in public spaces and tucked snugly into our homes, to make EVs a practical choice for everyone.

3. **Battery Technology:** Ah, the heart and soul of EVs. We're talking about batteries that pack more punch, cost less, and stick around longer. It's like upgrading from a flip phone to a smartphone—we need that next-level tech to make EVs truly shine.

4. **Initial Cost:** Let's address the elephant in the room: the price tag. Sure, EVs can hit the wallet a bit harder upfront, but think of it as an investment in the future. With tech getting better and production ramping up, those costs are starting to come down, making EVs more accessible to all.

Government Incentives and Policies

1. Many governments worldwide are like cheerleaders rooting for electric vehicles, offering all sorts of incentives to get folks behind the wheel. Think tax credits, rebates, and subsidies—it's like getting a high-five from Uncle Sam or a pat on the back from your friendly neighborhood government.

2. Regulatory policies are like the rulebook keeping things in check on the road to sustainability. Emissions standards and electrification targets set the pace, nudging automakers and drivers alike toward a greener future. It's like having a referee ensuring everyone plays by the eco-friendly rules.

Future Outlook

1. The electric vehicle scene is like a rocket ship blasting off, fueled by all the cool tech upgrades, batteries getting cheaper, and more folks tuning into Mother Nature's concerns.
2. Industry experts are basically saying, "Buckle up, because we're just getting started." They're forecasting that EVs will soon be as common as smartphones, with more and more people hopping on the eco-friendly bandwagon in the years to come.

1.2. Company Overview

Maruti Suzuki India Limited (MSIL), a subsidiary of Japan's Suzuki Motor Corporation, is the largest passenger car manufacturer in India and a key driver of the country's automobile revolution. The company primarily focuses on the manufacturing and sale of passenger vehicles across the Indian market. Starting with the iconic Maruti 800, Maruti Suzuki has grown its product lineup to include 16 car models and over 150 variants, ranging from affordable entry-level cars like the Alto 800 and Alto K10 to premium sedans such as the Ciaz.

In addition to vehicle manufacturing, Maruti Suzuki offers a range of complementary services including pre-owned car sales, fleet management, and car financing, ensuring a comprehensive ownership experience for its customers. The company operates manufacturing plants in Gurgaon and Manesar, Haryana, and maintains a state-of-the-art R&D center in Rohtak, demonstrating its focus on innovation and quality.

Founded in February 1981 as Maruti Udyog Limited, the company was originally a joint venture between the Government of India and Suzuki Motor Corporation. Today, Suzuki Motor Corporation holds a 58.2% equity stake in Maruti Suzuki, whose shares are publicly traded on the National Stock Exchange (NSE) and Bombay Stock Exchange, underscoring its prominence in the Indian automotive sector.

1.3. Organizational Structure

Maruti Suzuki's organizational structure embraces a functional design, integrating horizontal linkages to adeptly oversee operations across pivotal functions such as finance, marketing, production, and administration. This organizational approach underscores clarity and specialization in roles, fostering a functional management style. To manage its considerable scale, the company adopts a tiered structure comprising 29 divisions, each overseen by a head. These divisions further cascade into 132 departments, each led by a departmental head. This hierarchical arrangement ensures comprehensive coverage of functions essential to Maruti's automotive operations.

With a focus on precision and efficiency, Maruti places a high emphasis on meticulous documentation, exhibiting a high level of formalization. Clear methods, procedures, and standards are meticulously defined, with approved departmental procedures serving as guiding frameworks overseen by divisional heads. Standardized operating procedures, referred to as Maruti Operations standards, are prominently displayed in production areas, reinforcing adherence to established protocols.

Maruti Suzuki's organizational structure is characterized by a flat hierarchy, delineating employees into six functional categories: workers, supervisors, executives, section managers, department managers, and division managers. This streamlined structure fosters effective communication channels and expedites decision-making processes, ensuring agility and responsiveness within the organization.

1.4. Products And Services

Maruti Suzuki, as a leading automotive company in India, has expanded its product and service offerings to cater to the diverse needs of consumers.

Product Range:

1. **Cars:** From nimble compact hatchbacks like the Alto and Swift to refined sedans like the Dzire, Maruti Suzuki offers a comprehensive lineup covering different segments. This wide array ensures there's

something for everyone, accommodating various preferences and budgets.

2. **SUVs:** Acknowledging the surging demand for SUVs, Maruti Suzuki introduces models like the Vitara Brezza and S-Cross, seamlessly blending style, comfort, and performance. These SUVs cater to customers seeking adventure, versatility, and a commanding driving experience.

3. **Vans:** Maruti Suzuki's portfolio includes spacious vans like the Ertiga, designed to serve both families and businesses. With a focus on ample interior space and adaptability, these vans offer practical solutions for transporting passengers or cargo with ease.

4. **Electric Vehicles:** Embracing the shift towards sustainable mobility, Maruti Suzuki ventures into the realm of electric vehicles. With plans to unveil multiple EV models by 2031, the company demonstrates a steadfast commitment to shaping the future of transportation, prioritizing eco-friendly alternatives without compromising on performance or innovation.

Service Offerings:

1. **Maintenance and Servicing:** Maruti Suzuki's extensive network of service centers ensures the longevity and optimal performance of vehicles. These centers offer a range of services including routine maintenance, repairs, and genuine spare parts, ensuring that vehicles are well taken care of throughout their lifespan.

2. **Roadside Assistance:** For added peace of mind, Maruti Suzuki provides roadside assistance services. Whether it's a breakdown, flat tire, or any other emergency, customers can rely on prompt assistance, enhancing their overall convenience and confidence on the road.

3. **Finance Options:** Maruti Suzuki facilitates vehicle ownership by offering flexible financing options. These options make it easier for customers to purchase their desired vehicles with tailored payment

plans that suit their financial needs.

4. **Extended Warranty Programs:** To further reassure customers, Maruti Suzuki offers extended warranty programs. These programs cover specific components beyond the standard warranty period, providing additional protection and peace of mind.

5. **Genuine Accessories:** Maruti Suzuki provides a wide selection of genuine accessories, letting customers add their unique flair while ensuring top-notch quality and safety standards.

6. **Digital Services:** Embracing digitalization, Maruti Suzuki provides a suite of online services through its website and mobile applications. Customers can easily book test drives, schedule service appointments, and explore financing options from the comfort of their homes.

7. **Customer Support:** Maruti Suzuki prioritizes customer satisfaction with a dedicated customer support system. Through this system, the company promptly addresses customer queries, feedback, and concerns, ensuring a positive and enriching ownership experience for all customers.

1.5. Market Share And Market Position

Maruti Suzuki continues to solidify its position as a **leader in the Indian automobile industry**, commanding an **impressive 30% market share** in the passenger car segment. Recent milestones highlight the company's exceptional performance, with **October 2022** witnessing a **remarkable achievement of recording a monthly domestic PV volume of 168,047 units**, reflecting a robust **year-on-year growth of 19.74%**. This outstanding performance has propelled Maruti Suzuki's market share to an impressive **42.03%**, underscoring its resilience and adaptability in the ever-evolving market landscape.

1.6. Marketing Research Problem Statement

Maruti Suzuki, renowned as India's premier automotive brand, confronts a pivotal challenge amid the ongoing **electric vehicle (EV) revolution**.

Despite its dominance in traditional vehicles, Maruti Suzuki **trails behind in the EV sector**, with plans to **introduce six EVs by 2031**. However, mounting shareholder concerns arise as competitors like **Tata Motors and Hyundai accelerate their EV initiatives**, with Tata Motors aiming for ten EVs by 2026 and Hyundai committing to six by 2028. This dual challenge necessitates an accelerated EV rollout strategy while concurrently addressing consumer perceptions and the challenges hindering EV adoption in India.

Consumer attitudes toward EVs exhibit variability, with **comfort, range, and charging infrastructure emerging as significant concerns**. To navigate these complexities and secure its standing in the evolving market landscape, Maruti Suzuki must not only enhance its EV offerings but also build a **targeted marketing strategy** to position EVs as **trusted and accessible choices for Indian households**. This approach is vital for shaping the future of sustainable transportation in the country while also mitigating the competitive threats posed by industry rivals.

1.7. Objectives Of The Study

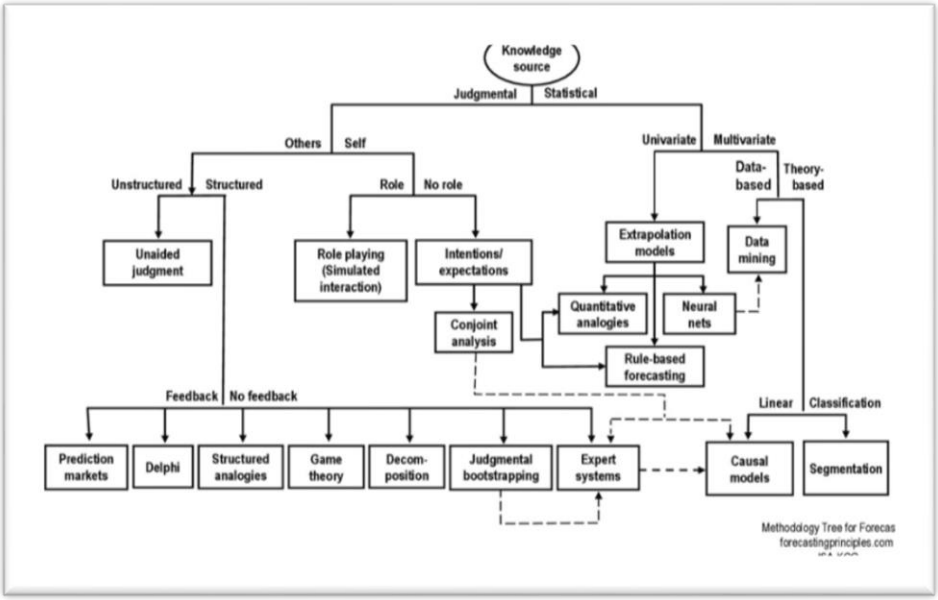
1. To understand attitudes and perceptions of Indian consumers towards electric vehicles
2. To study and analyze competitor (of Maruti Suzuki) in the Indian EV Market
3. To provide strategic insights and recommendations for effective implementation.
4. To understand the market gaps and analyze the data to identify potential improvements, innovations, and features that align with consumer expectations.
5. To suggest marketing strategies for Maruti Suzuki to position as a Trusted Brand

1.8. Sales Forecasting Methods: An Overview

Sales forecasting involves methods that derive primarily from judgmental

sources versus those from statistical sources. These methods and their relationships are shown in the flow chart in Figure 1. Judgment and statistical procedures are often used together, and since 1985, much research has examined the integration of statistical and judgmental forecasts (Armstrong and Collopy 1998b). Going down figure, there is an increasing amount of integration between the judgmental and statistical procedure. A brief description of the methods is provided here. Makridakis, Wheelwright and Hyndman (1998) provide details on how to apply many of these methods.

