PROMOTING EV AUTOMOBILE GLOBALLY WITH THE HELP OF DIGITAL MARKETING

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Declaration

I declare that this dissertation that I have submitted to Dublin Business School for the award of M.Sc. Digital Marketing and Analytics is the result of my own investigations, except where otherwise stated, where it is clearly acknowledged by references. Furthermore, this work has not been submitted for any other degree.

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Abstract

The purpose of this study is to promote electric vehicles using digital marketing techniques. The development of new energy vehicles is being encouraged by many nations throughout the world, thus electric vehicles are the way of the future. The primary objective of this dissertation is to assess the effectiveness of the promotion of the electric vehicles through digital marketing, which will be assessed using a survey questionnaire as the primary research technique. A study of the literature, an adaption of the survey, and the creation of the hypotheses are all part of the initial step. A survey questionnaire with 110 valid responses was constructed for the second stage, which will be more thoroughly detailed in this dissertation. The key finding of this study paper by the researchers is to confirm that customers make decisions about their purchases utilizing some digital material and advertisements, which significantly influences new purchasers.

Chapter 1. Introduction

The term "electromobility" refers to the trend of using electric power to propel automobiles for both personal and commercial purposes. These automobiles have at least one electric motor and get the majority of their power from the electrical grid. There are a number of ways this alternative electric vehicle propulsion technology might lead to the widespread adoption of fossil fuel-free, on-the-go transportation. There are five main types of cars with alternative propulsion systems, according the German Federal Government (2009) and Karle (2020). Vehicles that are powered only by electricity are known as battery electric vehicles (BEVs). Multiple sources attest that these automobiles have massive batteries that can be charged from external power sources (Federal Government of Germany, 2009; Karle, 2020; Kreyenberg, 2016; Tober, 2016; Yong et al., 2015). Furthermore, PHEVs are driven by both an internal combustion engine and an electric motor. Multiple sources (Federal Government of Germany, 2009; Kampker et al., 2018; Karle, 2020; Sanguesa et al., 2021; Tober, 2016) attest that the electric motor receives power from an external pluggable power source. Like plug-in hybrid electric automobiles, hybrid electric vehicles (HEVs) obtain their power from a combination of a traditional combustion engine and an electric motor (Federal Government of Germany, 2009). Due to their reliance on the energy generated by the internal combustion engine, hybrid electric vehicles (HEVs) cannot be plugged into the electrical grid (Federal Government of Germany, 2009; Kampker et al., 2018; Karle, 2020; Kreyenberg, 2016; Tober, 2016). Fuel cell electric vehicles (FCEVs) are also included, in addition to the aforementioned types. An electric motor in an FCEV runs on a mixture of compressed hydrogen made from natural gas and atmospheric oxygen. Only water is produced as a waste product from this procedure (German Federal Government, 2009; Kampker et al., 2018; Karle, 2020; Krems and Kreißig, 2021; Kreyenberg, 2016; Tober, 2016). Similarities exist between ER-EVs and BEVs (Federal Government of Germany, 2009; Kampker et al., 2018) due to the presence of a battery in both types of vehicles. In contrast to PHEVs and HEVs, whose combustion engines power both the wheels and the battery pack, ER-EVs (Federal Government of Germany, 2009; Kampker et al., 2018; Karle, 2020; Kreyenberg, 2016; Sanguesa et al., 2021; Yong et al., 2015) use their combustion engines only to charge the batteries. The pure electric vehicle (BEV), or EV for short in this paper, is the primary focus of this thesis. The increasing demand in the market for EVs is the driving force behind the decision to prioritize them. The "Mobility of the future" research by Burkert et al. (2021) confirms this trend by showing a dramatic increase in the number of electric passenger vehicles being registered in 2020 compared to 2019.

1.1 The history of electromobility

The concept of electromobility emerged within the automobile industry, coinciding with the development and manufacturing of vehicles powered by internal combustion engines. During this period, research on electric vehicles was also conducted. In the year 1881, Gustav Trouvé, a notable French inventor and engineer, successfully installed an electric motor onto a tricycle. In 1882, Werner Siemens unveiled a carriage propelled by an electric motor, marking the passage of one year since its first development. The vehicle known as the "Lohner-Porsche," which was designed by Ferdinand Porsche in 1900, emerged as a significant milestone in the realm of electric transportation, being widely recognized as the inaugural functional electric vehicle. (Karle, 2020; Korthauer, 2013) - These references indicate the sources that have been cited in the text. Despite being developed concurrently, electric cars were unable to effectively compete with vehicles powered by internal combustion engines. During that period, a significant challenge was the limited operational distance of the electric vehicle, rendering it unable to effectively rival the combustion engine. Consequently, the electric car failed to gain widespread acceptance. In contemporary times, the issue pertaining to limited range is addressed by the utilization of high-capacity lithium-ion batteries. Lithium cells have been employed as energy storage units in autos for a number of years, owing to their notable energy density. According to Karle (2020) and Korthauer (2013), According to Nafari and Mazoyer (2019), there has been a notable surge in the sales of electric cars in Germany, marking a significant milestone in the realm of electric vehicle history. The subsidization of automobiles utilizing alternative fuels, such as high-performance lithium-ion batteries, has been implemented in several countries, including Germany since 2019, with the aim of promoting sustainability in road traffic (Federal Government of Germany, 2021).

The release of greenhouse gases and other pollutants presents a significant challenge to the preservation of the climate. Transportation emissions, which are produced by automobiles among other contributing factors, are seen as a component of this peril. According to the Environment Federal Office Germany (2021), the transport industry in Germany emitted a total of 146 million tons of carbon dioxide (CO_2) in the year 2020. In recent years, there has been a rapid proliferation of electric cars on the road as a means to mitigate and diminish the adverse environmental consequences of automotive traffic, while also making a substantial contribution to climate preservation. The rationale behind this is that electric vehicles have the capacity to operate without emitting carbon dioxide throughout their operation, so making a positive contribution towards climate preservation. (BMU, 2020; Environment Federal Office Germany, 2021)

The ongoing discourse around climate protection and the concomitant strategies aimed at mitigating greenhouse gas emissions have engendered motivations for customers to contemplate the acquisition of an electric car (Fridays for Future, 2021; Rudolph, 2016). According to the "Trendmonitor Germany" report, a significant proportion of German customers, specifically two-thirds, express a keen interest in the purchase of electric vehicles. The Staat (2018) study reveals that there is a notable prevalence of interest in electric vehicles among those aged 29 and below, with a majority of 77%. Moreover, males exhibit a considerable level of interest, accounting for 72% of the respondents. Additionally, individuals belonging to higher income brackets, namely those with a net household income exceeding EUR 2,500 per month, demonstrate a significant interest in electric vehicles, with 80% expressing their enthusiasm. The inquiry into the factors driving consumer interest in electric vehicle adoption, as explored in the Trend Monitor study done by Nordlight Research, has yet to yield a definitive response. The absence of data collection pertaining to the relationship between interest and purchase intention was a notable aspect of the study conducted by Staat (2018). According to a recent representative poll conducted by E.ON and KantarEMNID, it was revealed that a mere 16 percent of the German population expressed a willingness to purchase an electric car (E.ON & KantarEMNID, 2019, p. 7). This study examines the unresolved question of why German customers want to acquire electric vehicles, while also exploring the link between various elements and their intentions. The theoretical framework employed in this investigation is the theory of planned behavior (Ajzen, 1991). The Theory of Planned Behavior (TPB) revolves around the prediction of individuals' behavior. The Theory of Planned conduct (TPB) posits that the most effective indicator of conduct is intention, which is influenced by attitude, social norms, and perceived behavioral control. Several versions of this theory have been made, specifically tailored to this thesis, that address the factors influencing moral standards and environmental concerns (Ajzen, 1991; Davis et al., 1989; Goh et al., 2017; Manstead, 2000; Shalender & Sharma, 2020). The issue of sustainability takes precedence in the assessment of environmental problems. Numerous variables exert an impact on the decision-making process around the acquisition of an electric car.

Chapter 2. Rationale

One hundred years ago, the advent of fuel-powered automobiles brought about a significant transformation in transportation, effectively supplanting horse-drawn carts. This development marked a pivotal moment in the evolution of transportation systems. The introduction of electric vehicles (EVs) has marked the commencement of a new era in global transportation. The automobile industry is being significantly impacted by the emergence of electric vehicles (EVs), which are seeing continuous advancements and a surge in demand. The electric vehicle (EV) sector is undergoing several transformations. The technological advancements of electric vehicles (EVs) are progressing, and concurrently, the infrastructure to support these vehicles is also increasing. Simultaneously, there has been an increased customer consciousness regarding electric vehicles as a feasible alternative for their next automotive acquisition. Furthermore, it is noteworthy that there is a consistent upward trajectory in gasoline prices, juxtaposed with a simultaneous decline in the pricing of electric vehicles (EVs). Consequently, a larger demographic may now financially access electric vehicles (EVs). Entrepreneurs in the electric vehicle (EV) industry could capitalize on this opportunity by strategically promoting their goods and implementing effective sales strategies.

At now, the major rental businesses in the Irish market do not have completely electric cars in their Fleet inventory. The objective of this research is to examine the significant impact of consumer knowledge on the selection of rental vehicles, specifically focusing on electric vehicles (EVs). The findings of this study can provide insights into the potential viability of electric vehicles (EVs) within the automobile rental business in Ireland upon their introduction. The researcher will demonstrate that in the contemporary market, consumers possess heightened awareness about pollution concerns and actively seek out items based on their environmentally friendly attributes, including their "green" characteristics and their influence on the environment in terms of CO2 emissions, waste generation, and sustainability. During the process of conducting a literature review, the researcher encountered scholarly works that delve into the topic of "green purchasing" (Johnstone, Pey Tang, 2015, pp. 311-328) and the impact of environmental legislation on the automotive industry (Verboven, 2014, pp. 389-392). Several studies have examined the purchase of electric cars (Massoules et al., 2011; Dietich et al., 2014). However, there is a lack of research specifically focused on electric cars as rental products. Therefore, the present study aims to investigate this topic.

2.1 Background to the Study

The emergence of the digital revolution in the last several decades has brought about significant changes in the marketing profession. It's not surprising that academics have shown a strong propensity to study the possible benefits of online channels, given the expanding importance of online channels in the world of business. The emergence of online advertising has opened up several doors for businesses. It allows for visitors to be attained on websites and mobile apps at far lower costs than traditional mass media marketing (Todor, 2016). The exponential annual rise of social media users calls for innovative marketing approaches from businesses and brands if they are to succeed in today's competitive environment. Marketers may more successfully offer goods and services to customers using social media platforms, and they can also more actively interact with customer feedback by responding to comments and questions in a timely manner. Through strategic use of social media marketing, Tesla has seized the moment and emerged as the industry leader in the electric vehicle (EV) sector. Tesla's better automotive marketing is a result of its use of passive social media marketing strategies, such as the spread of positive electronic word of mouth and the encouragement of consumer loyalty. Tesla puts a premium on providing a satisfying experience for its customers, which should result in positive eWOM and continued patronage. The primary goal of this research is to compare and evaluate the effects of many aspects on the all-important metric of consumer purchase intent. These elements include customer engagement, corporate trust, product satisfaction, positive eWOM, and customer loyalty. The rapid evolution of technology calls for advertising strategies like to those used by Tesla. As a result, there is significance to this study in this setting. The Internet is a powerful tool, and businesses who learn how to harness its potential quickly will be ahead of the competition both now and in the future.

There are a number of compelling reasons why the use of electric vehicles is on the increase. When compared to traditional gasoline-powered cars, electric vehicles (EVs) provide greater environmental sustainability, operational efficiency, and cost-effectiveness. The use of electric cars has several advantages. The advantages described above include lower pollutants, more mobility in different locations, and better fuel economy. Rapid expansion in this area is being driven by the need to quickly amass the marketing strategies that will convince and entice people to buy electric cars. The use of digital platforms is one of the most prominent alternative options. Fortunately, digital platforms may help businesses accomplish this goal. When compared to more traditional means of advertising like television and radio, digital platforms offer significant advantages.

There are unique possibilities and qualities that may be accessed via social media marketing that may not be accessible through conventional media marketing. This argument lends credence to the view that businesses should seek out and make use of such benefits. The low overhead associated with social media advertising is perhaps its biggest perk. Organizations may efficiently interact with a large audience without spending a ton of money because to the abundance of free social media platforms (Nadaraja & Yazdanifard, 2013; Gammoh & Pham, 2015). The digit seven. Sajid (2016) argues that businesses may use social media to reach their ideal consumers and build lasting relationships with them by responding to their comments and questions and promoting their goods and services. Customers are more likely to use the items and get invested in the company as a result. In addition, this medium allows customers to submit direct feedback, which increases openness (Faulds & Mangold, 2009). Faulds and Mangold (2009) found that the more channels of open contact a business gives its customers, the more invested those customers become in its offerings. Therefore, there is more interaction between consumers, assisted by social media and word of mouth. The increased number of people using social media platforms has helped to improve interaction between consumers and businesses. Individuals spend approximately 25% of their time on online activities such as social media surfing and other types of online communication, according to research by Nadaraja and Yazdanifard (2013). The widespread availability of the internet and the rise of smartphones have also contributed to the widespread use of social media (Martins et al., 2019; Ignatov, 2019). In terms of user preferences and interests, social media platforms provide marketers unprecedented levels of detail. To maximize the efficiency of advertising campaigns with little effort, tailored marketing tactics should be used (Saravanakumar & SuganthaLakshmi, 2012; Nadaraja & Yazdanifard, 2013; Ignatov, 2019). Traditional advertising may not be effective with a certain demographic. Some people may find satisfaction in promoting unique and ground-breaking products (Nadaraja & Yazdanifard, 2013) and in being seen as stylish or informed. The success of your social media advertising may be measured in a number of ways. According to Ahmad et al. (2012), one of the most important factors in a company's success is its ability to provide customers with timely and accurate information that meets their individual requirements. In addition, research on consumer habits is critical for every marketing campaign to succeed (Cetina et al., 2013). According to Cetina et al. (2013), businesses can't find social media marketing success without first creating a buyer persona, and then continuously adjusting their online marketing strategy to meet the changing needs of their target audience. Therefore, success requires adopting a strategy that is appropriate for each audience.