Figure 1:



1.9. Objectives Of Sales Forecasting

Objective forecasting methods are quantitative in nature and work best when there is plenty of reliable data available. These approaches are especially useful in stable environments, but they may fall short when dealing with unpredictable consumer behavior or volatile market conditions. Relying solely on historical data can become problematic in such scenarios. Broadly, objective forecasting techniques are classified into three categories: **time series**, **causal/econometric**, and **artificial intelligence-based methods**.

Time series methods focus on using past data to project future outcomes. For instance, historical sales data can often serve as a strong indicator of future sales, influenced by factors such as brand loyalty, repeat purchases, and marketing efforts. However, this approach assumes that future trends

will closely mirror past patterns—an assumption that doesn't always hold true in fast-evolving industries. Time series data typically consist of four components: **trend**, **seasonal**, **cyclical**, and **random or irregular variations**. Before making any forecasts, it's essential to adjust the data for these components. Common techniques in this category include **moving averages** (both simple and weighted), **exponential smoothing**, and **regression analysis**.

Causal or econometric methods, on the other hand, attempt to forecast outcomes based on the relationships between variables. These methods are built on the idea that changes in certain known factors can directly influence future results. For example, temperature fluctuations may help predict ice cream sales, while advertising spend could impact product demand. **Regression analysis** plays a central role here, helping identify and quantify such relationships. More advanced econometric models, such as **ARMA (Autoregressive Moving Average)** and **ARIMA (Autoregressive Integrated Moving Average)**, are used in specific cases where patterns in the data are more complex.

Despite their sophistication, both time series and causal forecasting methods have limitations. Neither is well-equipped to handle sudden, drastic changes in the environment—such as economic shocks, natural disasters, or major technological shifts—which can render historical data and known relationships less relevant or even obsolete.

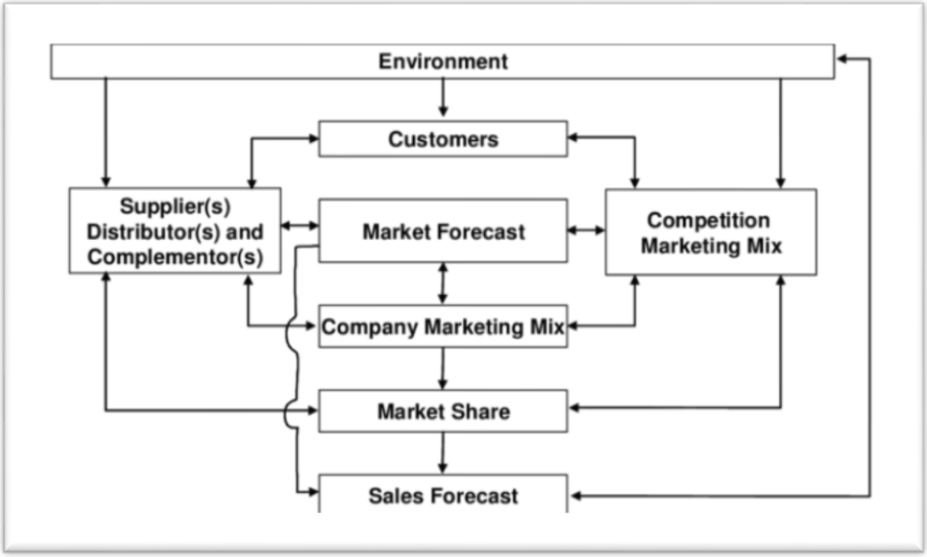


Figure 2: Casual approach to sales forecasting

1.10. Scope Of The Study

The scope aims to provide Maruti Suzuki with actionable insights and recommendations to navigate the evolving landscape of the Indian EV market, accelerate its electric vehicle rollout, and strengthen its position as a trusted brand among consumers by understanding varying consumer attitudes, Competitor analysis in the Indian ev market, Market Gap Analysis Based on Consumer Feedback

CHAPTER 2: LITERATURE REVIEW

Several past studies have ventured into different facets of electric vehicle (EV) adoption within the Indian market, shedding light on both hurdles and openings for companies such as Maruti Suzuki. These research endeavors dive into the minds of consumers, examine governmental actions, assess infrastructure requirements, and analyze the efficacy of marketing approaches in propelling EVs forward. This wealth of knowledge serves as a guiding compass for Maruti Suzuki, aiding them in steering through the switch to electric vehicles adeptly. By acknowledging and responding to consumer apprehensions and tapping into burgeoning industry trends, Maruti Suzuki can chart a course towards sustainable success in the automotive landscape.

2.1. Evolution of Electric Vehicles

Maruti Suzuki's supremacy in the Indian automotive market is attributed to its strategic Maruti Suzuki's dominance in the Indian automotive market is underpinned by a strategic pricing model that prioritizes value for money through economies of scale and localized production (Gupta et al., 2019). However, entering the electric vehicle (EV) sector poses unique challenges, notably the higher initial costs of EVs (Sharma et al., 2021). Successfully navigating this transition requires Maruti Suzuki to delicately balance affordability with the perceived benefits of reduced operational expenses and environmental sustainability.

Understanding consumer perceptions is pivotal, particularly regarding factors like range anxiety and charging infrastructure (Li et al., 2020). Maruti Suzuki's marketing strategy must meticulously address these concerns through targeted communication campaigns and comprehensive educational initiatives.

In the dynamic realm of automotive marketing, there's a discernible shift towards digital platforms (Smith et al., 2019). Online channels, social media, and digital integration have become integral components. Maruti Suzuki's marketing strategy should embrace a multi-channel approach,

leveraging digital platforms for elevated brand visibility and enhanced customer engagement. Challenges persist, including concerns about charging infrastructure and limited awareness (Sierzchula et al., 2014), but opportunities arise in the growing interest in sustainable transportation (Ziegler et al., 2017), positioning Maruti Suzuki for success in the evolving EV market.

2.2. Forecasting Methods

Firms must anticipate and plan for future demand to ensure they can respond promptly to customer orders, as most customers are unwilling to wait for their orders to be processed from scratch. Accurate demand forecasting plays a critical role in enabling firms to manage costs effectively by stabilizing production levels, optimizing transportation, and ensuring efficient logistics operations. As noted by Adam and Ebert (2001), reliable forecasts contribute to streamlined operations and high levels of customer satisfaction. In the case of new manufacturing facilities, demand forecasting becomes even more vital, as projections must span several years into the future to justify the long-term investment and ensure the facility continues to meet demand over time (Bails and Peppers, 1982).

Forecasting is, therefore, a fundamental concern in many economic and managerial contexts. Broadly, there are two main forecasting techniques. The first is **judgmental (qualitative) forecasting**, which relies on expert opinion, experience, and intuition to predict future behavior. The second is **objective (quantitative) forecasting**, which utilizes historical data to identify patterns and relationships that can be projected forward. A third, more integrated approach involves **combining both judgmental and objective models** to enhance forecast accuracy. This hybrid method may aim to minimize the Mean Square Error (MSE) of the resulting forecast model or simply average different forecast outcomes to improve reliability. The choice of combination method typically depends on the firm's forecasting objectives and operational priorities.

2.3. Objectives Of Sales Forecasting

Objective forecasting methods are quantitative in nature and work well

when there is ample data available. These approaches are particularly useful in stable environments, where past trends can be reliably projected into the future. However, when consumer behavior and market dynamics are erratic or unpredictable, relying solely on historical data becomes less effective. Objective forecasting techniques are generally classified into three categories: **time series**, **causal/econometric**, and **artificial intelligence-based** methods.

Time series methods focus on analyzing historical data to estimate future outcomes. Often, past sales figures can serve as reliable indicators of future sales, influenced by factors such as previous marketing efforts, repeat purchases, and brand recognition. The core assumption behind time series methods is that the future will mirror the past. However, in rapidly evolving industries or volatile environments, this assumption may not hold true, making such forecasts potentially inaccurate or even redundant. Time series data typically exhibit four components: **trend** (long-term movement), **seasonal** (short-term, regular patterns), **cyclical** (longer-term economic cycles), and **random or irregular** fluctuations. Before any forecasting is done, the data must be adjusted for each of these components. Common techniques used in time series forecasting include **moving averages** (both simple and weighted), **exponential smoothing**, and **regression analysis**.

In contrast, **causal forecasting methods** aim to predict future outcomes based on the influence of other known or assumed variables. These models attempt to identify cause-and-effect relationships between independent factors and the variable being forecasted. For instance, changes in temperature might be used to predict ice cream sales, or increases in advertising expenditure may be linked to higher product demand. These models provide deeper insight into what drives demand and can be particularly useful when the relationships between variables are well understood.

2.4. Judgmental (Subjective) Forecasting Method

Judgmental forecasting is a technique that relies on human intuition, experience, and subjective judgment rather than detailed analytical models. It typically involves one or more individuals who contribute their

insights to prepare forecasts, often in situations where data is limited or where market conditions are rapidly changing. According to Smith and Mentzer (2010), the perceptions and actions of forecasters can significantly influence the quality and accuracy of the forecasts. One commonly used judgmental method is the **expert consensus approach**, also known as the **jury of opinion** method. In this technique, a group of experts collaborates to develop a sales forecast. These forecasts can take different forms—**point forecasts** (specific numerical predictions), **interval forecasts** (predictions within a range), or **probability forecasts** (likelihood estimates of various outcomes).

Another well-known technique is the **sales force composite method**, which involves collecting sales forecasts from the company's sales executives. These individual forecasts are then aggregated, and variations among them are adjusted or removed to arrive at an overall forecast. This method is particularly useful for manufacturers of industrial products looking to generate short-term forecasts, as it draws directly from those closest to the market.

However, judgmental methods have their limitations. They can be unreliable when there are clear trends or shifts in market demand or product offerings, as these changes may not be fully captured through personal judgment alone. To address some of these limitations, the **Delphi method** was developed. This approach avoids the pitfalls of weighting individual opinions and the influence of dominant personalities in group settings. In the Delphi method, participants provide their forecasts—whether point, interval, probability, or a combination—independently. These forecasts are then summarized and shared with the group, and the process is repeated over several rounds, allowing participants to revise their predictions based on anonymous feedback until a consensus is reached.

2.5. Combination Forecasting Method

Combination forecasting is not widely adopted in livestock-focused markets (LFMs), but research suggests it can offer significant benefits in certain contexts. Armstrong (2001) provides evidence that combining forecasting methods (FMs) can enhance the accuracy of predictions (APF)

across various situations. However, this view is not universally accepted. Larrick and Soll (2003), for instance, argue that merely combining different FMs does not automatically lead to improved accuracy. Instead, they emphasize the importance of incorporating insights from industry practitioners to strengthen forecast reliability.

Armstrong further explains that combining forecasts is particularly useful when there is uncertainty about which method to use or when a single forecasting method fails to provide sufficient accuracy. In this context, combination forecasting refers to averaging multiple independent forecasts, which may be based on different data sources, different techniques, or both. This averaging is performed using a consistent and replicable rule—such as calculating a simple average—to reduce bias and increase robustness. The greater the methodological diversity among the forecasts being combined, the higher the potential improvement in accuracy.

For example, a time series forecast might be combined with a judgment-based forecast, such as the jury of executive opinion method, by averaging the outputs of the two. This approach helps to smooth out individual errors from each method. However, it is important to note that in highly volatile or unpredictable markets, combination forecasting may not yield the anticipated improvements in accuracy. Moreover, if a highly accurate forecast is merged with a significantly less accurate one, the resulting forecast may be less reliable than the average, undermining the potential benefits of the combination.

2.6. Indicators of Accuracy of Performance Forecasting:

The following were identified as appropriate independent variables of accuracy of performance forecasting:

2.6.1. Expected Value (EV)

Economic Value (EV), also referred to as **profit growth**, is a measure of a firm's year-on-year growth in profit, adjusted for inflation. It serves as an important indicator of how effectively a company is managing its costs while simultaneously increasing prices, even in highly competitive market

environments. When forecasts are prepared with a high degree of accuracy, the actual EV achieved tends to align closely with the expectations set during the forecasting process, reflecting sound strategic and operational planning.

2.6.2. Return on Sales (ROS)

Return on Sales (ROS) is a financial ratio used to assess a company's operational efficiency, often referred to as the **operating profit margin**. It evaluates how effectively a company converts its total revenues into operating profit, providing insight into the firm's overall performance. A higher ROS indicates better cost management and profitability. The ratio is calculated by dividing the **operating profit** by the **net sales** for a given period, expressing the result as a percentage of revenue that translates into profit.

2.6.3. Return on Assets (ROA)

Return on Assets (ROA) is a key financial metric that indicates how profitable a company is in relation to its total assets. It reflects how efficiently the management is utilizing the company's assets to generate earnings. ROA is calculated by dividing the company's **annual earnings** by its **total assets**, and the result is typically expressed as a **percentage**. A higher ROA suggests more effective use of assets in driving profitability.

2.6.4. Growth in Market Share (GMS)

Market share represents the percentage of total sales within a particular industry or market that is captured by a specific company over a defined time period. It is a key indicator of a company's competitiveness and standing in the market. Market share is calculated by dividing the company's **sales** by the **total sales of the industry** during the same period, typically expressed as a percentage.

Vibhuti Pareek (2022), In studying perceptions towards electric vehicles in the Indian market, the researcher highlighted the importance of manufacturers' efforts in research and development. It's like they're saying, "Hey, if we want people to jump on board with EVs, we need to step up our game." That means focusing on improving the price range, making the product more affordable, jazzing up the design and style, and

even giving it some extra branding love. Basically, it's all about creating a positive vibe around electric vehicles to win over Indian consumers.

Kathrin Monika Buhmann & Josep Rialp Criado (2022), This study delves into why some folks prefer electric vehicles (EVs) over traditional ones, even when the price tags are the same or different. It's like peeking into the minds of consumers to see what makes them tick. Here's the scoop: for some, it's all about status and reputation. These consumers are like the trendsetters, choosing EVs only when they're seen as the fancier option, even if they cost more. It's like saying, "I care about the environment, but I also want to look good doing it." Plus, the study shows that the allure of EVs as eco-friendly rides gets a boost when they're priced higher, adding that extra bit of prestige. It's a fascinating glimpse into how factors like age, income, and even car features play into our car-buying decisions.

Ajaysinh Parmar and Prof. Tushar Pradhan (2021), In a study conducted on consumer perceptions towards electric vehicles in Vadodara city, researchers found that there isn't much enthusiasm among consumers for electric vehicles.

Ajex Thomas Varghese, V.S. Abhilash, and Sini V. Pillai (2021), This study delves into how consumers view and consider purchasing electric vehicles (EVs) in India. It highlights the crucial role the government plays in building the necessary infrastructure for EV adoption. It's like recognizing that for EVs to thrive, they need more than just consumer interest—they need the roads and charging stations to support them.

Prateek Bansal, Rajeev Ranjan Kumar, Alok Raj, Subodh Dubey, and Daniel J. Graham, In this study, researchers dived into the minds of 1000 respondents to uncover their thoughts on electric vehicles (EVs). They weren't just curious about whether people would splash the cash on EVs, but also what specific features and qualities mattered most to them. It's like peering into a crystal ball to understand what makes Indian consumers tick when it comes to EVs.

Ankita Nagpal (2020), The researcher noted that for India to curb pollution and carbon emissions effectively, electric vehicles (EVs) need to become a mainstream mode of transportation nationwide.

Mr. Onkar Tupe, Prof. Shweta Kishore and Dr. Arloph John Vieira

(2020), Researchers noted that in India, consumers perceive the government's initiative to combat fossil fuel depletion positively through the introduction of electric transition. It's like seeing a beacon of hope amidst environmental concerns—a step towards a greener future that resonates with people's desire for sustainability.

Sajan Acharya (2019), In their study on consumer perceptions towards the electric vehicle industry, researchers highlighted the importance of electric vehicles in enhancing environmental sustainability. They emphasized the role of EVs in reducing greenhouse gas emissions and replacing older, more polluting vehicles with cleaner electric alternatives. It's like giving our planet a breath of fresh air, one electric vehicle at a time.

Janardan Prasad Kesari (2019), Public procurement is like the wind beneath the wings of electric vehicles (EVs), giving them a major push forward. Picture this: government offices swapping out their old four-wheeled rides for shiny new EVs, while public transport gets an eco-friendly upgrade with electric buses and three-wheeled vehicles. But that's not all—companies like Ola, Uber, and even food delivery services are jumping on the electric bandwagon, investing in fleets of EVs to zip around town. It's like a domino effect, with each move accelerating the growth of both two and four-wheeled electric vehicles, setting the stage for a greener future on the roads.

Mr. A. Rakesh Kumar (2019), The planet's facing a pollution problem, and it's getting worse by the day. But hey, we're not going down without a fight. One of our biggest weapons in this battle is the introduction of electric vehicles (EVs). See, the transport sector is a big-time culprit when it comes to spewing out CO2, so we've got to rein it in. That means building up charging infrastructure to ease folks' worries about range anxiety. And here's the kicker—we've got to ramp up demand by making all government buses electric and throwing in some sweet tax exemptions for folks who hop on the EV bandwagon. It's like putting on our superhero capes to save the day, one emission-free ride at a time.

Janardan Prasad Kesari, Yash Sharma, Chahat Goel (2019), Crafting a bold strategy to ramp up the adoption of EVs in India is no walk in the park, but it's absolutely crucial for the government. India's vast

geography and diverse population pose unique challenges that demand creative solutions. It's like tackling a complex puzzle where every piece counts, requiring thoughtful planning and innovative approaches to ensure a smooth and successful implementation.

Fanchao Liao, Eric Molin & Bert van Wee (2017), Embracing electric vehicles (EVs) could be a game-changer in tackling environmental issues like pollution, global warming, and our reliance on oil. When it comes to why people choose EVs, it's like unlocking a treasure chest of factors. We're talking about everything from your background and mindset to how you get around and who you listen to. By diving deep into these factors, we can paint a clearer picture of what drives people to go electric. And hey, it's not just about understanding today—it's about shaping tomorrow. So let's chat about how we can keep improving our understanding of EV preferences and pave the way for a brighter, cleaner future on the road.

Dash P. K. (2013) Praveen Kumar and Kalyan Dash suggest that India should take a gradual approach to address the challenges of electric vehicles and charging station infrastructure. They recommend investing in small-scale reinforcements to handle local load issues instead of implementing large-scale changes. Encouraging home charging is also emphasized as a crucial step. They stress the importance of integrating activities between the energy and transport sectors. Furthermore, they propose innovative policies and programs such as providing financial incentives for electric car drivers, including tax credits, purchase subsidies, discounted tolls, free parking, and access to restricted highway lanes.

Marcello Contestabile (2012) In their study exploring the economic and environmental viability of electric vehicles, Marcello Contestabile and colleagues shed light on a critical aspect: the future of EV adoption hinges greatly on advancements in battery technology. It's like saying the key to unlocking widespread acceptance lies in improving batteries to make them more affordable and energy-packed. Additionally, they stress the importance of having a robust recharging infrastructure in place, emphasizing the need for convenient and accessible charging points.

These past studies offer valuable insights into consumer perceptions, market dynamics, and the challenges and opportunities surrounding electric vehicles (EVs) in India. By leveraging this wealth of research, we aim to conduct a comprehensive market analysis for Maruti Suzuki as it considers entering the EV industry in India. This research will help Maruti Suzuki understand consumer needs, navigate market challenges, and develop a strategic plan for successful entry and growth in the evolving EV market landscape.

CHAPTER 3: RESEARCH METHODOLOGY

The primary aim of this research is to delve into consumer perceptions and preferences concerning electric vehicles (EVs), with a specific focus on Maruti Suzuki's foray into the EV market. Through a mixed-methods research design, blending secondary data analysis and primary data collection via a structured questionnaire, this study seeks to gain comprehensive insights into various aspects.

A structured questionnaire has been meticulously crafted to gather pertinent data from potential consumers, covering demographic details, ownership patterns, awareness of Maruti Suzuki's EV plans, factors influencing EV adoption, and perceptions regarding comfort and charging infrastructure. Strategic questioning is employed to gauge respondents' inclination towards purchasing Maruti Suzuki's EVs, apprehensions regarding comfort levels and charging infrastructure, and their readiness to invest in EVs.

Both quantitative and qualitative analyses are employed to scrutinize the collected data, utilizing statistical tools such as MS Excel for trend identification and visualization through pie charts. Throughout the research process, ethical considerations like participant informed consent and confidentiality are rigorously upheld.

It's important to note that the accuracy of responses hinges on the honesty and willingness of participants, and despite potential limitations, the research methodology promises to yield valuable insights. These insights will be pivotal in informing Maruti Suzuki's strategic marketing decisions, facilitating a successful entry into the dynamic electric vehicle market.

3.1. DATA SOURCES

Research Design

In this study, a descriptive research methodology has been chosen to serve as the guiding framework. Descriptive research aims to offer a

comprehensive overview of the current state of affairs by gathering insights from individuals considered to possess relevant information. It delves into people's knowledge, attitudes, and opinions regarding the subject under investigation. Essentially, the research design represents a methodical exploration aimed at uncovering facts, addressing inquiries, and resolving problems through a forward-looking approach.

Research fundamentally entails a systematic and logical investigation of a specific issue or challenge utilizing the scientific method. This approach involves formulating hypotheses, collecting and analyzing data, and drawing meaningful conclusions. By employing a descriptive research methodology, this study endeavours to gain a nuanced understanding of consumer perceptions and preferences regarding electric vehicles, with a specific focus on Maruti Suzuki's entry into the EV market. Through structured data collection and analysis, the research aims to shed light on key factors influencing EV adoption and to provide valuable insights to inform strategic marketing decisions for Maruti Suzuki.