2.2 Objective of the Study

The primary aims of this paper are to enhance knowledge and understanding of electric vehicles and to promote public awareness regarding environmentally friendly autos. The primary aim is to enhance the sales of Electric Vehicles through the utilization of existing digital marketing strategies. The objective of this study is to examine the impact of digital marketing on the sales performance of electric automobiles. The principal aim of this study is to examine the utilization of social media as a marketing instrument for electric automobiles. The objective of this study is to ascertain the prevailing views of individuals towards electric vehicles (EVs) by analyzing articles sourced from reputable automotive periodicals. This analysis aims to assess the influence of digital marketing on each phase of the consumer experience, encompassing awareness and consideration, purchase, and post-sale engagement. The primary aim of this thesis is to examine the electric vehicle (EV) policies implemented by significant nations in order to determine whether a common component can be identified in the success or failure of these policies across different countries. This analysis seeks to establish a clear connection between sustainable energy and the adoption of EVs. Given the limited extent of prior research on electric vehicles (EVs) that has specifically examined EV policies, the objective of this study is to conduct a comprehensive analysis of various EV markets. By doing so, we intend to identify the primary underlying factors contributing to the success or failure of EV policies in different nations. The objective of this thesis is to ascertain the primary factors contributing to the lack of success in the implementation of EC policy across various nations. Therefore, the identification of crucial components will direct governmental policies towards the appropriate path to attain their objectives in a sustainable manner. Additionally, this study aims to identify the primary obstacles in the selected nations and cities in order to prioritize changes in areas with the greatest deficiencies. The objective is not alone to analyze these regulations from the government's standpoint, but also to consider them from an alternative perspective, specifically examining the extent to which these policies impact the reduction of the Total Cost of Ownership (TCO) for electric vehicle (EV) owners. The primary objective of this thesis is to identify solutions that can optimize the advantages of existing regulations while mitigating the problems for the European Commission (EC). Additionally, it aims to reduce the prevalence of internal combustion engine (ICE) ownership, decrease oil consumption, and diminish reliance on non-renewable energy sources. This study aims to explore the necessary redesign of governmental structures to effectively address the issue of highly polluting internal combustion engines (ICE) and foster a comprehensive knowledge of the measures required for their removal. In order to effectively adjust policies, it is crucial to have a comprehensive understanding of the most exemplary instances. In order to develop further tactics aimed at mitigating the proliferation of automobiles, a significant contributor to heightened traffic congestion and urban sprawl resulting from the expansion of road infrastructure, other measures need to be implemented.

2.3 Research Questions

The objectives of promoting electric vehicles (EVs) through digital marketing on a worldwide scale include raising EV awareness and education, promoting EV uptake and usage, and establishing EVs as a competitive alternative to conventional gas-powered vehicles.

Specifically, goals can be to boost website traffic and social media engagement, generate leads and sales for EV dealers and manufacturers, cultivate brand recognition and loyalty among EV enthusiasts, and improve public opinion of EVs.

1. What digital marketing platforms are most successful in promoting EVs around the world?
2. What messages are most effective with prospective EV purchasers, and how can they be tailored for various geographies and demographics?

2.3 Research Problem

The utilization of social media is primarily employed in contemporary marketing initiatives. Social media marketing has several advantages, such as its cost-effectiveness in creating advertising campaigns and its ability to reach a vast audience. The electronic vehicle sector has witnessed increased competitiveness over time as a result of technological advancements. Nevertheless, Tesla continues to maintain its dominance in the competitive market. The marketing methods employed by the automobile industry leader mostly focus on social media platforms. Tesla use passive techniques, such as word-of-mouth and client loyalty, to stimulate customer purchase intention. Hence, the primary objective of this study is to get a comprehensive understanding of the strategies and techniques involved in utilizing digital marketing tactics for promotional purposes.

Chapter 3. Literature Review

The primary goal of the literature study is to establish clear definitions and conduct a comprehensive analysis of the key phrases that are included in the research questions and objectives. The researcher will undertake a distinct delineation of attitudes and behavior, aiming to comprehend their respective meanings by drawing upon ideas posited by many researchers employing diverse methodological frameworks. The researcher will thereafter establish connections between these two factors and analyze their impact on the purchasing process. The review will elucidate the concept of environmental awareness within the context of the project's emphasis on attitudes and behavior pertaining to automobile buying. Specifically, it will delve into the prevailing global environmental challenges that several nations are presently grappling with. Ultimately, the researcher will do an analysis of the automotive sector and examine the extent to which consumers' apprehensions influence their decisions when purchasing vehicles.

3.1 Introduction

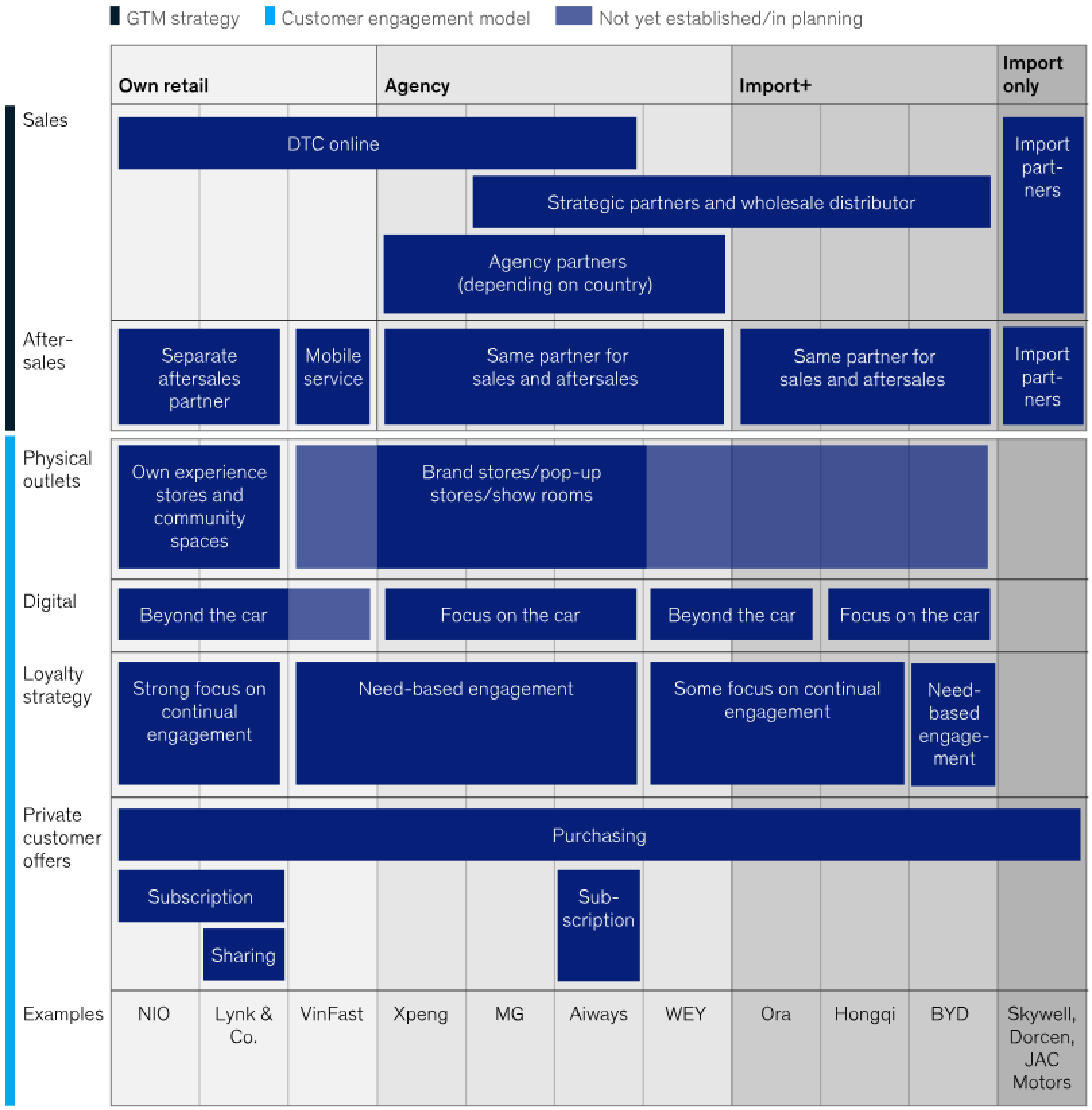
The objective of this literature review is to conduct a comprehensive analysis and provide critical commentary on the existing body of literature within the realm of marketing, with a special focus on the domain of Digital Marketing. Electric Vehicles: An Analysis of Existing Scholarly Works Emphasizing the Economic and Environmental Feasibility Marcello Contestabile, Dr. Gregory Offer, and Dr. Robin North The findings of the study indicate that the widespread adoption of electric vehicles (EVs) in the future would be contingent upon advancements in battery technology, which would result in cost reduction and enhanced energy density. Additionally, the availability of a well-developed recharging infrastructure will play a crucial role in facilitating the adoption of EVs.According to Contestabile (2012),

This research aims to analyze crucial elements in social media marketing that are essential for maintaining competitiveness, including electronic word-of-mouth and consumer loyalty. Moreover, this study aims to critically examine the existing body of literature pertaining to the electronic vehicle sector. Specifically, it will focus on the many marketing techniques employed within this industry and do a comparative analysis. Additionally, this research will evaluate the effectiveness of Tesla's social media marketing approach in relation to its competitors. Finally, an examination of the literature will culminate in the development of a conceptual framework aimed at comprehending Tesla's departure from traditional social media marketing strategies while maintaining its position as a frontrunner in the electric car sector. The present literature evaluation will commence by elucidating the transformations that have occurred in the marketing domain subsequent to the advent of the digital revolution, and the subsequent necessity for marketers to modify their approaches in order to execute effective marketing campaigns. This paper will undertake a critical analysis of marketing strategies employed on social media platforms, as well as examine the key attributes that contribute to the success of such campaigns. In conclusion, this research will provide a comprehensive analysis of the electric vehicle (EV) sector and its associated social media marketing methods, with a particular focus on electronic word-of-mouth (eWOM) and consumer loyalty. The present literature evaluation adheres to a traditional framework by delineating the primary patterns seen in pertinent research and scrutinizing the underlying ideas and constraints.

Title: Assessing the Imperative of Electric Vehicles, Charging Station Infrastructure, and Associated Challenges in the Global Market Authors: Praveen Kumar and Kalyan Dash Abstract: This study aims to evaluate the potential necessity of electric vehicles (EVs) and the corresponding charging station infrastructure in the global market. By examining the current state of EV adoption and the challenges faced in establishing charging infrastructure, this research seeks to shed light on the viability and feasibility of EVs as a sustainable transportation solution. The findings of this study will contribute to a comprehensive understanding of the global market dynamics surrounding EVs and inform future policy decisions and investment strategies. Introduction: The global transportation sector is witnessing a paradigm shift towards sustainable mobility solutions, with electric vehicles (EVs) emerging as a promising alternative to conventional internal combustion engine vehicles. This transition necessitates the development of a robust charging station infrastructure to support the It is advisable for companies to allocate resources towards implementing small-scale reinforcements in order to address local load difficulties, as opposed to pursuing large-scale changes. The promotion of home charging should be advocated for. Before constructing a large-scale charging infrastructure, it is imperative to carefully evaluate many factors such as proper planning of location, population, traffic congestion, and safety. The integration of operations within the energy and transport sectors has significant importance. Various creative policies and programs can contribute to the achievement of development goals. One such example is the provision of financial consumer incentives to drivers of electric vehicles, such as tax credits, purchase subsidies, discounted tolls, free parking, and access to limited highway lanes. These measures are expected to facilitate market expansion in the electric car sector.(Dash, 2013)

Title: Comparative Analysis of Conventional, Hybrid, and Electric Vehicles for Urban Distribution Centers Authors: Philippe Lebeau, Cedric De Cauwer, Joeri Van Mierlo, Cathy Macharis Abstract: This research paper aims to evaluate and compare the suitability of conventional, hybrid, and electric vehicles for urban distribution centers. The study investigates the potential benefits and drawbacks associated with each technology, considering factors such as environmental impact, operational efficiency, and economic viability. By analyzing existing literature and conducting a comprehensive review of relevant case studies, this paper provides insights into the most appropriate vehicle technology for urban distribution centers. The findings of this study can inform decision-making processes about the adoption of sustainable transportation solutions in urban logistics operations. The transportation of goods by freight has a significant influence on the mobility inside metropolitan areas. A diverse fleet including several technologies has the potential to decrease the expenses associated with the last segment of transportation. The researcher introduced an issue concerning the optimization of fleet size and vehicle composition for routing electric vehicles (EVs) within specified time periods. The primary contribution made by the authors pertained to the consideration of the variability observed within the range of electric vehicles (EVs). Electric vehicles (EVs) are frequently regarded as the most competitive technology within the small van market categories. Within the realm of large vans, diesel fuel has emerged as a particularly intriguing option in terms of its financial implications. This is mostly due to the fact that electric vehicles would need to traverse a significantly greater distance in order to achieve cost competitiveness. Hybrid vehicles are selected within the truck category because to their comparatively reduced running costs and fixed expenses in comparison to diesel trucks. According to Philippe Lebeau's research in 2015,

New entrants position themselves differently in the sales ecosystem across four archetypes.



Note: Approach can vary by country; MG was included given its Chinese ownership.
Source: : Press research & expert interviews, October 2022

McKinsey & Company

Figure 1. New Entrants data, McKinsey & Company(2022)

3.2 Definition of Digital Marketing for Automobile

Digital marketing plays a pivotal role in the development and implementation of effective marketing strategies aimed at promoting an electric vehicle (EV) corporation. Various digital channels, such as social media and email marketing, play a significant role in extensively promoting an electric vehicle (EV) brand. Social media platforms are being employed by electric vehicle (EV) manufacturers as a prominent digital marketing strategy. These platforms facilitate the interaction between manufacturers and potential consumers through the exchange of visual content, such as photographs and videos, as well as providing updates on the company's product offerings. These conversations have the potential to enhance clients' understanding of the product and its features. The integration of digital marketing has emerged as a significant component within the electric vehicle (EV) sector. Please explore other advantages of digital marketing for producers of Electric vehicles. The implementation of efficient digital marketing tactics contributes to the enhancement of an organization's credibility and the establishment of a robust reputation. Enhanced brand exposure to prospective clients is among the advantages that electric vehicle manufacturers may derive from utilizing digital marketing strategies. The use of efficient direct marketing methods inside a firm has the potential to enhance client retention rates and mitigate operational expenses. Through the utilization of digital marketing technologies, manufacturers have the ability to enhance brand recognition and expand their consumer base beyond the scope of conventional promotional methods. One of the most significant advantages that a firm may obtain

3.3 Global EV potential

Major automaker announcements on electrification, 2021-2022

Automaker	Announcement date	Ambition
Toyota	2021	3.5 million annual electric car sales by 2030 and the rollout of 30 BEV models
Volkswagen	2021	All-electric vehicles to exceed 70% of European and 50% of Chinese and US sales by 2030, and by 2040 nearly 100% to be ZEVs
Ford	2022	One-third of sales to be fully electric by 2026 and 50% by 2030, with all-electric sales in Europe by 2030
BMW	2021	50% of vehicles sold to be fully electric by 2030 or earlier
Volvo	2021	Become a fully electric car company by 2030
Geely	2021	20% of car sales to be electric by 2025
Mercedes	2021	All newly launched vehicles will be fully electric from 2025
General Motors	2022	30 EV models and BEV production capacity of 1 million units in North America by 2025, plus carbon neutrality in 2040

Figure 2. The world's biggest car manufacturers are setting ambitious targets for electric vehicles. Image: IEA.

Europe, along with other continents such as Asia and North America, demonstrates a heightened consciousness of the imperative enhancements required to mitigate and finally halt the detrimental effects of waste, climate change, and pollution, which are mostly attributable to industrial facilities and automobiles. As stated in the Environmental Challenges in a Global Context Report, Europe's reliance on fossil fuels, mining products, and other imports is leading to environmental pressures and hastening feedback mechanisms in many regions throughout the globe. Hence, it is imperative for Europe to enhance its environmental consciousness and develop a heightened understanding of the detrimental effects of pollution, waste, and climate change on the environment, given that Europe holds the primary position as the global importer of fossil fuels and mining products.

The primary environmental concerns included by the EEA European Environment - State and Outlook 2010 Reports are as follows: The ongoing erosion of Europe's natural capital and the decline in ecological services. Climate change is a significant global issue that refers to long-term shifts in temperature patterns and weather conditions on Earth. Nature and biodiversity are two interconnected concepts that play a crucial role in ecological systems. The topic of discussion pertains to natural resources and waste management. The interplay between the environment, human health, and overall quality of life is a topic of significant academic interest. The interconnections between the environmental conditions in Europe and several worldwide megatrends. The concept of specialized administration of natural capital and ecosystem services, The enhancement in resource efficiency and security has been seen. - The implementation of environmental regulations and the enhancement of environmental governance are crucial steps in promoting sustainability. - The transition towards a more environmentally friendly European economy is a significant endeavor. Numerous aforementioned concerns are currently being addressed, with a considerable number of enhancements yet to be implemented.

3.4 Automobile Industry in a Global Context

In the year 2022, the total number of automobile sales in Europe, encompassing both Western Europe and Central and Eastern Europe, amounted to 20.7 million units. It may be seen that the number of automobile sales in Western Europe amounted to 16.8 million units. The European region under consideration is home to a significant number of automobile manufacturers, including Germany, France, Spain, Sweden, and Britain. The automotive sector holds significant importance in Europe for the following reasons. In the regions of North and South America, the total number of automobile sales amounted to 22.6 million units.

The number of automotive sales in America exceeded those in Europe, reflecting the prominent position of the American automobile industry as one of the largest globally. It is noteworthy that both continents exhibited substantial rise in automobile sales throughout the period spanning from 2021 to 2022. This implies that the automotive sector is consistently expanding its market presence.

3.4 Consumer preferences for electric vehicles:

In this study, conducted by Fanchao Liao, Eric Molin, and Bert van Wee, The widespread use of electric vehicles (EVs) has the potential to mitigate issues such as environmental pollution, global warming, and dependence on oil. Nevertheless, the adoption rate of electric vehicles (EVs) remains relatively low, despite the implementation of robust government promotion measures. The authors provided a thorough examination of data pertaining to consumer preferences for electric vehicles (EVs) with the intention of informing policy-makers and guiding future research endeavors. The researchers conducted a comparative analysis of the economic and psychological perspectives on customer demand for Electric vehicles. The significance of financial and technological qualities of electric vehicles (EVs) on their usefulness has been widely observed. These attributes encompass factors like as purchase and operating costs, driving range, charging time, vehicle performance, and brand variety within the market. The presence of a higher density of charging stations has a favorable impact on the effectiveness and advancement of electric vehicles (EVs). The efficacy of incentive measures and tax reduction in generating effects is considerable. According to Fanchao Liao (2017), Social barriers refer to the obstacles that impede the development of electronic commerce (EC) due to a lack of access to fundamental information and services related to EC. The lack of government provision of essential information to clients may lead to a diminished interest among automobile buyers. According to Ajzen (1991), there is a positive relationship between the strength of one's desire to engage in an activity and the likelihood of actually performing that conduct. 1. The matter of acquiring an EC becomes significantly more burdensome when the vehicle is not readily accessible through local dealerships. These exclusive channels have designated retail locations in certain cities where potential buyers may make their purchases. 2. Issue of Waiting List: Despite the overall smooth process of purchasing an electric car, the predicament of waiting lists persists at auto stations. Occasionally, prospective purchasers may have a waiting period of many months prior to receiving the automobile. 3. Knowledge and Information (B6): Limited study has been conducted on the consumer experiences and adoption of electric vehicles. With the exception of some nations such as Norway, Japan, and the United States, it is typically expected that individuals possess comprehensive knowledge of the entirety of the project. There is a lack of comprehensive knowledge among individuals on essential aspects such as safety, speed, ranges, and other pertinent factors associated with EC. The lack of knowledge, education, and information is impeding the expansion of the electric car industry (Lutsey, 2015). 4. Operation and Maintenance: There exists a widespread lack of awareness among individuals regarding the operation and maintenance procedures associated with these novel automobiles. The dissemination of information to clients is essential through the utilization of information portals. Psychological research suggests that despite advancements in battery technology over the years, the general perception of batteries remains associated with the concept of electric shocks.

3.5 Perception and Awareness Level of Potential Customers towards Electric Cars:

Masurali, A. and Surya, P. The Electric Vehicle (EV) has emerged as a very viable alternative approach to address the prevailing challenges. Numerous automotive corporations are now implementing the introduction of electric vehicles (EVs) into their product offerings, hence extending their overall range. The promotion of electric vehicles (EVs) has the potential to contribute to a reduction in both fuel reliance and pollution, hence yielding benefits for customers and the nation as a whole. The amount of education among individuals has a substantial impact on their level of awareness regarding electric vehicles (EVs). In addition to producers, it is imperative for the government to exert significant efforts in disseminating information and cultivating favorable attitudes among prospective consumers. According to Masurali (2018), An Investigation of Consumer Perception and Purchase Behavior.

Electric vehicles (EVs) are recognized as having a significant role in the attainment of ambitious carbon dioxide (CO2) reduction goals (Thiel et al., 2015). This is mostly due to their ability to mitigate air pollution at the urban level, particularly in areas with high rates of motorized individual vehicle (MIV) usage. It is evident that the lifetime air pollution levels of a Battery Electric Vehicle (BEV) are lower in comparison to Internal Combustion Engine (ICE) vehicles. Furthermore, these measures enhance energy security through the mitigation of reliance on fossil fuels. According to a study conducted by UCSUSA.ORG in 2015, the electric vehicle (EV) has fewer greenhouse gas (GHG) emissions compared to conventional vehicles, even when the power used to charge the EV originates from a predominantly coal-based electricity generation grid. Additionally, EVs have reduced or no tailpipe exhaust emissions. According to Figenbaum et al. (2015), the electric motor exhibits a much higher level of energy efficiency compared to the internal combustion engine (ICE), with a ratio of around three to one. The adoption of plug-in electric vehicles (PEVs) on a large scale would result in a significant reduction in greenhouse gas (GHG) emissions, surpassing the emissions reduction achieved by more efficient conventional cars. The electrification of cars and non-road equipment is expected to have a positive impact on air quality. Furthermore, it has been shown that the environmental sustainability of the EC (emission control) system exhibits an upward trend in correlation with the improvement in fuel cleanliness. According to Figure 9, there is a negative correlation between the carbon intensity of EC and the cleanliness of the fuel. If the fuel is not free from impurities, the importance of EC will experience a slight decline. The EC, which operates within the US grid, demonstrates carbon dioxide emissions of 123 grams per kilometer (g CO2 e/ p km). Therefore, it is imperative that the energy utilized for these environmentally conscious endeavors be derived solely from renewable sources. In the context of renewable energy, solar power exhibits much lower levels of CO2 emissions in comparison to conventional vehicles.

3.6 EV Sales

According to industry assessments, there has been a shift in the perception of electric vehicles among global customers during the past four to five years. Due to the growing recognition of environmental sustainability and government efforts to encourage the use of electric vehicles (EVs), what was once an impractical concept has now become a popular choice for numerous households.

According to the latest iteration of the International Energy Agency's (IEA) annual Global Electric Vehicle Outlook, the global sales of electric vehicles surpassed the 10 million mark in 2022. Furthermore, it is anticipated that this figure will see a 35% increase in the current year, culminating in a total of 14 million electric cars delivered.

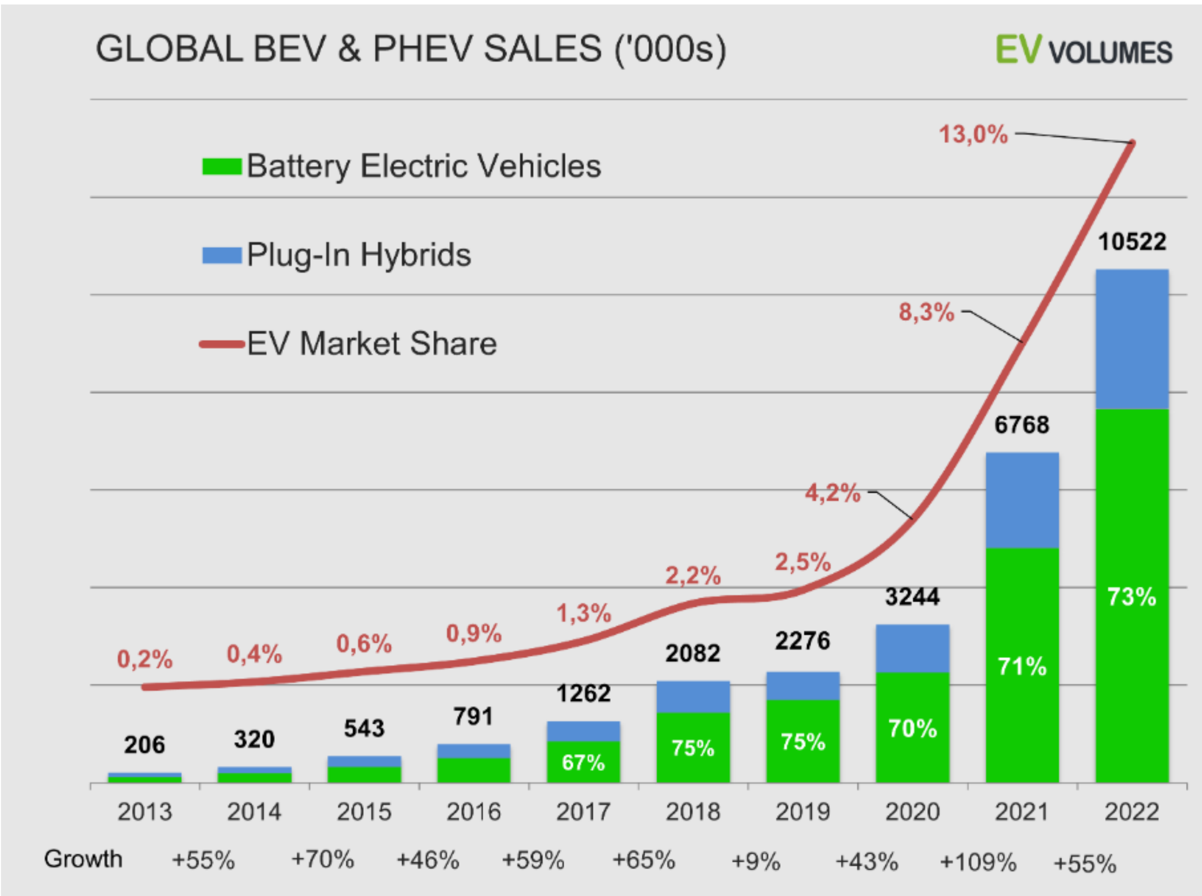


Figure 3. Electric vehicles made up 13% of light vehicle sales worldwide in 2022. Image: EV Volumes

Economic barriers manifest as a result of the government's incapacity to furnish monetary aid to consumers. The aforementioned obstacle is a key challenge encountered by governmental entities and consumers alike. Typically, electric vehicles (EVs) exhibit a higher cost compared to their internal combustion engine (ICE) equivalents, with a price differential of around two to three times. These phenomena might perhaps be attributed to advancements in technology. Primarily, electric vehicle manufacturers, such as Tesla, predominantly rely on renewable sources throughout the whole production and delivery process. As an illustration, the cost of the petrol version of BMW is comparatively lower in comparison to the BMWi. According to Ajanovic (2020), the inclusion of a battery in automobiles results in an increase in overall costs. When produced in plenty, internal combustion engine (ICE) automobiles contribute to a fall in the price of the product, making them more affordable. Over the course of time, technology has seen significant advancements. Despite the notable breakthroughs in battery technology and the significant decrease in battery prices by 60% since 2010, the persistently high cost of batteries and their limited lifespan remain significant drawbacks for consumers. The cost of utilizing the automobile charging system at public charging stations might be rather high due to the presence of quick chargers designed to facilitate fast charging. If the goods or services are not provided at no cost or with financial assistance

3.7 EV Digital Marketing

Dev Arora asserts that in order to achieve optimal audience engagement, it is necessary to employ a synergistic blend of methods and a meticulously designed marketing mix within the context of electric vehicles (EVs). First and first, it is imperative to emphasize the need of increasing public knowledge on the advantages associated with electric vehicles (EVs). Educational initiatives aimed at promoting environmental benefits, financial savings, and governmental incentives may be effectively implemented across several platforms, including social media, television, and partnerships with environmental advocacy groups. Furthermore, using the influence of prominent individuals and celebrities to endorse electric vehicles (EVs) has the potential to generate a favorable outcome and garner significant attention.

Pricing holds a substantial significance inside the marketing mix framework. The provision of competitive and cost-effective pricing for electric vehicles (EVs), along with the availability of flexible financing alternatives, has the potential to attract price-conscious Indian customers.

According to Viren Razdan, the Managing Director of Brand-nomics, there is a growing expectation among customers for the incorporation of future technology in the design of automobiles, in addition to the ongoing advancements in battery life and charging stations. On one end of the spectrum, we find automobile manufacturers such as BYD, Hyundai, and MG, among others. On the other end, we have manufacturers like BMW with its desire-driven iX model, along with other similar brands. The most recent communication from MG the Comet serves as a noteworthy illustration of future developments, as each component exhibits distinct positioning for the target group and its corresponding offer. Comet's youthful and contemporary aesthetic embraces the advantages of electric technology, while its distinctive appearance appears to be well-aligned with its intended market positioning.

As the electric vehicle sector gains momentum, significant efforts will be necessary to uplift the underperforming entities via the implementation of marketing strategies that instill consumer trust. These strategies may involve the establishment of charging stations and addressing concerns over battery longevity. The projected conversion rates to electric vehicles (EVs) are characterized by a notable degree of optimism. Given that India is positioned as one of the leading three global markets, the role of marketing strategies becomes crucial in defying the prevailing trend.

According to Neeraj Bassi, the category has experienced a shift in its target audience, expanding from individuals who prioritize environmental consciousness to those who are interested in electric vehicles (EVs). However, there is a significant group of individuals who are intrigued by the category but are reluctant to transition to an EV. The subsequent phase of expansion within this group would involve the conversion of those who are undecided into individuals who strongly believe in the product or concept. This work presents a significant challenge, as the target population in question had prior knowledge regarding the advantages of electric vehicles, unlike the previous group. The primary focus of communication would shift from generating awareness to fostering confidence.