Primary Data

In the context of the marketing research problem for Maruti Suzuki's electric vehicles, potential sources of primary data include:

1. Surveys and questionnaires conducted with consumers to gather their opinions, preferences, and attitudes towards electric vehicles and about Maruti Suzuki as a brand.
2. Interviews with current and potential car owners to gauge perceptions and willingness to adopt electric vehicles.
3. Interviews with daily commuters to understand their preferences and pain points related to vehicle usage, including their openness to electric vehicles.
4. Random sampling interviews conducted in public places, such as transportation hubs, to obtain a diverse set of opinions.
5. Observational research to directly observe consumer behaviour and

interactions with electric vehicles in showrooms or test drives.

Secondary data sources:

1. Market research reports on the Indian EV market from agencies like MRB, Nielsen India, and Kantar or local research firms.
2. Information from government websites such as the Ministry of Heavy Industries, Ministry of New and Renewable Energy (MNRE), and Central Statistical Office (CSO).
3. Competitor reports and financial data from Tata Motors and Hyundai.
4. Industry publications and articles discussing EV trends and consumer preferences.

3.2. TOOLS FOR DATA ANALYSIS

The data underwent analysis utilizing statistical tools, with results communicated through tables, charts, and graphs. The straightforward percentage method was employed for data analysis and interpretation. Subsequently, the findings were presented in a visually appealing manner through tables, charts, and graphs. This approach facilitates clear comprehension and enhances the accessibility of the research outcomes, ensuring that stakeholders can easily grasp the key insights derived from the data analysis process.

- Tables: Presentation of data in both vertical columns and horizontal rows.
- Graphs & Pie charts: Graphs provide visual representations of the data.

3.3. FRAMEWORK OF THE QUESTIONNAIRE

- Demographic Information
- General Car Ownership and Electric Vehicle Awareness
- Travel Patterns
- Electric Vehicle Consideration

- Maruti Suzuki and EVs
- Budget for Electric Vehicle
- Marketing and Communication

3.4. Hypothesis

Based on the previous researches, hypothesis that have been framed by the researcher which are as follows:

H1: Forecasting enhances the overall performance of an organization within the consumer market.

H2: Forecasting helps in understanding market trends as well as consumer preferences, which can be used by the sales managers for enhancing market performance, market share and demand for its product and services.

3.5. Ethical Principles

There are certain **ethical principles** that shall be followed while conducting research and so no research can ever be conducted without giving due importance and consideration to these ethical principles (Stanley, 1996). In this report, all the key ethical principles are followed, to ensure that the research is not only good in terms of research but also did no harm to anyone specifically, the respondents which were involved in the survey conducted as part of this research. Therefore, below are the ethical principles which will be followed strictly for conducting the survey under the research:

1. I shall obtain proper letter of consent from all the respondents who will be part of this research.
2. No harm whatsoever will be caused to any person who is a part of this research.
3. The identity of each respondent shall be kept absolutely confidential and their identity will never be revealed before any person.
4. No deceptive or mala fide practice will be used against any

participant of this research.

5. All the respondents/participants will have full right to refuse to be part of this research and they will never be forced to fill questionnaires.
6. At the time of or during the survey, the participants can ask questions and it shall be my responsibility to clear the doubts to the best of my knowledge.
7. Before presenting an observation formed on the basis of the responses of the participants, their due consent will be taken by first making such observations available to them.
8. The information collected from the respondents will be presented in its true form and no misidentification or deception will be practiced with respect to its presentation in the final observation.

3.6. Limitations of the Study

Below are the various limitations which were faced by the researcher while conducting this research:

1. Few respondents refrained from filling the entire questionnaire.
2. Some respondents left the questionnaire unfilled.
3. Some respondents left the questionnaire incomplete.
4. Some respondents refused to take the survey.
5. Due to lack of resources, I could not conduct this analysis in the entire country.
6. There is a possibility that the responses of some respondents were influenced by prejudice and their personal bias.

CHAPTER 4: ANALYSIS AND DISCUSSION

Test 1: Relationship Between Monthly Income and Willingness to Spend on Electric Vehicles

Table 1:

Correlations

		What is your income?	How much are you willing to spend on an electric vehicle (in INR)?
What is your income?	Pearson Correlation	1	.092
	Sig. (2-tailed)		.231
	N	170	170
How much are you willing to spend on an electric vehicle (in INR)?	Pearson Correlation	.092	1
	Sig. (2-tailed)	.231	
	N	170	200

Objective: To analyze the relationship between a respondent's income and how much they are willing to spend on an electric vehicle (EV).

Correlation Analysis:

1. Pearson Correlation coefficient = 0.092
2. p-value = 0.231

Interpretation:

There is a very weak positive correlation between income and willingness to spend on an EV. However, since the p-value is > 0.05, this relationship is not statistically significant. This implies that income alone does not reliably predict how much someone is willing to spend on an EV.

Table 2:

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What is your income?[b]	.	Enter

a. Dependent Variable: How much are you willing to spend on an electric vehicle (in INR)?

b. All requested variables entered.

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.092[a]	.009	.003	1.464

a. Predictors: (Constant), What is your income?

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.102	1	3.102	1.448	.231[b]
	Residual	360.051	168	2.143		
	Total	363.153	169			

a. Dependent Variable: How much are you willing to spend on an electric vehicle (in INR)?

b. Predictors: (Constant), What is your income?

Table 3:

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	2.633	.271		9.717	.000
	What is your income?	.076	.063	.092	1.203	.231

a. Dependent Variable: How much are you willing to spend on an electric vehicle (in INR)?

Table 4:

Regression Analysis:

Model Summary:

1. **R^2 = 0.009**: Only **0.9%** of the variance in EV spending can be explained by income.
2. **Adjusted R^2 = 0.003**: Suggests minimal predictive power.

ANOVA Results:

1. **F = 1.448**, **p = 0.231**
   Since **p > 0.05**, the model is **not statistically significant**, meaning income does not significantly predict spending on EVs.

Coefficients:

1. Intercept (Constant) = **2.633**
2. Income Coefficient (B) = **0.076**, p = **0.231**

Again, since the p-value is > 0.05, the predictor is **not statistically significant**.

Summary Insights- Income has **no significant impact** on how much a person is willing to spend on an EV. This suggests that **other factors**—such as **environmental concern, awareness, brand perception, or utility**—may play a larger role in determining EV purchase intentions and price sensitivity.

Test 2: Regression Analysis: Likelihood of Buying an EV from Maruti Suzuki vs Key Independent Variables

Objective of the Test:
To understand how three factors influence a respondent's likelihood of buying an electric vehicle (EV) from Maruti Suzuki:

1. Accessibility of charging infrastructure
2. Comfort levels of EVs vs traditional vehicles
3. Key purchase considerations (e.g., cost, mileage)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?[b]	.	Enter

a. Dependent Variable: How likely are you to consider purchasing an electric vehicle from Maruti Suzuki once it is available?

b. All requested variables entered.

Table 5:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.119[a]	.014	-.001	1.103

a. Predictors: (Constant), What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?

Table 6:

Model Summary

1. $R^2 = 0.014$ → The model explains only 1.4% of the variation in the dependent variable.
2. Adjusted $R^2 = -0.001$ → A negative value suggests that adding variables does not improve model performance.
3. Conclusion: The model is not a strong predictor of purchase likelihood.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.412	3	1.137	.935	.425[b]
	Residual	238.268	196	1.216		
	Total	241.680	199			

a. Dependent Variable: How likely are you to consider purchasing an electric vehicle from Maruti Suzuki once it is available?

b. Predictors: (Constant), What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?

Table 7:

ANOVA Table

1. $F = 0.935$, $p = 0.425$ → The model is statistically insignificant.
2. Conclusion: The three predictors together do not significantly impact the likelihood of buying an EV from Maruti Suzuki.

Coefficients[a]

Model		Unstandardized Coefficients B	Unstandardized Coefficients Std. Error	Standardized Coefficients Beta	t	Sig.
1	(Constant)	1.561	.627		2.490	.014
	How do you feel about the availability and accessibility of charging infrastructure for EVs in India?	.028	.124	.019	.222	.824
	What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?	.185	.131	.114	1.408	.161
	What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three)	.080	.070	.089	1.140	.256

a. Dependent Variable: How likely are you to consider purchasing an electric vehicle from Maruti Suzuki once it is available?

Table 8:

All p-values > 0.05, hence none of the predictors are statistically significant.

The regression model indicates a weak and statistically insignificant relationship between customer perceptions (charging infra, comfort, key buying factors) and their willingness to consider an EV from Maruti Suzuki. This suggests that other factors—possibly brand image, pricing, or awareness—may play a more pivotal role and should be explored further.

Test 3: Regression Analysis: General Consideration of EV Purchase vs Key Consumer Factors

Objective of the Test:
To determine how the following factors influence whether respondents have considered purchasing an electric vehicle (EV):

1. Accessibility of charging infrastructure
2. Comfort levels of EVs vs traditional vehicles
3. Key purchase considerations (e.g., cost, range, reliability)

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?[b]	.	Enter

a. Dependent Variable: Have you considered purchasing an electric vehicle (EV)?

b. All requested variables entered.

Table 9 & 10:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.435[a]	.189	.177	.406

a. Predictors: (Constant), What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?

The model explains 18.9% of the variation in whether respondents have considered purchasing an EV. This is a moderate level of explanatory power and indicates that the predictors have some relevance.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	7.546	3	2.515	15.249	.000[b]
	Residual	32.329	196	.165		
	Total	39.875	199			

a. Dependent Variable: Have you considered purchasing an electric vehicle (EV)?

b. Predictors: (Constant), What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three), What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?, How do you feel about the availability and accessibility of charging infrastructure for EVs in India?

Table 11:

The model is statistically significant ($p < 0.001$), meaning the three predictors collectively influence the likelihood of EV consideration.

Table 12:

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.242	.231		5.378	.000
	How do you feel about the availability and accessibility of charging infrastructure for EVs in India?	-.090	.046	-.150	-1.986	.048
	What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?	-.026	.048	-.039	-.536	.593
	What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three)	-.135	.026	-.370	-5.211	.000

a. Dependent Variable: Have you considered purchasing an electric vehicle (EV)?

1. Charging Infrastructure: Significant; people less satisfied with infrastructure are less likely to consider EVs.
2. Comfort Concerns: Not a significant factor.
3. Purchase Considerations: Highly significant; cost, reliability, and related factors strongly impact consideration.

The regression results suggest that concerns around charging infrastructure and key purchase-related factors (like cost, mileage,

and maintenance) significantly affect whether respondents have considered purchasing an EV. Comfort concerns, however, do not play a major role. Future strategies should prioritize improving infrastructure and addressing core buyer concerns to increase EV adoption.