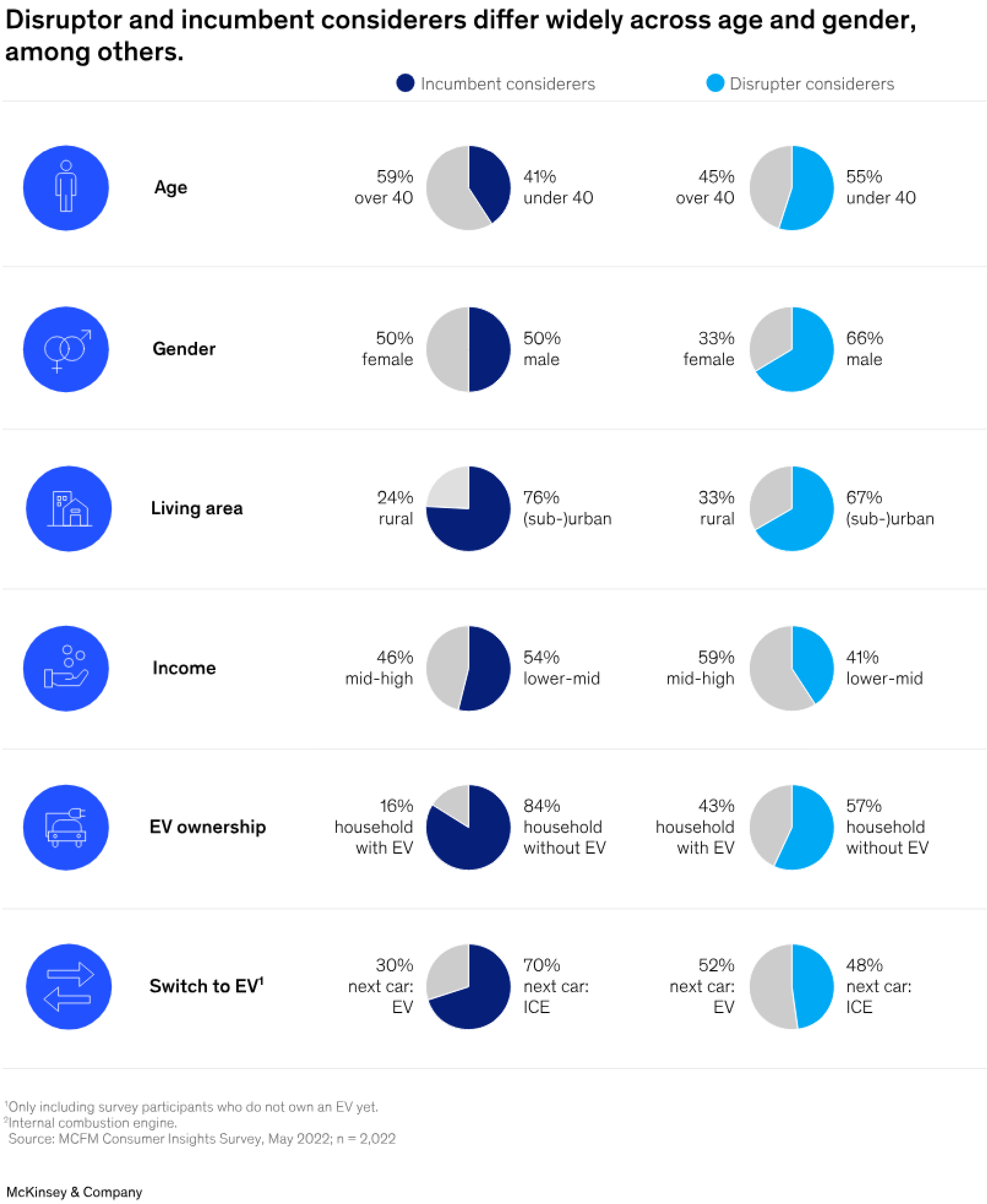


Figure 4 Disruptors and incumbents data, source Mckinsey & Company(2022)

3.8 Marketing Digital Era

This section aims to elucidate the transformations occurring within the marketing domain and the consequential alterations in the modus operandi of marketers, mostly due to the advent of social media. Furthermore, this essay will discuss the fundamental attributes of social media marketing.

Saravanakumar and SuganthaLakshmi (2012, p. 4444) assert that marketing is a highly advanced discipline that follows a systematic approach and continually adapts its principles in response to evolving circumstances and advancements within its domain. The regulations have undergone significant transformations since the advent of the World Wide Web and other technical innovations (Duguleana & Duguleana, 2008). Digital marketing refers to a form of marketing that is characterized by its ability to be measured, targeted, and interactive. It involves the utilization of technology to promote goods and services, with the ultimate goal of converting potential leads into consumers and maintaining their loyalty (Todor, 2018). Various marketing strategies are employed to enhance brand visibility and drive sales, a selection of which will be elaborated upon in subsequent sections of this analysis. The potential benefits arising from digital marketing are substantial. The ability to drive visitors to websites and mobile applications may be accomplished at much reduced expenses compared to conventional mass media marketing strategies. Moreover, according to Todor (2018), digital marketing has facilitated seamless customer relationship, empowering customers to begin contact at their convenience and from any location. According to Kamal (2018), the growing number of social media users has prompted a significant shift among organizations from conventional marketing channels to digital marketing. This change has yielded several benefits, including reduced marketing expenses and increased brand visibility. Globally, the ownership of smartphones is prevalent among around 20% of the population, while tablet ownership is seen in approximately 6% of individuals. Consequently, the significance of digital marketing has become indispensable in contemporary times.

3.9 Social Media Automobile Marketing

In recent decades, social media has emerged as a pervasive presence in the lives of individuals, offering smartphone users more convenience and accessibility in several domains, including communication, entertainment, and commerce. The advent of smartphones has revolutionized the consumer experience, enabling customers to effortlessly search for and purchase things with a simple tap of a button. This technological advancement has significantly impacted the strategies employed by marketers in their marketing efforts (Ignatov, 2019). Social media platforms facilitate the establishment and maintenance of interpersonal ties among individuals. When companies or goods become part of these platforms, individuals have the opportunity to engage with the brand or product. The perception of users towards this form of connection is influenced by their previous encounters with interactions on social media platforms (Bajpai et al., 2012; Gammoh & Pham, 2015). Social media platforms, like Twitter, Facebook, YouTube, and Instagram, provide users with the ability to share and disseminate comments and postings related to items, therefore increasing their visibility to a wider audience. Consequently, marketers are adapting their strategies to leverage the interactive and engaging features of social media. This has led to a growing trend among marketers to realign their marketing objectives and prioritize the establishment and maintenance of a favorable consumer-brand relationship through interactions on social media platforms (Hudson et al., 2016). According to Bajpai et al. (2012), social media platforms serve as a means of word-of-mouth marketing. Disseminating information on a product or company has the potential to generate more visibility and garner heightened interest. In addition, it should be noted that social media platforms provide direct interaction and active participation with those who follow a particular account, therefore cultivating a feeling of allegiance among these individuals as well as prospective clientele (Gammoh & Pham, 2015). Furthermore, enterprises have the ability to effectively target a certain demographic by carefully choosing which individuals or entities to follow on various social media networks.

3.10 Growth of the EV Industry

The inception of electric vehicles (EVs) may be traced back to the mid-19th century, a time when electricity gained significant prominence as a prevalent means of propelling vehicles. Gasoline-powered vehicles were lacking in the amount of comfort and convenience that was attributed to them. The phrase "electric vehicle" denotes a mode of transportation that only relies on electrical power for its operation, sometimes abbreviated as EV. The resurgence of electric vehicles (EVs) in the 21st century may be attributed to technological developments, a growing emphasis on renewable energy, and the promise to address the impact of transportation on climate change (Murthy & Nethravathi, 2021). The global acceptance and use of electric cars has experienced a substantial upsurge in recent years. In the year 2018, the worldwide sales of new electric cars (EVs) surpassed the milestone of one million units. According to Hetzke et al. (2018), the predicted growth rate suggests that electric vehicle (EV) manufacturers have the potential to increase their sales by four times the current number by the year 2020, reaching a total of 4.5 million units. This would represent around 5% of the worldwide light vehicle market. Fang et al. (2022) reported that the worldwide electric vehicle (EV) inventory surpassed 10 million units in the year 2020, signifying a 1% market share within the broader automotive industry.According to Murthy and Nethravathi (2021), the expansion of the electric vehicle (EV) sector in recent times may be attributed to the uncomplicated nature of its technological architecture and the significant rise in gasoline costs. Moreover, electric cars exhibit both direct and indirect environmental benefits owing to their reduced reliance on gasoline usage. According to Fang et al. (2022), it is projected that the city of Shanghai would have a staggering population of over 9 million electric cars by the year 2050. This forecast indicates a substantial increase in the prevalence of electric vehicles. The aforementioned scholars, including Graham et al (2014), Austin (2013), Sheetz (2015), Motavalli (2010), Perdiguero & Jimenez (2012), Egbue & Long (2012), Lockström et al (n.d.), Wallis & Lane (2013), and Tsang et al (2012), have identified various obstacles that impede the expansion of the electric car (EC) market. These barriers encompass a wide range of factors hindering the adoption of electric cars in multiple markets. The barriers and variables will be categorized into Political, Economic, Social, and Technological elements for subsequent examination.

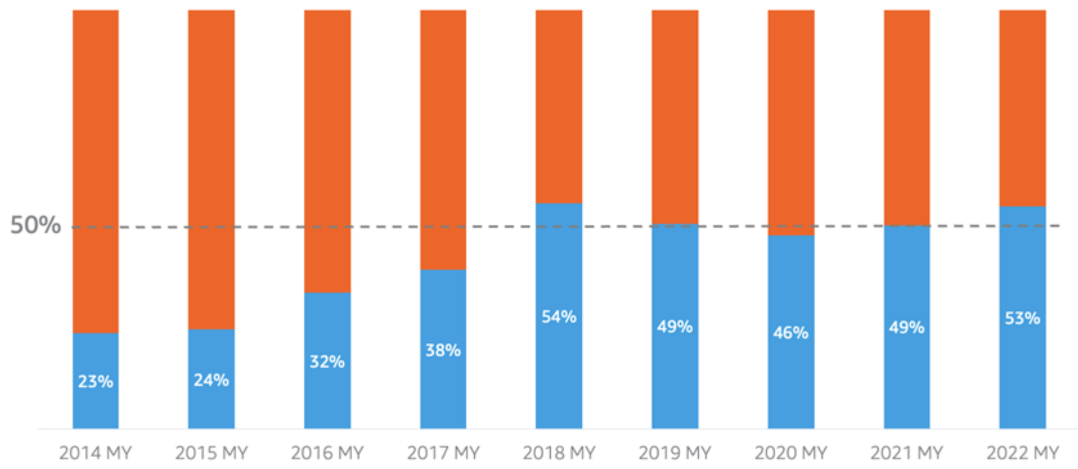


Figure 5. Source: Amazon internal, US only, 2017-01-01 to 2022-01-31

3.11 Theoretical Implications

Rising carbon dioxide (CO2) emissions and widespread use of cars and other transportation modes powered by carbon-based sources pose a serious and widespread threat on a global scale. In order to help accelerate the broad adoption of electric vehicles in Turkey and other countries with similar socioeconomic features, this research analyzes the habits of GT and EC drivers. The study's overarching goal was to advocate for the widespread adoption of electric vehicles (EVs), which are thought to have significant benefits for increasing the usage of renewable energy sources and decreasing pollution levels. In the framework of Turkey's objective for long-term, sustainable development, this is of crucial importance.

This research is the first to try to include Environmental Concern (EC) and Green Technology (GT) into traditional Theory of Planned Behavior (TPB) frameworks to better understand why and how people in Turkey are adopting EVs. The authors believe that the Extended Theory of Planned Behavior (ETPB) model used here is the first of its kind to extensively investigate the behavioral structures and interactions associated with the adoption of electric vehicles. As a result, this research gives a comprehensive model that takes into account a wide range of previous studies' findings. This study can be used as a springboard for additional studies on sustainable development, green energy, and the uptake of electric vehicles in Turkey and other developing countries with similar demographics and economic profiles. When compared to earlier analyses of the spread of EVs, the theoretical developments presented here are substantial. This research tries to theoretically explain and empirically support the correlation between the spread of EVs and a heightened awareness of environmental issues in a variety of geographical situations with the exception of Turkey. It's important to remember that many previously conducted studies neglected to directly investigate this connection. Therefore, the team presents its finding with the intention of increasing the popularity of EVs for the benefit of other academics doing similar studies. Many studies in the past have looked at people's motivations for buying green goods, and they've all come to the same conclusion: green trust (GT) is crucial. A strong link between GT and the propensity to buy environmentally friendly items has also been found by these analyses. However, previous studies haven't looked at how GT specifically affects the uptake of EVs within the green product category, which includes things like renewable energy and eco-friendly procedures. Therefore, the discovery of this study helps to close a gap in the current literature.

The rate at which vehicle ownership is expanding across the world is now far faster than that of the world's population. Evidence from the past suggests that there were around 50 million cars on the road worldwide in 1950. By 2020, the number of cars in the globe, as predicted by Sperling (1995), will have risen to around 600 million. It is predicted that by 2050 the worldwide population of vehicles would approach 3 billion. While driving a car provides its owners with independence, privacy, and comfort, it also has a major impact on the environment. In particular, internal combustion vehicle (ICV) emissions of carbon dioxide and other greenhouse gases are having negative consequences on both the environment and human health.

Cleaner fuels have been produced and gasoline catalysts have been used in an attempt to lessen the harmful effects of vehicle use. However, carbon dioxide emissions, the fundamental factor in the greenhouse effect, seldom budge as a result of these efforts. An important modern task is figuring out how to deal with the problems caused by the widespread use of automobiles without restricting people's basic right to freedom of movement and choice in democratic nations. A practical solution should likely include the replacement of the current vehicle fleet with a newer, greener one. The efficiency and emissions of internal combustion vehicles (ICVs) might be improved as a means of resolving this problem. Switching to cleaner fuels or researching new forms of propulsion that produce less pollution is another option (Sperling, 2009). While the first two choices may seem to be the most natural and accessible, they have actually made little headway toward achieving environmental benefits. The increasing awareness of the need of reducing transportation-related local pollution and greenhouse gas emissions is driving research and development of environmentally friendly propulsion systems for automobiles. However, modern electric automobiles (EVs) still have significant limitations that lessen their attractiveness when compared to internal combustion vehicles (ICVs). Electric vehicles (EVs) have a number of shortcomings, the most significant of which being the limits imposed by present battery technology, such as short driving ranges, long recharging times, and high entry prices. In contrast, it's important to highlight that electric vehicles (EVs) have a very cheap cost of fuel, and the lifetime of electric motors much outstrips that of internal combustion engines (ICEs), resulting in less need for motor maintenance. Comparing electric cars (EVs) to internal combustion vehicles (ICVs) would be more beneficial if one included in the total costs associated with current environmental pollution. Therefore, ensuring the consumer is adequately informed on the downsides and benefits of this new technology is a key challenge faced by marketers and policy-makers aiming to develop a global market for electric cars (EVs). Potential buyers may be wary of investing in electric vehicle (EV) technology since it is unique and different from what they are used to. Its principal benefit is the reduction of local pollution, one of the many non-market disadvantages of traditional internal combustion cars (ICVs). Another drawback of ICVs that electric vehicles help to mitigate is their contribution to greenhouse gas emissions. Despite the benefits to society, owning and operating an EV comes with a number of severe downsides. There are a number of disadvantages to electric vehicles, including a higher price tag, a shorter range, a lower availability due to the time needed for recharging, a lower cargo capacity due to the presence of batteries, and slower speed and acceleration. As a corollary, the lack of a well-developed network of charging stations limits the EV's practicality. It's also worth noting that EVs don't solve other social issues connected to personal transportation, including as traffic congestion, car accidents, or the need for a dense network of paved roads.

There isn't much innate interest in a product like this among potential buyers. Therefore, good marketing techniques for electric cars (EVs) are vital for their adoption and broad usage, in addition to governmental backing. Electric vehicle (EV) policy in Europe and North America have been the subject of much research in recent years (Schot et al., 2003; Kemp et al., 2003; Weber and Hoogma, 2008; Truffer et al., in press). There is an obvious and urgent need for research that can help shape effective national and international strategies in this area. However, without a competent and devoted marketing effort by EV producers, the efficacy of government suggestions aimed to encourage market acceptance of EVs may be made worthless. However, there is a serious lack of studies that aim to encourage and facilitate corporate policy creation in this area. To successfully introduce a new product to the market and encourage its widespread adoption, marketers need in-depth knowledge of both the product's features and the traits of its early adopters (Tigert and Farivar, 1981; Link, 1997; Goldsmith and Hofacker, 1991; Hawkins et al., 1998). This research provides a detailed, two-stage plan for advertising EVs to certain demographics. This tactic was developed by first assessing the current and prospective characteristics of EVs, and then reviewing literature on the characteristics shown by early adopters of revolutionary products. In our effort, we are laser-focused on the big picture, ignoring details that may or may not be relevant to the widespread adoption of EVs throughout (or at least most of) the industrialized world. Manufacturers of electric vehicles need to tailor their advertising strategies to the specifics of their home markets.

3.12 The future

Nevertheless, the electric vehicle (EV) is now hindered by a significant limitation that poses a challenge to its widespread adoption in the near future. According to Sperling (2009), the current battery technology, which is both costly and not fully optimized, has limitations in terms of enabling extended driving distances. The present lead-acid batteries, despite their affordability, exhibit unsatisfactory performance since they have a limited lifespan of less than two years and 20,000 miles. Additionally, their energy storage capacity is insufficient to propel a full-size vehicle over long distances or at high speeds. Currently, batteries such as nickel cadmium, nickel iron, and sodium sulphur are not considered to be among the most promising options due to their high cost, elevated working temperature, and increased likelihood of corrosive issues. Nickel-metal hydride and lithium-based batteries have emerged as the primary candidates for the 21st century due to their extended lifespan and non-toxic nature. Fuel cell technology is an additional viable alternative that shows promise. A fuel cell is a device that facilitates the electrochemical conversion of hydrogen and oxygen into electrical energy and water. The transformation process does not generate any pollutants or greenhouse gases, as the energy is generated continually on board. Additionally, the driving range of this technology is comparable to that of an internal combustion vehicle (ICV), and it requires less maintenance. Nevertheless, fuel cells continue to be a costly investment, and more development is required for the reformer technology (DaimlerChrysler, 1999). However, there is considerable concern over the future strategies. The current objective appears to revolve on the advancement of technologies capable of directly rivaling Internal Combustion Vehicles (ICVs). However, a pertinent inquiry arises over the willingness of individuals to financially support such developments. It remains uncertain if individuals would opt for an Electric Vehicle (EV) with a reduced driving range and lower cost, as opposed to an ICV.

3.13 ADOPTION OF ELECTRIC VEHICLES

Given the above stated parameters, whose demographic would demonstrate a willingness to acquire an electric vehicle (EV)? Vehicle clients may be broadly categorized into two groups: private persons and organizations, which can be either public or private entities. In the context of this discussion, companies are commonly referred to as fleet operators. The latter group represents the greatest individual consumers, whereas the former group constitutes the majority of the automotive market in most nations. Fleet operators, as will be discussed afterwards, are a market group that possesses several favorable attributes from the perspective of electric vehicle (EV) marketing. In several nations, postal entities, electric service providers, public transit corporations, and vehicle rental enterprises. Private persons have exhibited a greater degree of hesitancy in embracing electric vehicles (EVs). According to Buist (1993), a forecast made in 1990 estimated that around 1% of the American population would express interest in acquiring an electric vehicle (EV). According to a study conducted by Power and Associates in 2004, it was determined that around 6% of American households were potentially inclined towards considering the purchase of an electric vehicle (EV). In a study conducted by Kurani et al. (2006), it was determined that 16% of the households in California, as shown in the sample, expressed a preference for electric vehicles (EVs) instead of internal combustion vehicles (ICVs). According to Ga¨rling et al.

(2008), the level of interest among households is contingent upon the relative performance and pricing of electric vehicles (EVs) in comparison to internal combustion vehicles (ICVs). Incorporating the most advantageous attributes, which are within reasonable bounds, the study reveals that over 30% of families in a representative sample from a major Swedish urban area may contemplate acquiring an electric vehicle (EV) instead of an internal combustion vehicle (ICV). While acknowledging the inherent uncertainty and challenges in comparing these percentages, it appears that the conditions are shifting in favor of electric vehicles (EVs). Nevertheless, the inquiry pertains to the optimal marketing strategies that should be employed to effectively appeal to prospective clients for electric vehicles (EVs). According to Kurani et al. (2008), there exist several parallels between the advent of the microwave oven and the electric vehicle (EV). Prior to persons receiving information, such as through specialized cooking classes, regarding the complementary nature of microwave ovens in relation to conventional ovens rather than their substitutive potential, the level of acceptability was notably low. However, there was a significant rise in acceptance subsequent to this awareness being disseminated. The microwave oven may be classified as a "high learning product" due to the requirement for consumers to make behavioral modifications in order to effectively utilize its features. While there are notable distinctions between the microwave oven and the electric vehicle, there are significant similarities between the two products in this regard (Schot et al., 2006; Truffer et al., in press). Rogers (2008) posits that the categorization of innovations based on five characteristics presents a very auspicious foundation for segmenting the prospective electric vehicle (EV) market, with a specific emphasis on the identification of early adopters. Therefore, it is suggested that the individuals who are most likely to be early adopters are those who have a positive perception of the advantages and disadvantages of electric vehicles (EVs) compared to internal combustion vehicles (ICVs). Additionally, these individuals view EVs as compatible with their important values and do not find them difficult to comprehend or operate, indicating a lower level of complexity. The marketing strategy for electric vehicles (EVs) should aim to attract those who already have positive opinions towards EVs, while also seeking to alter the perceptions of both these prospective adopters and other potential adopters in a more favorable direction. Moreover, in accordance with Rogers' classification, trialability and observability emerge as two crucial attributes of electric vehicles (EVs) that had to be aggressively used within the marketing campaign. In relation to demographic and personality attributes, it is worth noting that certain common characteristics observed in previous studies among early adopters may also be applicable in this particular context. These characteristics include higher levels of education, a propensity for experimentation, possessing extensive knowledge and competence, being frequent users of similar products, and possessing the ability to discern the advantages of a new product in comparison to existing alternatives. However, owing to its distinctive amalgamation of elevated expenses and conspicuousness, which renders electric vehicles (EVs), like other automobiles, a product that requires significant consumer engagement, it is widely believed that comprehending the initial adopters of this specific novel product is most effectively achieved by considering their innovativeness within the domain or product context (Goldsmith and Hofacker, 2009). It may be argued that a crucial determinant of domain-specific innovativeness is a positive evaluation of the EV, as proposed by Rogers (2006), across several dimensions.

Technological barriers might potentially manifest as a result of the inadequacy of the electric vehicle, the battery, or the electric vehicle charging infrastructure. The technological soundness of a product is considered a fundamental need by customers. 2. Battery Failure: Concerns have arisen among consumers over the potential for vehicle failure or battery depletion in remote locations. Additionally, in regions characterized by cold temperatures, the functionality of batteries may be impacted as a result of snow accumulation. The potential diminishment of range due to substandard or regional battery performance may also instill concerns among consumers over the ability of their vehicles to initiate in sub-zero conditions. 3. Limited manufacturers and models (B8): Despite the expansion of EC in recent years, customers continue to have limited options that align with their specific demands. The firms are limiting the options available to the owners. Consumers have challenges in obtaining an automobile that aligns with their specific requirements. According to Plug in (2015), the state of California in the United States is the only region that has a substantial variety of electric vehicle charging stations. 4. Insufficient Charging Infrastructure (B9): While it is true that some individuals reside in private residences in some nations, the bulk of urban areas, particularly in Europe and China, are characterized by a high prevalence of apartment or flat living arrangements. The presence or absence of garages is a variable to consider. The charging procedure for electric vehicles is often characterized by a sluggish rate of charge. With the exception of Superchargers, the charging time for electric vehicles from 0% battery level still averages around 8 hours. According to Bakker and Trip (2013, p.20), there is a requirement for fast-chargers that have the capability to charge a battery up to 80% within a duration of 30 minutes. One of the challenges encountered is the limited availability of charging outlets. When operating a motor vehicle in an unfamiliar urban area or unfamiliar neighborhood, it might occasionally be exasperating to search for unfamiliar charging infrastructure.

3.14 MARKETING STRATEGIES FOR ELECTRIC VEHICLES

The distinguishing characteristic of an electric vehicle (EV) is in its capacity to minimize adverse effects on both societal well-being and the natural environment, surpassing those of an internal combustion vehicle (ICV). Nevertheless, the potential purchaser is obligated to make a substantial payment for their altruistic action. Given the existing scarcity of privately owned electric vehicles (EVs) in circulation, there is a lack of established societal norms that support the selling offer. The promotion of such an agreement poses significant challenges. Based on the prevailing circumstances, it is unlikely that a sufficient number of electric vehicles (EVs) can be sold within a limited timeframe to offset the expenses incurred by manufacturers (Thornton, 1999) or to yield discernible environmental or societal impacts. Therefore, it is imperative to acknowledge that the viability of a marketing campaign for an electric vehicle (EV) is contingent upon a crucial assumption: that circumstances will undergo significant transformation in the future, favoring the widespread adoption of EVs. The aforementioned assumption is deemed to possess a reasonable degree of plausibility, yet it should not be unquestioningly accepted.

For the implementation of this transition, it is likely imperative that the learning curve associated with electric vehicles (EVs) exhibits a significantly steeper trajectory compared to that of combustion engine technology, which includes catalytic cleaning. This would result in a swift reduction of the existing disparity in the price/performance relationship between these two technologies. It is imperative that no greater technological advancement for individual mobility emerges in the foreseeable future. Table 1 presents a current evaluation of the predominant technologies under contention, encompassing electric vehicle (EV) technology. Based on the study conducted, it is evident that electric vehicle (EV) technology holds significant potential for enhancing environmental conditions. However, it is important to note that the transition towards cost competitiveness may need a substantial amount of time. The implementation of governmental measures such as subsidies or tax incentives for electric vehicles (EVs) or the imposition of restrictions on the use of internal combustion vehicles (ICVs) (Bernard, 1981; Kemp et al., 1998; Weber and Hoogma, 1998) can play a crucial role in facilitating the adoption of EVs. However, while these measures may be necessary for the successful marketing of EVs, they alone are unlikely to be fully effective or provide a comprehensive solution.

If one is confident in the reliability of a technology prognosis that predicts a significant reduction in the gap between price and performance, it would be rational to develop a long-term marketing strategy that accounts for the first losses and anticipates their recovery over time. The impact of economies of scale and learning curve effects is contingent upon the level of production volume. The presence of numerous electric vehicles (EVs) in the market offers several benefits. Firstly, it serves as a means to showcase the viability of EV technology to potential customers who may initially be hesitant. Secondly, if the initial customers are satisfied with their EVs, it can generate positive word-of-mouth, further promoting the adoption of EVs. Lastly, the increased availability of EVs can create a demand for the development of the essential infrastructure required to support their widespread use. A recommended approach for attaining market penetration success would likely involve implementing a somewhat modest first pricing plan, which might be based on introduction rebates or the concept of 'learning curve pricing' as discussed by Kotler (2006). The primary objective at the outset should be to secure market acceptability, which may be accomplished by targeting a few specific segments in a deliberate manner, as suggested by Hawkins et al. (2003). The fact that a significant minority of consumers do not purchase a new vehicle without first conducting a test drive serves as evidence supporting the significance of trialability in influencing consumer decision-making within the automotive market. When the automobile is constructed using a novel technology, the primary drawbacks of which are only evident in highly exceptional circumstances, it is natural for a prospective client to express a preference for a longer trial of the electric vehicle prior to making a definitive decision. Therefore, the implementation of a lenient return policy or the provision of lease options for electric vehicles (EVs) prior to making a definitive purchase decision might facilitate the conversion of interested prospective consumers into real buyers of EVs. The fundamental benefit of the electric vehicle (EV) lies in its superior environmental sustainability as compared to the internal combustion vehicle (ICV). Therefore, it may be inferred that electric vehicles (EVs) are likely to be more attractive to prospective users who place a higher importance on environmental sustainability (Truffer et al., in press). Nevertheless, it is apparent that the private automobile is seen as a significant symbol of one's lifestyle in several aspects (Jensen, 2009). This is obvious in the extensive range of prices, styles, sizes, and other attributes that automobiles possess. Contemporary electric vehicles (EVs) have a high degree of similarity to compact, fuel-efficient automobiles. Therefore, those who drive automobiles and have a preference for prestigious, sporty, or off-road vehicles are less inclined to view an electric vehicle (EV) as a suitable replacement due to different lifestyle factors. According to Weber and Hoogma (2004), scholars in the field of technology policy have proposed that during the first stage of innovation dissemination, niche-specific variables play a predominant role, but systemic factors have greater influence in subsequent phases. In accordance with this perspective, a marketing-oriented approach is recommended to provide a two-phase plan for the promotion of an Electric Vehicle (EV). The percentage of families possessing several cars, which stands at 12% in both Sweden and Denmark, provides insight into the potential magnitude of this industry. However, it is important to note that this figure may still overestimate the actual size of the market due to the issue of value-compatibility. Single-car families represent a highly desirable sector within the automobile market.