Test 4: Association Between Age and Preferred Source of Information About EVs

Objective of the Test:
To examine whether a relationship exists between a respondent's age group and how they learn about electric vehicles (EVs).

Table 13:

NPar Tests

Chi-Square Test

Frequencies

What is your Age?

	Observed N	Expected N	Residual
1	1	33.3	-32.3
2	62	33.3	28.7
3	77	33.3	43.7
4	44	33.3	10.7
5	12	33.3	-21.3
6	4	33.3	-29.3
Total	200		

How do you usually learn about electric vehicles and their features?

	Observed N	Expected N	Residual
1	87	40.0	47.0
2	59	40.0	19.0
3	42	40.0	2.0
4	9	40.0	-31.0
5	3	40.0	-37.0
Total	200		

1. The age distribution is not uniform, with most responses coming from middle age brackets (2–4).
2. Most people learn about EVs through the top 2 sources (presumably online/social media and word of mouth, though actual labels should be added from survey data).

Test Statistics

	What is your Age?	How do you usually learn about electric vehicles and their features?
Chi-Square	156.100[a]	122.600[b]
df	5	4
Asymp. Sig.	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 33.3.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

Table 14:

Both variables show statistically significant deviation from

expected frequencies ($p < 0.001$), indicating non-random distribution.

The chi-square test confirms that there is a statistically significant association between a respondent's age group and how they usually learn about electric vehicles. Younger and middle-aged individuals dominate the sample and primarily use popular or digital channels, while older age groups are underrepresented. This insight highlights the importance of age-targeted EV awareness strategies, especially for older demographics.

Test 5: Impact of Car Ownership on Awareness of Maruti Suzuki's EV Launch: A Test of Brand Awareness

Objective of the Test:
To explore if there's a relationship between car ownership and awareness of Maruti Suzuki's plan to launch six EVs by 2031 — as a measure of brand awareness.

Table 15:

NPar Tests

Chi-Square Test

Frequencies

Do you or your family own a car?

	Observed N	Expected N	Residual
0	18	100.0	-82.0
1	182	100.0	82.0
Total	200		

Are you aware of Maruti Suzuki's plan to launch six EVs by 2031?

	Observed N	Expected N	Residual
0	97	100.0	-3.0
1	103	100.0	3.0
Total	200		

1. The vast majority (91%) of respondent's report owning a car, indicating a skewed sample toward current car owners.
2. Awareness is relatively balanced (~51.5% aware), suggesting moderate brand penetration.

Test Statistics

	Do you or your family own a car?	Are you aware of Maruti Suzuki's plan to launch six EVs by 2031?
Chi-Square	134.480[a]	.180[a]
df	1	1
Asymp. Sig.	.000	.671

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 100.0.

Table 16:

1. The distribution of car ownership is significantly different from the expected ($p < 0.001$), confirming the skew toward owners.
2. The awareness of Maruti Suzuki's EV plans is not significantly different from expected random distribution ($p = 0.671$), indicating no strong brand recall or targeted awareness.

The chi-square analysis shows that awareness of Maruti Suzuki's

plan to launch six EVs by 2031 is not significantly associated with car ownership. Despite a high percentage of car owners in the sample, awareness levels are balanced and statistically insignificant. This indicates a gap in brand-specific EV marketing, even among potential customers who already own vehicles.

Test 6: Relationship Between Type of Currently Owned Car and Consideration of EV Purchase

Objective of the Test:
To evaluate whether the type of car currently owned affects whether a person has considered purchasing an EV.

NPar Tests

Chi-Square Test

Frequencies

If you own a car, what type of car do you currently own?

	Observed N	Expected N	Residual
1	92	40.0	52.0
2	12	40.0	-28.0
3	64	40.0	24.0
4	12	40.0	-28.0
5	20	40.0	-20.0
Total	200		

Have you considered purchasing an electric vehicle (EV)?

	Observed N	Expected N	Residual
0	55	100.0	-45.0
1	145	100.0	45.0
Total	200		

Table 17:

1. There is an uneven ownership pattern, especially with Car Type 1 being overrepresented.
2. A large majority (72.5%) have considered purchasing an EV, indicating strong intent.

Test Statistics

	If you own a car, what type of car do you currently own?	Have you considered purchasing an electric vehicle (EV)?
Chi-Square	131.200[a]	40.500[b]
df	4	1
Asymp. Sig.	.000	.000

a. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 40.0.

b. 0 cells (0.0%) have expected frequencies less than 5. The minimum expected cell frequency is 100.0.

Table 18:

1. Both variables are statistically significant ($p < 0.001$).
2. The type of car owned has a strong association with the likelihood of considering an EV.

The chi-square test reveals a statistically significant relationship between the type of car currently owned and whether a person has considered purchasing an EV. Individuals who own certain car types (notably Type 1 and Type 3) are more inclined toward EV consideration. This suggests that targeted marketing toward these car owner segments may be particularly effective in increasing EV adoption.

Test 7: Association Between Profession and Car Ownership

Correlations

Correlations

		What is your Profession?	Do you or your family own a car?
What is your Profession?	Pearson Correlation	1	-.460**
	Sig. (2-tailed)		.000
	N	200	200
Do you or your family own a car?	Pearson Correlation	-.460**	1
	Sig. (2-tailed)	.000	
	N	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

Table 19:

Objective of the Test:
To examine the relationship between a respondent's profession and whether they or their family own a car, as a potential indicator of affluence and mobility.

Interpretation:

1. The correlation is moderately strong and negative.
2. It is statistically significant at the 0.01 level, meaning the result is highly reliable.
3. Conclusion: As the professional category moves from students to higher employment groups (assuming coded numerically), the likelihood of not owning a car decreases. In other words, higher professional status is associated with a greater likelihood of car ownership.

The analysis shows a statistically significant negative correlation between profession and car ownership, suggesting that higher professional status is associated with increased likelihood of owning a car. This insight could help segment potential EV customers based on occupation, prioritizing working professionals and upper-income groups for targeted marketing.

Test 8: Multiple Regression: Impact of Income and Profession on Car Ownership

Objective of the Test:

To evaluate how profession and income influence whether someone or their family owns a car, reflecting affluence and potential interest in owning or transitioning to an EV.

Regression

Variables Entered/Removed[a]

Model	Variables Entered	Variables Removed	Method
1	What is your income?, What is your Profession?[b]	.	Enter

a. Dependent Variable: Do you or your family own a car?

b. All requested variables entered.

Table 20 & 21:

Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.459[a]	.211	.201	.269

a. Predictors: (Constant), What is your income?, What is your Profession?

1. Interpretation: The model explains 21.1% of the variance in car ownership.
2. Conclusion: This is a moderate explanatory power—decent for behavioural or socioeconomic data.

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.222	2	1.611	22.272	.000[b]
	Residual	12.078	167	.072		
	Total	15.300	169			

a. Dependent Variable: Do you or your family own a car?

b. Predictors: (Constant), What is your income?, What is your Profession?

Table 22:

1. Interpretation: The overall regression model is statistically significant.
2. Conclusion: Profession and income together significantly predict car ownership.

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	1.161	.061		18.901	.000
	What is your Profession?	-.125	.019	-.458	-6.658	.000
	What is your income?	-.006	.012	-.033	-.483	.630

a. Dependent Variable: Do you or your family own a car?

Table 23:

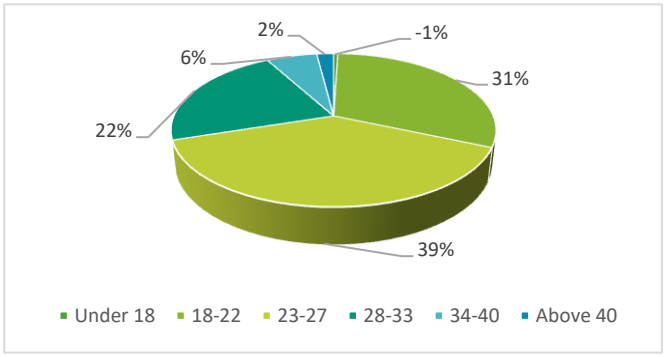
1. Profession: Has a significant negative impact on car ownership ($p < 0.001$).
2. Income: Not statistically significant ($p = 0.630$).
3. Conclusion: Profession is a key predictor of car ownership, while income is not a strong factor in this model.

The regression model shows that profession significantly predicts car ownership, while income does not have a statistically meaningful impact. The model explains approximately 21% of the variance in car ownership. This implies that professional identity and lifestyle may be more influential in determining vehicle ownership than income alone, a valuable insight for targeting potential EV buyers.

1.1.Data Analysis

This chapter presents the detailed analysis of primary data collected through surveys aimed at understanding consumer perceptions, preferences, and attitudes towards electric vehicles (EVs), specifically in the context of **Maruti Suzuki's planned entry into the Indian EV market**. With inputs from 200 respondents, the data offers critical insights into the demographic profile of potential EV consumers, their behavioral patterns, and influencing factors related to EV adoption. The following sections analyze each question from the survey to draw meaningful conclusions that will guide strategic marketing, product design, and communication decisions for Maruti Suzuki's EV offerings.

Figure 1: Age-wise Distribution of Respondents



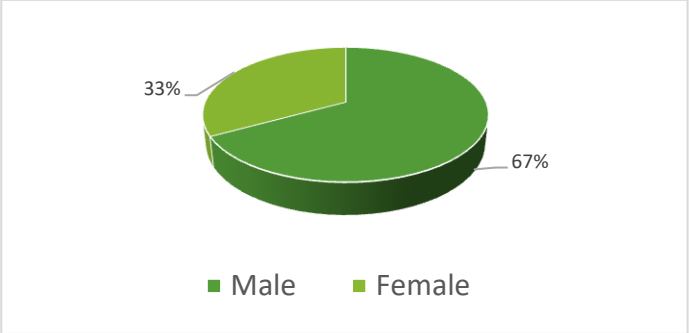
Analysis: The marketing research reveals that **23–27 years** is the most represented age group, comprising **38.5%** of the total sample. This indicates a youthful skew in the participant base, with a strong inclination toward EV awareness and interest within this younger demographic.

The **18–22 age group**, forming **31%**, also demonstrates substantial participation, reflecting early-stage consumer interest in sustainable mobility. Together, over two-thirds of the sample are aged between **18 and 27**, emphasizing the relevance of targeted digital campaigns and pricing strategies aimed at **young, tech-savvy individuals**.

Older demographics (aged **34 and above**) make up just **8%**, pointing to potential barriers such as technological apprehension, range anxiety, or attachment to traditional vehicles. However, their inclusion suggests opportunities for **targeted awareness campaigns and incentives** to boost EV adoption across broader age brackets.

This age-based segmentation is vital in shaping **Maruti Suzuki's marketing and product positioning** as it forays into the EV sector.