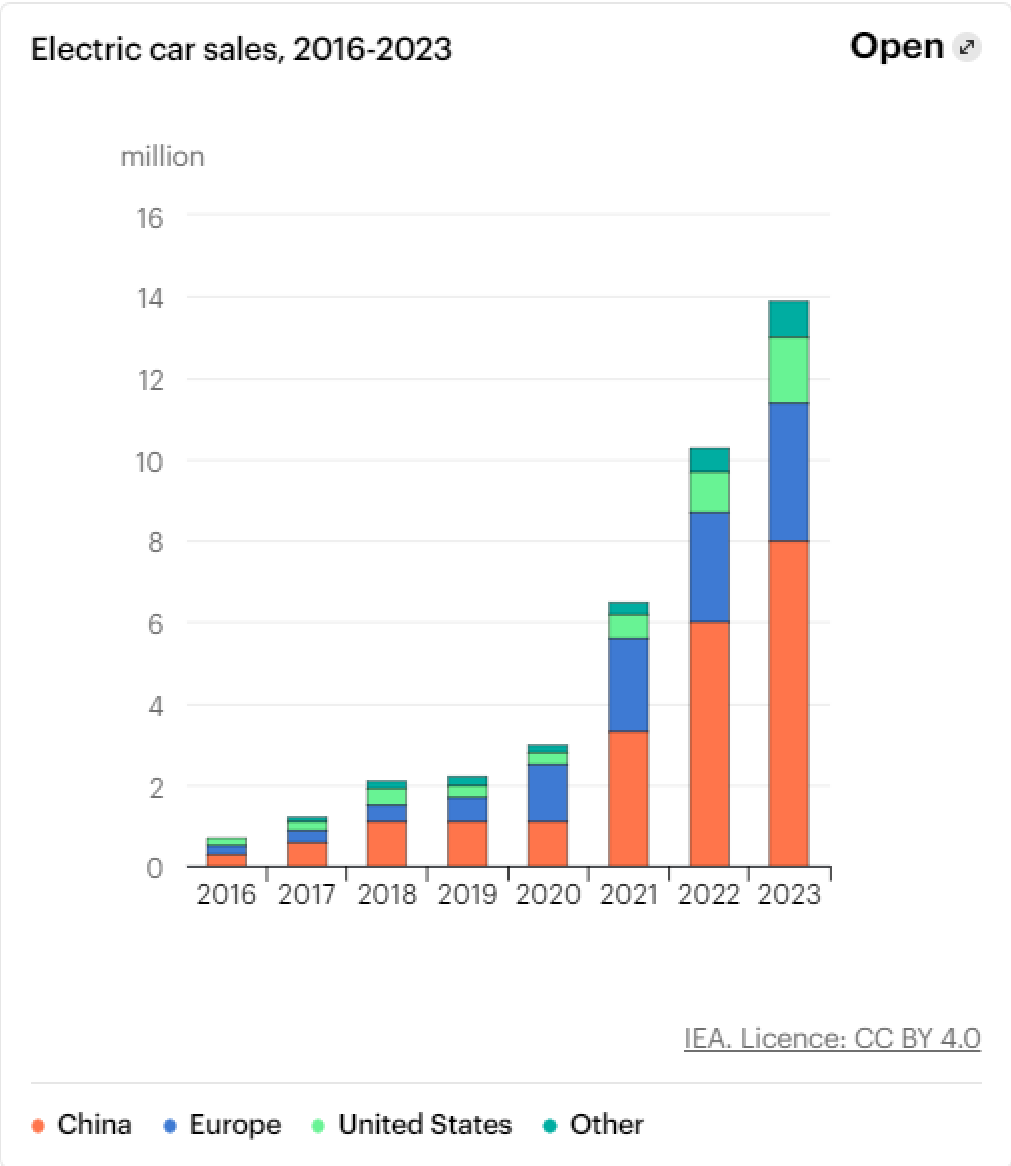


Figure 6. Electric car Sales in million, source: IEA

3.15 Green companies

This sector comprises privately-owned enterprises that prioritize maintaining a strong environmental profile and value compatibility. Accurate estimations about the proportion of firms that self-identify as environmentally conscious are currently lacking. Nevertheless, much material exists indicating that a growing number of companies include environmentally friendly reasons in their marketing strategies, and an even higher proportion are eager to cultivate a sustainable corporate image (Peattie, 2006). For corporations seeking to enhance their environmentally responsible reputation, an electric vehicle (EV) that does not emit pollutants possesses a much greater value compared to its worth for the general public or other businesses (relative advantage) (Schot et al., 2006). Similar to vehicles owned by public sector entities, several business automobiles are only utilized for very brief journeys and exclusively during standard working hours. Therefore, it is probable that this particular sector is less susceptible to the functional limitations of electric vehicles (EVs) compared to private houses, in terms of their respective advantages. Indeed, it is worth noting that many environmentally conscious organizations may not necessarily view the promotional benefits of an electric vehicle (EV) as significant enough to offset the vehicle's technical limitations and higher cost. The attractiveness of the deal for firms in this sector, as well as the extent to which they find it appealing for their vehicle fleet, is contingent upon the pricing strategies of electric vehicle (EV) manufacturers, as well as the level of governmental support provided in the form of subsidies and/or tax relief. Similar to the previous sectors, the proportion will witness an increase as advancements in electric vehicle (EV) technology continue to progress.

The growing awareness of environmental concerns, namely the energy crisis and global warming, has led to an increased emphasis on new energy vehicles in recent years. The adoption of a product oriented strategy in the development of new energy vehicles (NEVs) is anticipated to play a crucial role in upholding the quality standards of NEV goods, therefore meeting the market's expectations and needs. The primary focus of product orientation pertains to the significance of new energy vehicles in the mitigation of carbon emissions. The electrification of automobiles has been found to have a notable impact on the reduction of carbon dioxide emissions and enhancement of overall efficiency. From 2019 onwards, a notable increase of 43% in greenhouse gas emissions has been noted, with a corresponding rapid rise of 121% in emissions from industrial operations. Collectively, these industries account for 32% of greenhouse gas emissions in China. The five primary categories of emissions associated with new energy vehicles encompass tailpipe emissions, zero direct emissions, greenhouse gas emissions, carbon dioxide emissions, and nitrous emissions. The pollutants in question arise from the combustion of gasoline as well as the utilization of electric batteries. New energy cars exhibit lower fuel usage, resulting in a large reduction in carbon emissions. The aforementioned data indicates that the Chinese government conducted several novel measures from 2012 to 2017 in order to promote the use of NEVs. During this time period, the utilization of these vehicles was not substantial. Nevertheless, the measures implemented by the government yielded a substantial surge in sales of New Energy Vehicles (NEVs), with figures escalating from a mere 298 vehicles in 2012 to an impressive 61,354 NEVs by 2017.

Electric vehicles (EVs) are widely recognized as efficacious technical advancements that contribute to the mitigation of environmental issues stemming from emissions generated by road traffic. Electric vehicles (EVs) only rely on the utilization of chemical energy stored in rechargeable battery packs, resulting in the absence of any pollutants released into the atmosphere. In addition to their positive environmental impact, electric vehicles (EVs) provide notable economic advantages stemming from purchase incentives and reduced operational expenses. Despite the increasing interest and recognition of the environmental and economic advantages associated with electric vehicles (EVs), their market penetration remains limited in several nations. The Chinese Government has implemented a range of strategies aimed at fostering the use of Electric Vehicles (EVs) as a means to mitigate air pollution. The market for private automobiles has witnessed a surge due to accelerated economic expansion and urbanization. Nevertheless, the current market penetration of Electric Vehicles remains rather modest, mostly attributable to user apprehensions about potential inconveniences arising from the restricted charging time and driving range associated with such vehicles. Furthermore, the act of recharging the batteries of Electric Vehicles throughout the course of a journey also engenders inconvenience for consumers. Governments have adopted another strategy to facilitate the broad adoption of Electric Vehicles (EVs), which involves enhancing their economic competitiveness within the existing market. In pursuit of this objective, several nations, who are part of the Electric Vehicle Initiative (EVI), are enacting measures aimed at promoting the widespread use of electric cars. As an illustration, the United States Federal Government has allocated a sum of $7.5 billion with the aim of promoting the manufacturing and acquisition of Electric Vehicles by the year 2019. In a like vein, the Chinese Government allocated a cumulative sum of 33.4 billion Chinese Yuan throughout the period spanning from 2013 to 2015 with the aim of facilitating the widespread acceptance and utilization of electric cars. Nevertheless, research has indicated that individuals exhibit a lack of inclination towards embracing green ideologies and purchasing electric automobiles. The Chinese Government has developed a range of fiscal incentive programs with the aim of augmenting the market share of Electric

Vehicles (EVs) and fostering consumer adoption of EVs. The Chinese Government has enacted the "Energy Conservation and Electric Vehicle Strategy" and initiated experimental initiatives aimed at providing direct incentives to electric vehicle (EV) purchasers. Additional financial incentives, such as tax exemptions and toll exemptions, have also been implemented. Notwithstanding these endeavors and incentivizing measures, the propensity of consumers to embrace electric vehicles (EVs) continues to be limited, resulting in a very modest market share for EVs. Based on a data published by the China Automobile Manufacturers Association, the cumulative sales of vehicles reached a figure over 28 million by the conclusion of 2016. However, the sales volume of Electric Vehicles amounted to a mere 409,000 units. The market penetration rate of Electric Vehicles (EVs) in China was a mere 1.46%. This predicament demonstrates that electric vehicles (EVs) encounter a clash between "hot policy" and "cold market" conditions, not only in China but also in other advanced nations. In Brazil, both freight and passenger transportation predominantly rely on road transit. The transportation industry accounts for 33% of the nation's overall energy consumption, with road transport representing 93% of this proportion. Additionally, this sector represents a significant portion of diesel use in the country, amounting to 81.6%. The automobile industry has significant importance in terms of production, consumption, and energy usage pertaining to electric cars, both domestically and internationally. However, it does not align with the energy and mobility patterns observed in prominent nations such as Brazil, China, the United States, and India. At now, China has the largest electric vehicle market globally, with the United States and Europe trailing behind in terms of market size.

3.16 Environmental concerns (EC)

Environmental issues are investigated as an additional variable in the ETPB framework, as discussed by Shalender and Sharma (2020). This pertains to the recognition and understanding of diverse environmental concerns. The topics mostly encompass environmental challenges or unresolved inquiries that necessitate their resolution (Schuitema et al., 2013). The factor in question pertains to the alteration in consumer behavior concerning ecologically sustainable products, services, or processes (Ajzen & Fishbein, 2010; Bamberg & Möser, 2007; Hines et al., 2018; Mohamed et al., 2016). Numerous research have elucidated the impact of environmentally conscious behavior. For instance, a research study carried out in the United Kingdom revealed that those who prioritize environmental concerns have a favorable attitude towards electric vehicle ownership (Skippon & Garwood, 2011). In the context of the study's target market, the researchers looked for relevant literature that demonstrated how German drivers consider the environmental aspect to be a significant determinant in their car purchase decisions (Lieven et al., 2011). Simultaneously, Egbue and Long (2012) reached the conclusion that customers hold the belief that the decreased carbon dioxide emissions associated with electric cars will serve as a preventive measure against more harm to the environment (Egbue & Long, 2012).

Governments assume a pivotal role in various nations by actively facilitating the advancement of electric vehicles via activities such as research and development, policy design and implementation, infrastructure building, as well as the creation and periodic assessment of national plans (Governance, 2013). One of their primary responsibilities is to establish sustainable connections between these vehicles in order to mitigate oil consumption and air pollution. Electric vehicles (EVs) play a crucial role in achieving national environmental objectives, as highlighted by Figenbaum and Kolbenstvedt (2013). Electric vehicles (EVs) have the capacity to decrease noise levels and mitigate the presence of local air pollutants, including nitrogen oxides, particulate matter, and ground-level ozone. The individuals responsible for these detrimental effects are closely linked to significant public health risks inside urban areas (Helland, 2009, p.9). Furthermore, it is imperative that they ensure the power utilized for the CI originates from environmentally sustainable sources. The absence of governmental efforts to mitigate the activities of these significant polluting entities would result in a limited level of environmental safety for the EC. Additionally, it is imperative for governments to have the desire to reduce the presence of internal combustion engines (ICE) in the market. Governments possess It is imperative for governments to provide charging infrastructure in accordance with the prevailing needs. According to the study conducted by Mock and Yang (2014), it was determined that national policies implemented by governments had a positive influence on sales. Additionally, the lowering of the Total Cost of Ownership (TCO) for owners was found to be beneficial. One of the benefits of national policies is their ability to effectively reach and impact every economic entity inside a country. In instances where local governments exhibit limited commitment, national policies can nonetheless offer alleviation with respect to the given policy. According to Hwang's (2015) study, it is crucial for municipal governments to take more measures, as observed in Oslo, Norway and Amsterdam, Netherlands. The responsibility for implementing laws devised by federal governments, such as those pertaining to parking regulations and bus lane access, mostly lies with local governments. Local policies have a significant impact in mitigating total cost of ownership (TCO). The parking charges and toll rates are determined by the local municipalities. If these factors offer substantial advantages for the field of electronic commerce, then the level of ownership may see an increase. According to Assumetal's (2014) findings, the implementation of appropriate government policies has the potential to significantly boost the numbers associated with the EC. Individuals recognize the benefits associated with possessing an electric vehicle (EV), and whether motivated by environmental concerns or financial considerations, they are inclined to acquire it as a substitute for internal combustion engine (ICE) vehicles. However, it is important for owners to also consider the environmental aspect of the EC. Numerous nations have implemented the gradual elimination of fossil fuel-powered automobiles, with the majority intending to enforce a prohibition on the sale of internal combustion engine cars by the year 2030. Despite its participation in significant international accords, Brazil has yet to implement substantial measures aimed at phasing out combustion engine cars and fostering the use of electromobility. Denmark has implemented a policy wherein electric vehicles are granted an exemption from the vehicle registration tax, which is recognized as one of the most substantial fees of its kind globally. The exemption remained in effect until 2016, at which point a tax plan for registering electric cars with internal combustion engines was introduced. This scheme commenced at a rate of 20% and then escalated to 150%. In 2018, the Danish Government made the decision to suspend the previously scheduled escalation of the electric car registration tax, maintaining it at a fixed rate of 20%. Individuals were provided with tax deductions of up to DKK 400,000 in the years 2019 and 2020 as a kind of compensation. Hence, the post-tax selling price of electric cars had a comparable pattern in Norway and Denmark until 2016, and maintained a similar trend over the years 2019-2020, with the exception of the highest-priced brands. The transportation industry in Malaysia, a developing country, is a significant contributor to environmental issues, particularly in terms of carbon emissions and the depletion of natural resources. Motor cars, in particular, have a direct role in exacerbating global environmental problems. Additionally, it assumes a significant function in mitigating carbon emissions originating from motor vehicles, therefore diminishing the likelihood of environmental complications. The electrification of electric cars and road transport is widely recognized as a favorable approach in the transition from internal combustion vehicles to electric vehicles, hence promoting urban sustainability. Nevertheless, the sales of electric vehicles in Malaysia continue to be quite low. One of the contributing factors to this phenomenon is often regarded to be the high cost associated with electric automobiles. Additionally, the limited availability of charging infrastructure nationwide and the relatively short operational lifespan of electric cars are perceived as barriers to the widespread adoption of this technology. The prevalence of domestically manufactured automobiles in Malaysia may be a potential obstacle to the widespread adoption of Electric Vehicles (EVs). In order to expedite the widespread acceptance and use of electric cars in Malaysia, the government of the nation is enacting tax reductions and adopting other measures aimed at incentivizing the purchase and utilization of electric vehicles.

4.7 Literature Conclusion

In summary, the sales of electric vehicles are seeing a notable surge, indicating significant potential for further growth through the utilization of digital marketing strategies. Given the emergence of virtual platforms and the increasing use of targeted advertising strategies, it is advisable to direct marketing efforts towards prospective customers interested in purchasing a car by providing them with information on electric vehicle (EV) manufacturers located in close proximity to their geographical location. However, while the remarkable surge in sales within the electric vehicle (EV) industry, the International Energy Agency (IEA) cautions that there remains a considerable journey ahead. The domain of electric cars is characterized by its high level of dynamism within the emerging global energy economy. According to Toyota sales Director Fatih Birol, the sector's achievement in establishing new sales records is highly promising; yet, it is crucial to avoid complacency. Policymakers, business leaders, and investors must exercise a high level of vigilance and resourcefulness to mitigate the risks associated with supply interruptions and assure the long-term availability of essential minerals. The resources invested in the production of electric vehicles (EVs) might potentially be used into digital marketing endeavors. The overall trajectory of electric vehicle (EV) growth is contingent upon the individuals involved at each phase of the sales cycle.

The electric vehicle (EV) sector is seeing significant growth, prompting individuals to seek ways to maximize their potential benefits from this emerging opportunity. Given the wide range of marketing strategies available, it is crucial to prioritize the identification of the most effective technique for a certain firm and its target audience. To enhance the EV marketing efforts, it is advisable to engage in collaboration with a team of digital marketing professionals.

Chapter 4. Method

4.1 Introduction

This study examines the attractiveness of electric vehicle (EV) marketing through the utilization of two distinct methodologies. The present study employed the Expert Group Method (EGM) as a means of soliciting expert perspectives. This involved an extensive review of relevant literature, conducting interviews, and afterwards synthesizing the findings into a hierarchical diagram. Furthermore, the utilization of quantification theory type I is employed for the purpose of examining the quantitative outcomes derived from a survey conducted using questionnaires. This approach facilitates the assessment of the significance attributed to appeal elements and marketing features, as determined by the reactions of the broader consumer population. The experimental protocols were executed in accordance with the principles of the Miryoku Engineering theory.

According to Blumberg, Cooper, and Schindler (2008), business research may be defined as a methodical investigation aimed at generating knowledge that facilitates the resolution of managerial issues.

The researcher devised a comprehensive framework to enhance the comprehension of the current investigation. This chapter elucidates the methodologies and procedures employed by the researcher in order to carry out the present investigation. In this section, a comprehensive outline of the research will be provided, encompassing the aims, objectives, research design, research question, and hypotheses. The summary will be presented in order to provide a comprehensive overview of the procedure, hence facilitating comprehension for the reader. The present study will employ the research philosophy, research methodology, methodological choice, and procedures of data collecting as outlined in the Research Onion model presented by Saunders, Lewis, and Thornhill (2019), which serves as the comprehensive theoretical framework for this research. Subsequently, this section will provide a comprehensive account of the people involved, the research design employed, the resources utilized, and the procedures undertaken within the designated period for the execution of this study. This section provides an account of how the participants were educated about the ethical aspects, including informed permission, data anonymity, and the research scope.

4.2 Research Objectives

The integration of online and offline tactics in electric vehicle (EV) marketing facilitates the development of novel design models that engage consumers and overcome sales barriers. The efficacy of electric vehicle (EV) marketing predominantly hinges on the utilization of online-to-offline marketing strategies and persuasive promotional techniques to incentivize and persuade people to adopt this particular mode of transportation. Moreover, much research has been conducted to investigate the intricate psychology of customers and their many considerations regarding electric vehicles (EVs). There are two fundamental concerns that warrant examination: the underlying factors influencing customer preference for electric vehicles (EVs) and the specific marketing attributes that effectively sway individuals towards embracing these automobiles. This study conducted an analysis of experts' perceptions and opinions gathered through interviews. It aimed to identify the key aspects that contribute to the attraction of electric vehicles (EVs), along with their associated appeal factors. The analysis was conducted using a system of semantic transformations. The utilization of a questionnaire survey and subsequent analysis enabled the quantification of the many strengths and weaknesses associated with each appeal element and attribute pertaining to electric vehicle (EV) marketing. Furthermore, it is possible to establish and utilize the connections between the aspects that contribute to the attraction of electric vehicle (EV) marketing and the characteristics of its design for the purpose of conducting further research.

4.3 Research Philosophy

The notion of research philosophy encompasses a set of underlying assumptions and attitudes towards the creation of new knowledge (Saunders, Lewis, & Thornhill, 2019). Within the realm of scholarly discourse, the phrase "academic literature" is often denoted as worldviews, as evidenced by the research conducted by Creswell and Creswell (2017). The main aim of this study is to offer a thorough representation of actuality. Saunders (2019) posits that within the domain of business management research, there are five fundamental philosophical views that are commonly utilized. The author delineates several approaches, including positivism, critical realism, interpretivism, postmodernism, and pragmatism. The study was undertaken within the context of pragmatic philosophy due to its perceived suitability for solving the research problem and validating the assumptions. This method has several advantages, such as the recognition of various viewpoints in the interpretation of reality (Saunders, Lewis, & Thornhill, 2019). Furthermore, it transcends the constraints associated with only embracing either an objective or subjective perspective while comprehending the cosmos. The utilization of other approaches was considered inappropriate for the research due to their propensity to limit the scope of the examination. The positivist approach is considered inappropriate for this research owing to its limited capacity to examine the viewpoints of participants within the context of universal laws or overarching assumptions that govern the universe, since this is a fundamental aspect of this philosophical standpoint (Creswell & Creswell, 2017). To fully grasp the concept of personal branding in the digital domain, it is crucial to recognize the unique context of Internet accessibility in Mexico City. Similarly, the critical realism method did not gain widespread acceptance as a research paradigm due to its predominant emphasis on performing historical assessments of organizational structures that exert effect on the issue being investigated.Saunders, Lewis, and Thornhill (2019) argue that this study does not have a direct correlation with the 35 observed occurrences in Research Philosophy. The interpretivism philosophy offers an alternate viewpoint, asserting that the examination of human interactions necessitates a distinct epistemological approach compared to the study of physical phenomena (Saunders, Lewis, & Thornhill, 2019). The aforementioned advancement has generated the capacity to function as a model for further exploration inside this domain. Nevertheless, this philosophical standpoint is founded on subjectivism, a theoretical framework that assigns considerable significance to the personal experiences of individuals and their interpretations as active participants in the research endeavor (Saunders, Lewis, & Thornhill, 2019). The researcher posits that embracing a pragmatic approach gives a more thorough analytical framework, since it encompasses a broader array of research methodologies to successfully tackle the study challenge. Postmodernism, as asserted by Saunders, Lewis, and Thornhill (2019), espouses a particular worldview that places significant emphasis on power relations and seeks to amplify the voices and viewpoints of marginalized individuals. However, the central theme of this work continues to attract scholarly attention, and it has yet to be thoroughly studied from both dominant and passive perspectives.

4.4 Research Approach

The research was carried out by employing primary data that was gathered through a survey. The primary aim of the study was to gather quantitative data pertaining to the influence of digital marketing and customer loyalty on consumer purchase intention. In order to accomplish this objective, the research employed two distinct independent variables, namely electronic word-of-mouth and customer loyalty, while assessing the dependent variable of purchase intention. The data will be subjected to multiple linear regression analysis in order to investigate the association between each independent variable and the dependent variable. Linear regression is a widely employed statistical technique utilized for the purpose of data analysis and prediction. The outcome is a multivariate model, as stated by Tranmer and Elliot (2008). Osborne and Waters (2002) assert that researchers must evaluate four fundamental assumptions. These assumptions encompass the normal distribution of variables, the absence of measurement error (reliability), the presence of a linear relationship between independent and dependent variables, and the assumption of homoscedasticity.

4.5 Practical Implications

This study aims to investigate the impact of individuals' intents to acquire electric vehicles (EVs) by analyzing their behavioral patterns. It seeks to address the issue of limited responsiveness towards Turkey's efforts to promote EV adoption and the subsequent advancement of green energy. The individuals in question are providing tangible assistance to government authorities, executives within the automotive sector, and marketers in order to promote the widespread acceptance and utilization of electric vehicles (EVs) inside the country of Turkey. The results suggest that there is a need to increase understanding regarding individuals' attitudes, perceived behavioral control, environmental concern, and green technology behavioral aspects in order to promote the adoption of electric vehicles. This study provided novel data indicating that consumers' level of environmental concern and faith in green technologies serve as antecedents to the adoption of electric vehicles (EVs). Hence, it is imperative for legislators and marketers to initiate promotional programs that bolster citizens' environmental concerns and attitudes towards electric vehicles (EVs) due to their ecologically sustainable nature. Various forms of communication may be utilized to disseminate information on the environmental benefits of green energy, such as written and printed ads, alerts delivered to smart phones through GSM operators, and public service announcements. These channels serve to highlight the preventive measures associated with green energy in mitigating the detrimental effects generated by the utilization of fossil fuels on the environment. Therefore, it is possible to enhance the perceived quality of electric vehicles (EVs) and diminish consumers' perceived danger associated with EVs. By enhancing environmental consciousness (EC) and green technology (GT), it is possible to modify and enhance persons' intents to acquire electric vehicles (EVs). The findings and recommendations presented in this study have the potential to contribute significantly to Turkey's sustainable development strategy by facilitating the adoption of electric vehicles (EVs). In light of the empirical findings from this study, it becomes evident that there is a need to develop solutions that are grounded in the behavioral factors of environmental consciousness (EC) and green technology (GT). These solutions are crucial in promoting widespread adoption of green energy, mitigating environmental pollution, fostering a greater preference for electric vehicles (EVs), and generating societal value for both governmental authorities and the automotive industry.

Chapter 5. Participants

To enlist participants, a non-probability sampling technique called volunteer self-selection was employed. The survey instrument was distributed through many channels, encompassing WhatsApp groups as well as the researcher's professional social media accounts, namely LinkedIn, Facebook, and Instagram. The selected approach was considered the most convenient due to its significant level of accessibility.

Moreover, the present methodology exhibited enhanced precision in terms of both temporal efficacy and participant availability, since subjects were furnished with a web link via social networking sites via direct messaging. The study allowed participants to engage in voluntary participation, and data was collected from individuals who willingly supplied their replies (Saunders, Lewis, & Thornhill, 2019). The next section will offer elucidations for the variables that have been chosen for inclusion in this survey.

5.1 Sampling

Bryman and Bell (2011) describe a sample as a subset of the population that has been selected for a particular study, taking into account statistical and quantitative research methodologies. In this particular case, the sample was acquired from the population residing in the capital city of Ireland, with a specific focus on those who had automobiles. The phrase "car owners" is frequently utilized in mainstream media to denote those between the age range of 18 to 60 years.

According to the application of an online sample size calculator (Sample Size Calculator: Understanding Sample Sizes, 2021), the estimated sample size for this investigation has been established as 100.

The survey employed a non-random convenience sample approach due to constraints in time and resources, which posed challenges in establishing a random selection procedure. Furthermore, the questionnaire was meticulously crafted with the intention of including a wide spectrum of demographic groups, so guaranteeing a comprehensive and varied representation of customers. The data collection process involved distributing the poll to acquaintances who possess a Tesla vehicle, in addition to soliciting replies from 18 distinct Facebook groups exclusively dedicated to Tesla owners throughout the globe. The survey findings were gathered and recorded in Webropol's response log, accommodating a maximum of 200 participants. The determination of the survey size and parameters was conducted with a software application known as GPower. The researchers determined that the sample size consisted of 110 participants. The final sample size consisted of 110 respondents, after removing 13 individuals who did not meet the eligibility criteria for the research and 2 participants who did not provide complete responses to all of the questions. All participants in the study willingly engaged in the research and were had the option to withdraw from the survey at any given time. The data obtained from the questionnaire was exclusively utilized for research objectives.

Chapter 6. Design

In contrast to the EGM approach, which utilized a semantic analysis of interview data to ascertain the general preferences of experts, this study employed quantification theory type I to conduct a statistical analysis of a consumer survey. The objective was to identify significant appeal factors and marketing characteristics associated with emotional tendencies. In addition, quantification theory I was employed to assess the "upper-level" and "lower-level" components produced from the examination of the EGM. Through the utilization of multiple linear regression techniques, Quantification Theory Type I has the capability to forecast the association between a response variable and categorical variables. Quantification theory type I can also establish the correlation between design attributes and classifications. Furthermore, Quantification Theory Type I has the capability to assess the magnitudes of the variables that influence the preferences of product users. Miryoku Engineering employed the quantification theory type I methodology to assess the extent to which a product elicits emotional inclinations among consumers, as influenced by its distinctive attributes and traits. The items for the questionnaire survey were chosen based on the frequency of occurrence of EGM events in this study. A questionnaire according to the EGM hierarchy was employed to quantify the responses of customers, utilizing Quantification Theory Type I, in order to assess the significance of attraction elements and critical assessments pertaining to electric vehicle (EV) marketing. In particular, the questionnaire used a hierarchical structure consisting of three levels: the "upper-level," "lower-level," and original evaluation items. This structure facilitated the transition from abstract imagery to specific design elements in the questionnaire. Subsequently, the questionnaire was meticulously designed to ensure that all inquiries were formulated in a succinct manner, hence facilitating respondents' ability to provide effective answers. The questionnaires were constructed based on the qualities and categories of electric vehicle (EV) marketing that were identified. The researchers employed purposive sampling methodology to choose a specific group of individuals for the questionnaire survey. The objective was to get feedback from general customers on their perceptions of electric vehicle (EV) marketing strategies in the context of this study. In addition, the utilization of snowball sampling may enhance the acquisition of highly qualified samples by implementing a continuous process of introducing and inviting participants. This approach ensures the sustained dependability of the questionnaire throughout the data collecting phase. Furthermore, the sample population consisted of individuals who made efforts to acquire electric vehicles or were already in possession of an electric automobile. Subsequently, those who had any inclination towards electric vehicles were omitted from the scope of this research.

Chapter 7. Materials

The materials included in this study were obtained through the analysis and evaluation completed in the literature review. The researcher was responsible for the development of the questionnaire. Nevertheless, prior to its deployment, a pilot study was undertaken using external participants in order to evaluate the comprehensibility of the questionnaire. The feedback provided by the participants was utilized to implement required adjustments aimed at improving the overall comprehensibility of the questionnaire. The supplementary contributions offered by the participants were carefully taken into account prior to the commencement of the data gathering procedure.

In this study, following the careful selection of important evaluation items for the questionnaire survey, the weights of the characteristics of electric vehicle (EV) marketing were assessed by analyzing customers' reactions using Quantification Theory Type I. The execution of the following processes was necessary. The initial assessment criteria for electric vehicle (EV) marketing, established by the Electric Grid Model (EGM), may be measured and quantified by calculating their coefficient of determination. The partial correlation coefficients were used to quantify the strength of the association among the upper-level assessment items. Simultaneously, the significance of lower-level assessment items was demonstrated by the category scores. Additionally, the formulae of quantification theory type I were implemented in Excel Macro for the purpose of conducting statistical analysis.

7.1 Quantitative Method / Survey

To be eligible for participation in the research, persons had to satisfy two specific requirements: firstly, they needed to be between the ages of 18 and 60 years, and secondly, they needed to be residents of Ireland. To begin the survey, only those possessing the aforementioned attributes are deemed qualified to provide responses to the opening three inquiries.

Items 4 through 16 were especially designed to evaluate individuals' degree of awareness, perspectives, and attitudes towards electric vehicles (EVs).

Google Forms was deployed as the medium for conducting the online poll to achieve the secondary aim. The survey consisted of a series of 16 questions written in English. Its purpose was to evaluate the validity or invalidity of the hypotheses derived from the literature review.