Figure 2: Gender Distribution of Respondents



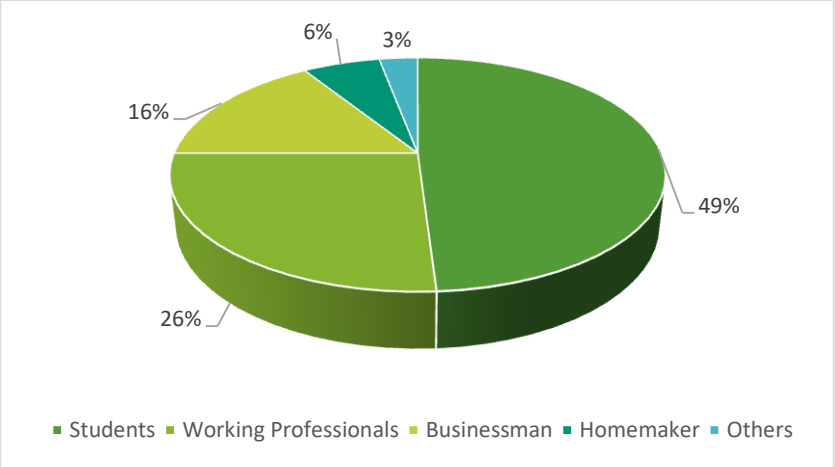
Analysis: The data reflects a significant **gender imbalance**, with **67% male** and **33% female** respondents. This skew may indicate either a **greater interest among men in the EV space** or **unequal access and participation** in automotive-related surveys.

From a marketing standpoint, this suggests that **current EV communications and engagement strategies might be more aligned with male preferences**. However, to ensure inclusive and widespread EV adoption, especially as Maruti Suzuki plans its EV entry, it's crucial to **address the gender gap** by:

- Designing **gender-sensitive communication strategies**,
- Promoting **female-centric EV use cases** (e.g., safety, ease of use, affordability), and
- Enhancing **outreach in communities** where women play a central role in household vehicle purchase decisions.

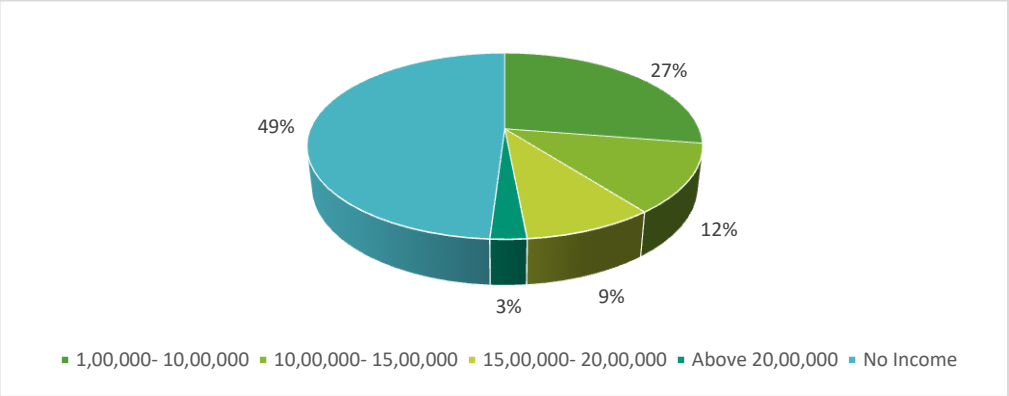
A more balanced gender representation will contribute to **holistic consumer insights** and enable Maruti Suzuki to develop a **diverse EV consumer base**.

Figure 3: Professional Background of Respondents



Analysis: The study reveals a notable representation of students, accounting for 49% of the respondents, which indicates strong engagement from the younger, academically involved demographic. Alongside this, the sample showcases a diverse professional landscape — 26% are working professionals, 16% are businessmen, 6% are homemakers, and 3% belong to other categories. This mix ensures a multifaceted view of consumer perspectives on electric vehicles (EVs), vital for shaping a marketing strategy that appeals to varied occupational segments.

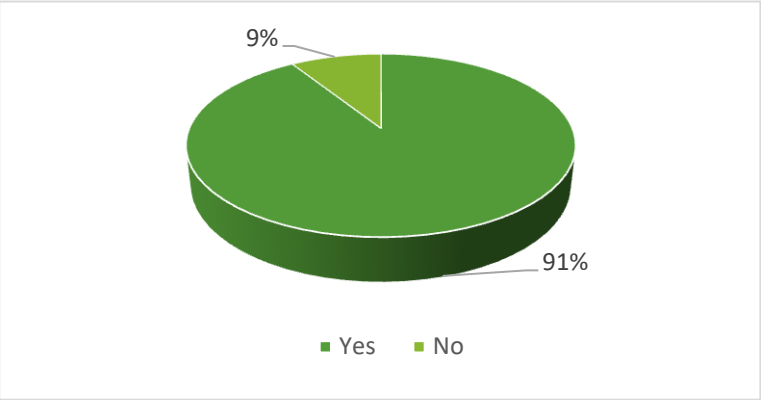
Figure 4: Income Distribution of Respondents



Analysis: Income data reveals that nearly half (49%) of respondents reported no income, reinforcing the significant student representation in the survey. Additionally, 27.5% of participants fall within the ₹1,00,000–₹5,00,000 per annum range, while 12% earn ₹10,00,000 or more annually.

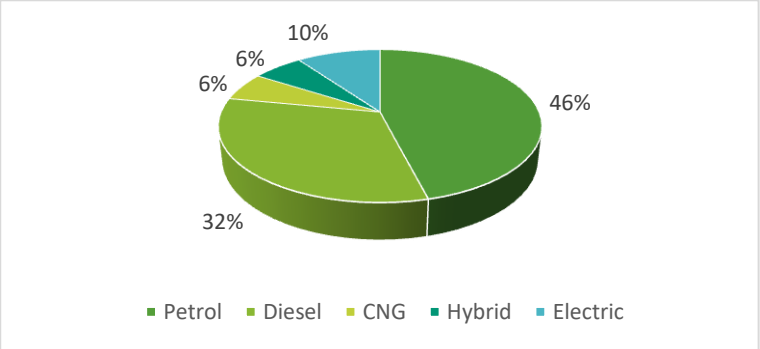
This wide spread in income levels highlights the importance of tailoring marketing and pricing strategies for EVs to accommodate both low-income and higher-income groups. It also underlines the need for financing options or subsidies to make EVs more accessible to price-sensitive consumers.

Figure 5: Car Ownership Trends Among Respondents



Analysis: The findings indicate a striking 91% of respondents or their family members currently own a car. This high ownership rate suggests a well-established familiarity with personal vehicles within the surveyed population. Such a trend is crucial for electric vehicle (EV) marketers, as it reflects a pre-existing user base potentially open to transitioning to EVs, provided the right incentives and value propositions are offered.

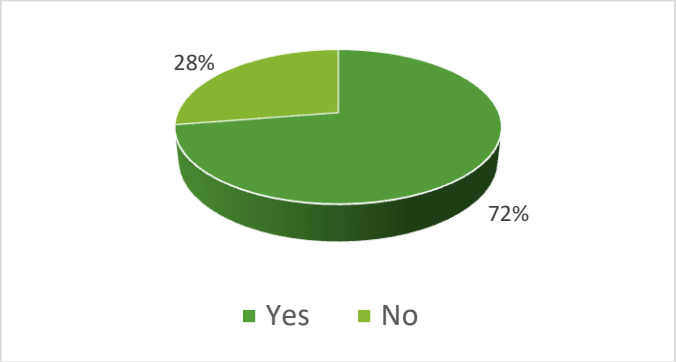
Figure 6: Types of Vehicles Currently Owned



Analysis: Among the car-owning respondents, petrol vehicles dominate with a 50.55% share, followed by diesel at 35.16%. A smaller, yet notable segment has adopted alternative fuel vehicles: CNG and Hybrid (both at 6.59%), and Electric vehicles at 1.10%. This distribution illustrates a

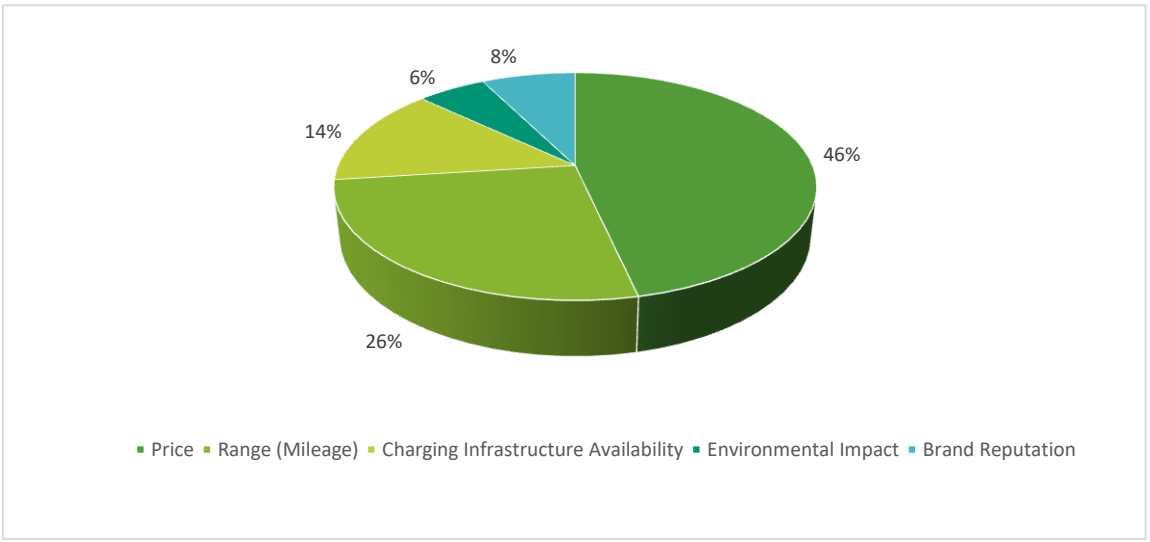
growing, albeit limited, openness to non-conventional fuel options. These insights are instrumental for framing EV marketing strategies — pointing toward the need for awareness-building and incentive structures to accelerate the shift from traditional fuels to greener alternatives.

Figure 7: Interest in Electric Vehicle (EV) Purchase



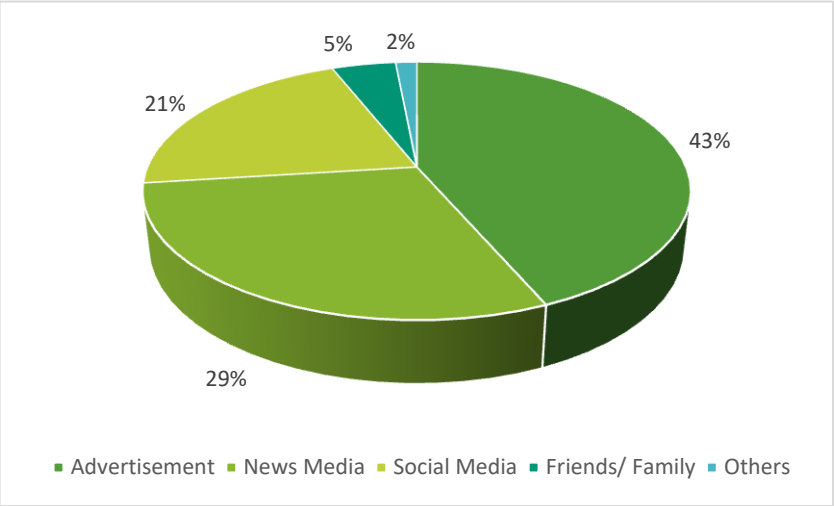
Analysis: The data reveals encouraging interest levels, with **72.5%** of respondents considering purchasing an Electric Vehicle (EV). This indicates a significant **market readiness** for EVs, reflecting rising awareness and inclination toward sustainable mobility options. For marketers and policymakers, this represents a critical opportunity to convert this interest into action through targeted campaigns, incentives, and infrastructure development.

Figure 8: Key Purchase Considerations for Electric Vehicles



Analysis: When asked about the most important factors influencing their decision to purchase an EV, **Price** emerged as the most critical factor (46.5%), followed by **Range (26.5%)** and **Charging Infrastructure Availability (14%)**. Lesser emphasis was placed on **Environmental Impact (5.5%)** and **Brand Reputation (7.5%)**. These findings highlight that **cost-effectiveness and practicality** remain top priorities for potential buyers. Addressing these through competitive pricing, improved mileage, and robust charging networks will be crucial to drive adoption and market penetration of EVs.

Figure 9: Channels of Awareness about EVs and Their Features



Analysis: When it comes to learning about electric vehicles and their features, **advertisements** are the leading source of information, cited by **43.5%** of respondents, followed by **news media (29.5%)** and **social media (21%)**. Only a small fraction relies on **friends/family (4.5%)** or **other sources (1.5%)**.

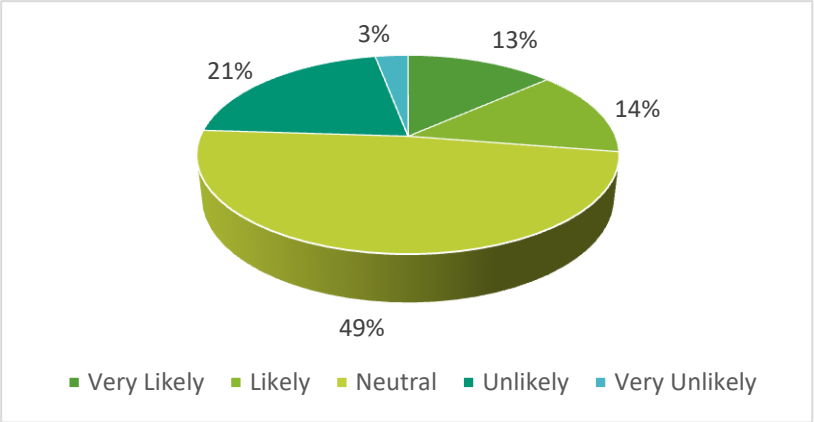
This indicates that **digital and mass media channels** (ads, news, and social media) play a **critical role** in shaping consumer awareness. The dominance of these platforms suggests that marketing strategies for EVs should focus heavily on **targeted digital campaigns**, influencer partnerships, and mass media storytelling to maximize visibility and impact.

Figure 10: Awareness of Maruti Suzuki's EV Plans

Analysis: A fairly balanced response is seen with **51.5%** of participants aware of **Maruti Suzuki's plan to launch six EVs by 2031**, while **48.5%** remain unaware. This signals a **moderate brand communication reach**, showing that while half the market has been engaged, the other half still needs to be informed.

This insight highlights the need for **stronger and more visible communication strategies** from Maruti Suzuki to build top-of-mind recall, especially as they aim to compete in the growing EV segment. Creating buzz around their future EV roadmap could strengthen consumer connection and brand trust.

Figure 11: Likelihood of Purchasing an EV from Maruti Suzuki



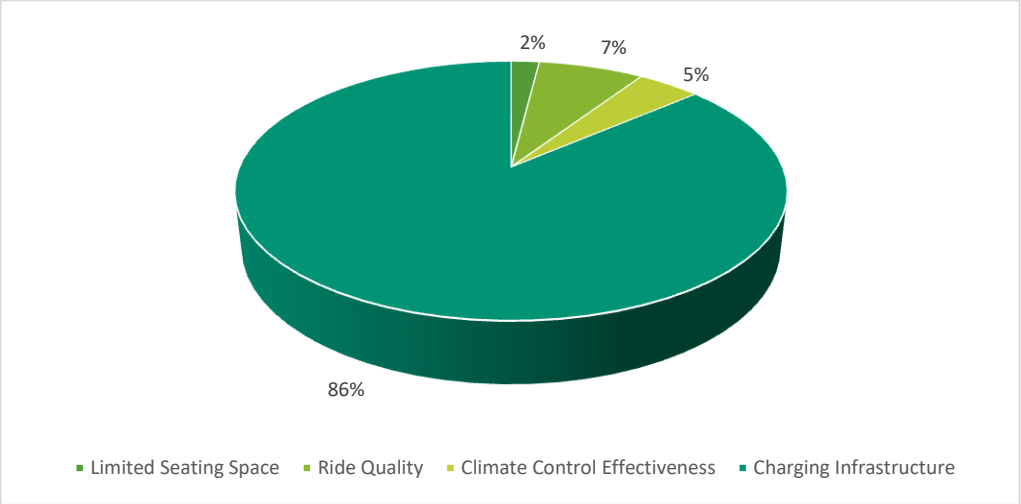
Analysis: The data reveals that **48.5%** of respondents are **neutral** toward purchasing an electric vehicle from Maruti Suzuki once it becomes available. Meanwhile, **27.5%** show a positive inclination (13.5% *very likely* and 14% *likely*), whereas **24%** are either *unlikely* or *very unlikely*.

This neutrality highlights a **major opportunity and challenge**:

- **Opportunity**: The undecided majority presents a **large, influenceable segment** that can be converted with the right marketing strategy.
- **Challenge**: The brand currently lacks a strong emotional or performance-based pull in the EV segment.

To convert the neutral and hesitant consumers, **targeted marketing campaigns**, brand awareness drives, and clear **value propositions** regarding performance, range, and affordability will be crucial.

Figure 12: Comfort Concerns Regarding EVs vs Traditional Vehicles



Analysis: An overwhelming **88%** of respondents cited **charging infrastructure** as their **main comfort-related concern** when comparing EVs to traditional vehicles. Other concerns, like **ride quality (7.5%)**, **climate control (4.5%)**, and **limited space (2%)**, were minimal.

This sends a clear message:

- **Consumer hesitation is not about comfort or vehicle design**, but about **logistical convenience**.
- Without visible and accessible **charging networks**, consumers are less likely to make the switch—even if they are otherwise open to it.

Strategic Implication:

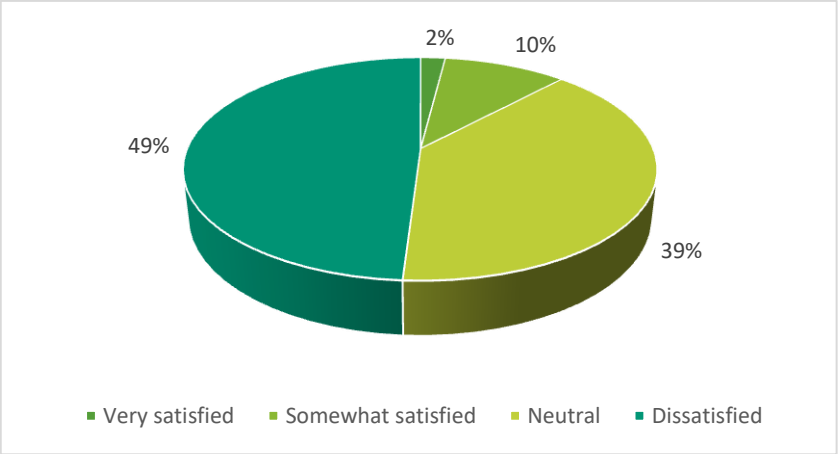
Efforts should focus on:

- Promoting **public-private collaborations** to expand charging infrastructure.
- Creating **communication campaigns** that show progress in infrastructure

development.

- Offering solutions like **at-home charging kits** or **charging station maps** integrated with vehicle systems.

Figure 13: Sentiment Towards Availability & Accessibility of Charging Infrastructure



Analysis:

Findings:

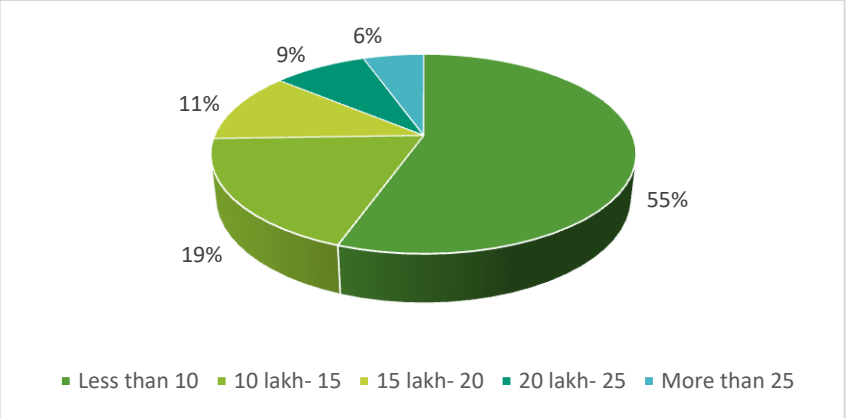
- A significant **49%** of respondents are **dissatisfied** with the current availability of EV charging infrastructure.
- **39%** remain **neutral**, while only **17%** report any level of satisfaction (10% somewhat satisfied, 7% very satisfied).

Interpretation: This indicates a **critical infrastructural gap** in the Indian EV ecosystem. The dissatisfaction from nearly half the participants, coupled with neutral responses from another large chunk, reflects that **charging convenience is a key barrier** to EV adoption.

Strategic Implications:

- Stakeholders must prioritize **rapid infrastructure development**, especially in semi-urban and urban zones.
- Maruti Suzuki and other EV brands must consider **partnering with government or private players** to scale up the network.
- Communication campaigns should focus on informing users about **existing and upcoming charging stations**, **home charging solutions**, and **battery swapping options**.

Figure 14: Willingness to Spend on an Electric Vehicle (INR)



Analysis:

Findings:

- A majority (**55.5%**) are willing to spend **less than ₹10 lakh** on an EV.
- Only **19%** are open to spending between **₹10–15 lakh**, and this willingness drops as the price increases.
- Just **5.5%** are willing to pay over **₹25 lakh**, signaling limited interest in premium EVs.

Interpretation: Affordability is the **single most important factor** influencing EV purchase decisions. The price sensitivity of Indian consumers is evident from the steep drop in willingness as budget increases.

Strategic Implications:

- Brands like Maruti Suzuki should **focus on budget-friendly EV models** under ₹10 lakh, with high value-for-money perception.
- Financing options, subsidies, and **low maintenance costs** must be highlighted in marketing efforts.
- A **cost-benefit narrative** emphasizing long-term savings (fuel, maintenance, government incentives) could help convert hesitant buyers.

CHAPTER 5: INSIGHTS AND RECOMMENDATIONS

5.1. Insights:

1. **Charging Infrastructure Dissatisfaction:**
   A significant portion of respondents (49%) expressed dissatisfaction with the current availability and accessibility of charging infrastructure in India. This highlights a major barrier to EV adoption, suggesting that the ecosystem is still underdeveloped.

2. **Affordability is Crucial:**
   Over 55.5% of consumers indicated a preference for electric vehicles priced below ₹10 lakh. This demonstrates a strong sensitivity to price and underlines affordability as a decisive factor in EV purchase decisions.

3. **Neutral Attitude Towards Infrastructure:**
   39% of respondents remained neutral about charging infrastructure, indicating a lack of strong awareness or experience with EVs — a sign that the market is still nascent and consumers are in the early stages of engagement.

4. **Low Willingness to Invest in Premium EVs:**
   Only a small fraction (5.5%) of respondents were open to spending more than ₹25 lakh, indicating limited demand for premium electric vehicles in the current market.

5.2. Recommendations:

1. **Strengthen Charging Infrastructure:**
   Maruti Suzuki and industry stakeholders should collaborate with government agencies and private players to expand and improve the EV charging network, particularly in Tier 1 and Tier 2 cities. This would alleviate range anxiety and improve user confidence.

2. **Develop Affordable EV Models:**
   Given the price expectations of the majority, Maruti Suzuki should focus on launching compact and mid-size electric vehicles under ₹10 lakh, leveraging existing production capabilities to

reduce costs.

3. **Consumer Awareness Campaigns:** Launch informative marketing campaigns to educate the public about EV benefits, subsidies, and real-world use cases. This will shift neutral or indifferent attitudes towards active consideration.

4. **Government Incentives and Partnerships:** Maruti Suzuki should work closely with policy makers to advocate for continued subsidies, tax benefits, and infrastructure investment, making EVs more attractive for budget-conscious consumers.

5. **Leverage Brand Trust:** As a trusted automobile brand, Maruti Suzuki has the opportunity to become a pioneer in mass EV adoption. Highlighting safety, reliability, and cost-efficiency will resonate strongly with the Indian middle-class market.

CHAPTER 6: CONCLUSION

The growing environmental consciousness, rising fuel costs, and favourable government policies are gradually shifting the Indian automobile market toward electric vehicles (EVs). This study sheds light on consumer perceptions and preferences regarding EVs, with a specific focus on the brand equity and strategic potential of Maruti Suzuki in this evolving space.

The findings reveal that while there is increasing curiosity and cautious optimism among Indian consumers, several barriers hinder mass adoption. The most prominent challenges include the inadequate availability of charging infrastructure, limited driving range, and higher upfront costs. A majority of respondents indicated a strong preference for EVs priced below ₹10 lakh, reinforcing the idea that affordability is a key decision-making factor. Additionally, the study highlighted that many consumers remain neutral or underinformed about the EV ecosystem, indicating the need for greater awareness and outreach.

Despite these challenges, the opportunity for Maruti Suzuki to lead India's EV revolution is immense. With its deep-rooted presence in the Indian market, trusted reputation, and extensive dealership network, Maruti Suzuki is well-positioned to address consumer concerns and drive the adoption of affordable electric mobility solutions. By investing in R&D, introducing cost-effective EV models, and partnering with stakeholders to enhance charging infrastructure, Maruti can bridge the gap between consumer expectations and market offerings.

In conclusion, while the transition to electric vehicles in India is still in its early stages, proactive strategies focused on accessibility, education, and affordability can accelerate this shift. Maruti Suzuki, with its legacy of mass-market innovation, has the potential to democratize electric mobility in India — turning today's consumer hesitations into tomorrow's widespread adoption.

REFERENCES

- Buhmann, Kathrin & Josep, Rialp. (2023). Consumers' preferences for electric vehicles: The role of status and reputation. *Transportation Research Part D: Transport and Environment*. 114. 103530. 10.1016/j.trd.2022.103530.
- Marcello Contestabile, D. G. (2012). Electric Vehicles: A Synthesis of the Current Literature with a Focus on Economic and Environmental Viability.
- Acharya S. Analyzing consumer attitudes towards electric vehicle purchasing intentions in Spain: Technological limitations and vehicle confidence. *Technol Forecasting Soc Change.* 2019;6(1):77–102.
- Kishore S. Tupe O. Consumer perception of electric vehicles in India. *European J Mol Clin Med.* 2020;7(8):4861–9.
- Nagpal A. Consumers' Perception towards Electric Vehicles in India. 2021;57(1):4043–50.
- Bansal P, Kumar RR, Raj A, Dubey S, Graham DJ. Willingness to Pay and Attitudinal Preferences of Indian Consumers for Electric Vehicles. *Energy Econ.* 2021; 100:105340.
- Varghese AT, Abhilash VS, Pillai SV. A Study on Consumer Perception and Purchase Intention of Electric Vehicles in India. *Asian J Econ.* 2021;4(2):13–25.
- Parmar A, Pradhan T. A study on consumer perception towards e vehicle in Vadodara city. *Int J Creat Res Thoughts.* 2021;9(5):2320–882.
- Adhikari S, Jalan N, Anute N. Customers' Perception about electric vehicles. *J Manag Res Anal* 2022;9(3):144-149.
- Janardan Prasad Kesari, Y. S. (2019). Opportunities and Scope for Electric Vehicles in India. *IJME Journal*, 8.
- Mr. A. Rakesh Kumar, D. S. (2019). Electric Vehicles for India: Overview and Challenges. *IEEE India*, 5.

Websites

- **https://www.marutisuzuki.com/**
- **https://studybay.com/blog/organization-structure-of-maruti-suzuki-business/**
- **https://www.ukessays.com/essays/business/organization-structure-of-maruti-suzuki-business-essay.php**
- **https://www.indiatoday.in/auto/cars/story/car-sales-in-fast-lane-another-record-month-for-industry-as-maruti-hits-all-time-high-2457126-2023-11-02**
- **https://www.researchgate.net/publication/366899483_Innovations_in_the_Indian_Automobile_Industry_An_Industry_Analysis_of_Maruti_Suzuki_India_Limited**
- **https://www.marutisuzuki.com/corporate/media/press-releases/2023**

APPENDIX

Questionnaire

1. What is your Age?
   - ○ Under 18
   - ○ 18–22
   - ○ 23–27
   - ○ 28–33
   - ○ 34–40
   - ○ Above 40
2. What is your Gender?
   - ○ Male
   - ○ Female
   - ○ Other: _____
3. What is your Profession?
   - ○ Student
   - ○ Working Professional
   - ○ Businessman
   - ○ Homemaker
   - ○ Other than the above
4. What is your income?
   - ○ ₹5,00,000 – ₹10,00,000 per annum
   - ○ ₹10,00,000 – ₹15,00,000 per annum
   - ○ ₹15,00,000 – ₹20,00,000 per annum
   - ○ Above ₹20,00,000 per annum
   - ○ No Income
   - ○ Other: _____
5. Do you or your family own a car?
   - ○ Yes
   - ○ No
6. If you own a car, what type of car do you currently own?
   Petrol
   - ○ CNG
   - ○ Diesel
   - ○ Hybrid
   - ○ Electric
7. Have you considered purchasing an electric vehicle (EV)?
   - ○ Yes
   - ○ No
8. What factors are most important to you when considering the purchase of an electric vehicle? (Select up to three)
   - ○ Price
   - ○ Range (mileage)
   - ○ Charging Infrastructure Availability
   - ○ Environmental Impact
   - ○ Brand Reputation
9. How do you usually learn about electric vehicles and their features?
   - ○ Advertisement
   - ○ News Media
   - ○ Social Media
   - ○ Friends/Family
   - ○ Others

10. Are you aware of Maruti Suzuki's plan to launch six EVs by 2031?
    - ○ Yes
    - ○ No
11. How likely are you to consider purchasing an electric vehicle from Maruti Suzuki once it is available?
    - ○ Very Likely
    - ○ Likely
    - ○ Neutral
    - ○ Unlikely
    - ○ Very Unlikely
12. What concerns do you have regarding the comfort levels of EVs compared to traditional vehicles?
    - ○ Limited Seating Space
    - ○ Ride Quality
    - ○ Climate Control Effectiveness
    - ○ Charging Infrastructure
13. How do you feel about the availability and accessibility of charging infrastructure for EVs in India?
    - ○ Very Satisfied
    - ○ Somewhat Satisfied
    - ○ Neutral
    - ○ Dissatisfied
14. How much are you willing to spend on an electric vehicle (in INR)?
    - ○ Less than ₹10 lakh
    - ○ ₹10 lakh – ₹15 lakh
    - ○ ₹15 lakh – ₹20 lakh
    - ○ ₹20 lakh – ₹25 lakh
    - ○ More than ₹25 lakh

Major Project.docx

Delhi Technological University

Document Details

Submission ID
trn:oid::27535:96280828

Submission Date
May 16, 2025, 10:07 PM GMT+5:30

Download Date
May 16, 2025, 10:08 PM GMT+5:30

File Name
Major Project.docx

File Size
1.3 MB

64 Pages

12,107 Words

72,188 Characters

turnitin Page 1 of 70 - Cover Page Submission ID trnoid::27535:96280828

12% Overall Similarity

The combined total of all matches, including overlapping sources, for each database.

Filtered from the Report

- Bibliography
- Quoted Text
- Cited Text
- Small Matches (less than 10 words)

Match Groups

76 Not Cited or Quoted 12%
Matches with neither in-text citation nor quotation marks

0 Missing Quotations 0%
Matches that are still very similar to source material

0 Missing Citation 0%
Matches that have quotation marks, but no in-text citation

0 Cited and Quoted 0%
Matches with in-text citation present, but no quotation marks

Top Sources

9% Internet sources
1% Publications
8% Submitted works (Student Papers)

Integrity Flags

0 Integrity Flags for Review

No suspicious text manipulations found.

Our system's algorithms look deeply at a document for any inconsistencies that would set it apart from a normal submission. If we notice something strange, we flag it for you to review.

A Flag is not necessarily an indicator of a problem. However, we'd recommend you focus your attention there for further review.

turnitin Page 2 of 70 - Integrity Overview Submission ID trnoid::27535:96280828