The survey was developed by the researcher, encompassing a combination of open-ended questions, scale questions, and multiple-choice questions. To promote a more comprehensive exploration of the subject matter, it was deemed necessary to mandate the inclusion of all types of questions, particularly those that are open-ended in nature.

Considering the variables of reliability and consistency, it is worth mentioning that the online survey utilized uniform questions across all participants. Before responding to the survey, individuals were obligated to satisfy two distinct demographic prerequisites: being a resident of Ireland and belonging to the age bracket of 18 to 60 years. It is important to acknowledge that the survey remained unaltered during the prescribed period in which it was conducted.

Chapter 8. Procedure

The primary purpose of the research strategy is to enhance the researcher's capacity to effectively answer the research question and achieve the research objectives. Technological advancements have contributed to the broadening of options available to researchers, as noted by Creswell (2014, p. 12). Saunders and Lewis (2018, pp. 119-127) provide an overview of several research approaches, encompassing experiment, survey, case study, action research, grounded theory, ethnography, archival research, and narrative inquiry.

It is acknowledged that many techniques may be utilized for different research kinds, with certain strategies demonstrating a stronger alignment with the deductive approach, while others are more suitable for an inductive or abductive approach. Saunders and Lewis (2018, p. 127) emphasize the need of recognizing that these tactics are not mutually exclusive, and it is customary to use many research strategies.

According to Saunders et al. (2009), the utilization of the survey technique is frequently associated with the deductive approach and is mostly utilized in research endeavors that seek to investigate and depict phenomena. Quantitative research yields data that is distinguished by its generalizability, systematic arrangement, impartiality, and a level of agreement among researchers. The researcher utilized an online platform known as 'Google Forms' to create survey questionnaires, which can be accessed over the Internet. Following this, the aforementioned inquiries will be disseminated using internet-mediated connections, strategically distributed throughout diverse social media platforms with the aim of effectively reaching the designated target group. The poll is designed for those who are part of the Irish population and hold a valid driving license. The researcher employed quantitative data to investigate the specific study question.

8.1 Data Analysis Procedure

The quantitative data collected from the survey participants was analyzed with IBM SPSS software. This capability facilitates the anticipation of precise values of variables given particular circumstances. The study focuses on predicting purchase intention as the dependent variable, using customer loyalty as one of the independent factors to create predictions about the dependent variable. It is postulated that a discernible correlation exists between the independent and dependent variables, exhibiting varying degrees of importance in this association.

8.3 Evaluation of Methodology

This study examines a theory that is widely recognized for its validity in explaining consumer behavioral intentions and has been extensively employed in significant studies focused on predicting behavioral intentions. This study aims to investigate the many elements that influence persons' intentions to acquire electric vehicles. Specifically, it focuses on customers' environmental concerns and their faith in green practices within the framework of the theory of planned behavior. The research has proven to be beneficial in enhancing the knowledge and comprehension of marketers that engage in or want to engage in research pertaining to the acceptance of environmentally friendly energy-consuming cars, namely electric vehicles (EVs), by establishing a connection between customers' willingness to pay for EVs and their behavioral variables. There is a pressing imperative to establish environmental consciousness throughout society with respect to the future of the global community. Primarily, it is imperative for authorities to have a significant role in ensuring the widespread incorporation of environmentally friendly and sustainable resources into society. While the nation's sustainable development strategy is progressing on a worldwide scale, there is a need to enhance public understanding regarding consumption patterns to encourage voluntary action within society towards reducing CO_2 emissions. The utilization of green energy is increasingly recognized as a potential solution to mitigate future water and energy scarcity issues. Consequently, the adoption of green energy sources is expected to expand to a wider range of geographical locations.

8.4 Limitations

The primary objective of this study was to offer a comprehensive comprehension and perspective on the subject matter of social media marketing. However, it is important to acknowledge the presence of some constraints encountered during the research process. Initially, it is important to acknowledge that the temporal and resource constraints imposed on this study were restrictive. Consequently, in order to conduct a more precise and dependable investigation, a greater allocation of time is needed. The distribution of the survey was constrained by temporal and resource limitations, resulting in its exclusive dissemination within Facebook groups and personal networks, such as friends and family. As a result, the dataset exhibited a significant bias towards male participants and individuals from Finland. The survey questions had a high level of formulation quality, resulting in the generation of data that were both clear and succinct, and aligned with the stated assumptions. Nevertheless, the inquiries pertaining to client participation were excessively ambiguous and lacked substantial significance, since they just focused on the act of accessing social media platforms. Ultimately, the replies may have been influenced by the presence of loyalty bias. All participants in the study were individuals who owned cars, indicating that they had already made the decision to acquire an electric vehicle (EV) based on their belief in its merits. This predisposition may potentially influence their responses to specific questions, introducing a potential bias in their judgment.

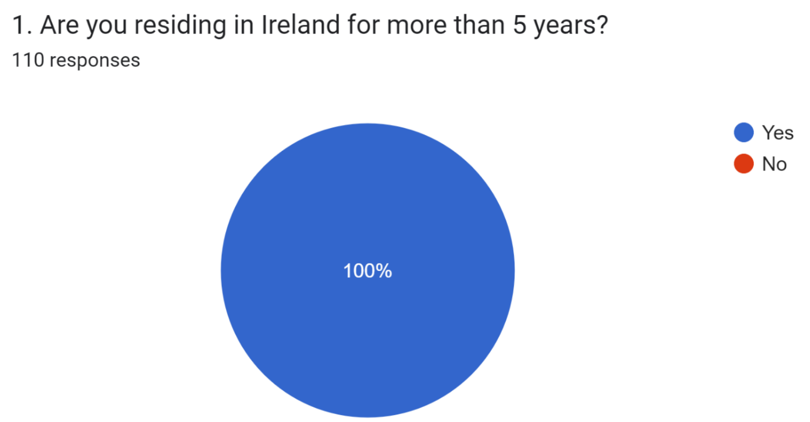
Chapter 9. Ethics

The term "ethics" in this study pertains to the researcher's adherence to ethical conduct with regards to the rights of those involved in or impacted by this research. According to Saunders et al. (2009), the concept of research ethics pertains to the establishment of a research process that is both robust in design and ethically justifiable to all parties involved. Cooper and Schnidler (2008, pp.34) define ethics as the principles or guidelines that govern moral decision-making and interpersonal conduct. Consequently, research ethics pertains to inquiries regarding the formulation of research topics, data collection methods, access acquisition, confidential data processing and storage, as well as the analysis and presentation of research findings in a morally upright and responsible manner (Saunders et al., 2007). The primary focus of the researcher in this study pertains to the issue of population accessibility. According to Robson (2002) and Sekaran (2003), it is imperative for researchers to refrain from exerting any form of pressure on prospective participants in order to obtain access. According to Saunders et al. (2009), it is imperative that the researcher respects the participant's right to withdraw from the survey procedure at any given moment in time. Another ethical worry arises from the possibility that some respondents may not thoroughly read the questions and instead arbitrarily select responses. Additionally, the level of honesty in respondents' answers to the questionnaires cannot be guaranteed (Saunders et al., 2009). It is imperative to ensure the strict confidentiality of all data and conclusions, while also ensuring that researchers adhere to the relevant data protection regulations. As previously stated in the preceding chapter, Google has been chosen as the designated entity to oversee the administration of the questionnaire. All data will be gathered and stored utilizing the services offered by this provider.

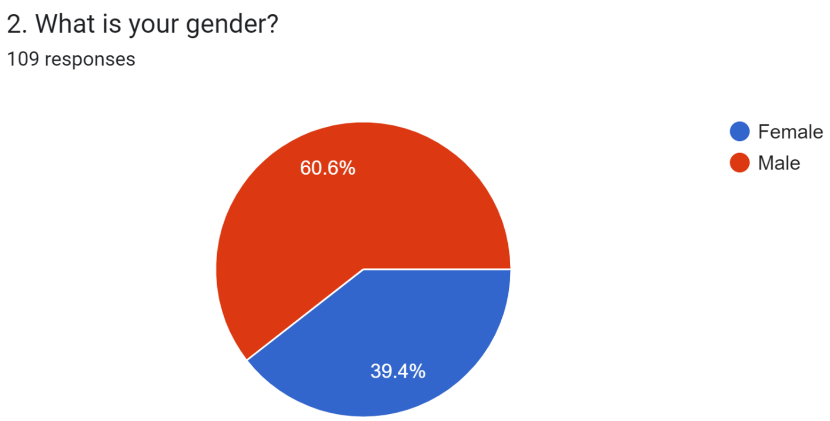
Chapter 10. Results

10.1 Data Analysis and Findings

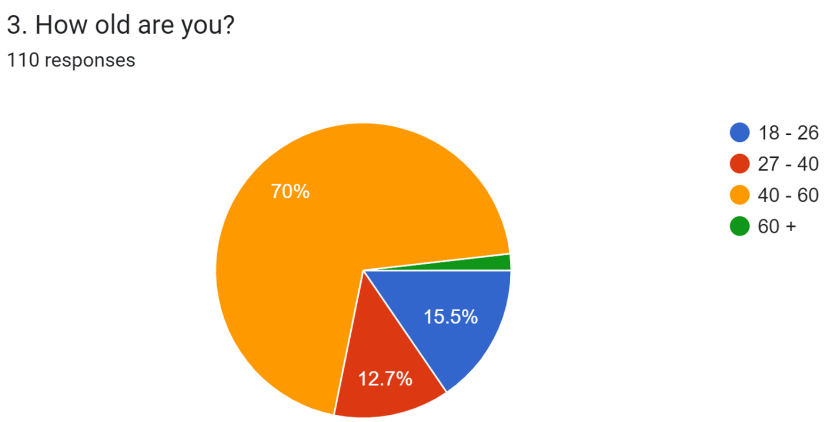
This section will delve into the findings that will be presented in a structured manner, beginning with an overview of the demographics of the respondents.



From the Question 1, it is clear that all the valid responses are taken from people reside in Ireland. So, it gives a clarity that automobile market is not matured in Ireland as there are some restrictions based on EU laws. All 100% valid responses shows that people are from the Republic of Ireland.

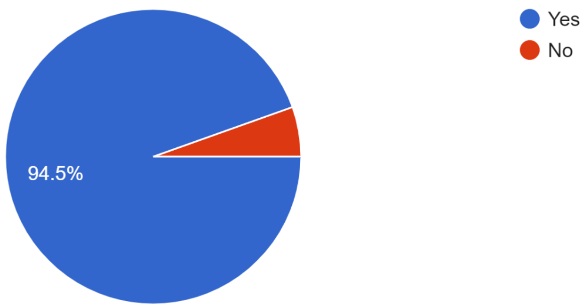


Question 2 shows that the 60% of the valid respondents are Male and they make a contribution in terms of reflecting of people who attended the survey. Around 40% of the people are Female and it reflects both gender are diverse and it will gives us a brief about the Ireland Car owner insights.



Question 3 In this survey it is evident that people who owns car are high in the 40-60 category and they prefer travel in own cars and not preferably in the public transports. The 12% is from the 27 - 40 age group. And 15% from the 18 - 26 age group.

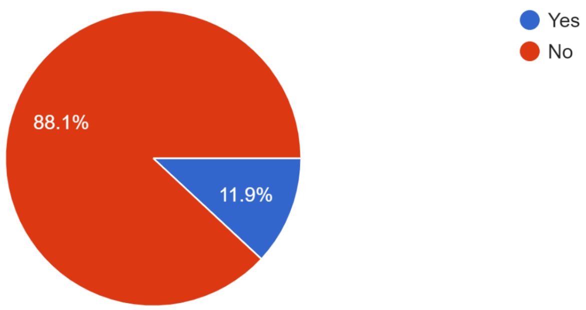
4. Do you own a car at present?
110 responses



Question 4

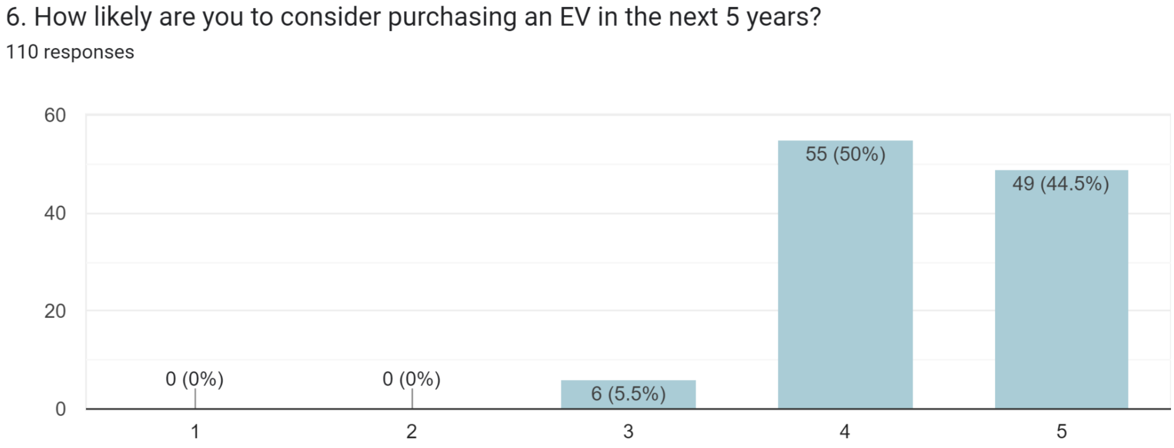
In this case the 94% of the respondents are making the answer that they own a car and possibly they might be thinking of owning a EV. Less than 5% people said that they do not own a car.

5. Have you driven a EV before?
109 responses



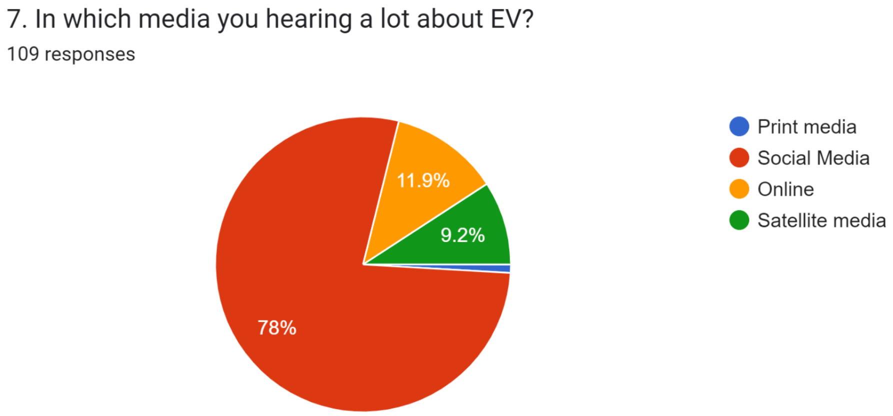
Question 5

This question is quite interesting as 88% people said from the whole survey that they had driven a EV either a test drive or from family and friends or official. But the main subject is that the possible chance of owning a electric car is high they have done it repeatedly. More than 88% have experience and possibly a good experience so that they may take a decision of showing a interest to own a EV car or they aware about what's going around the promotion of EV.



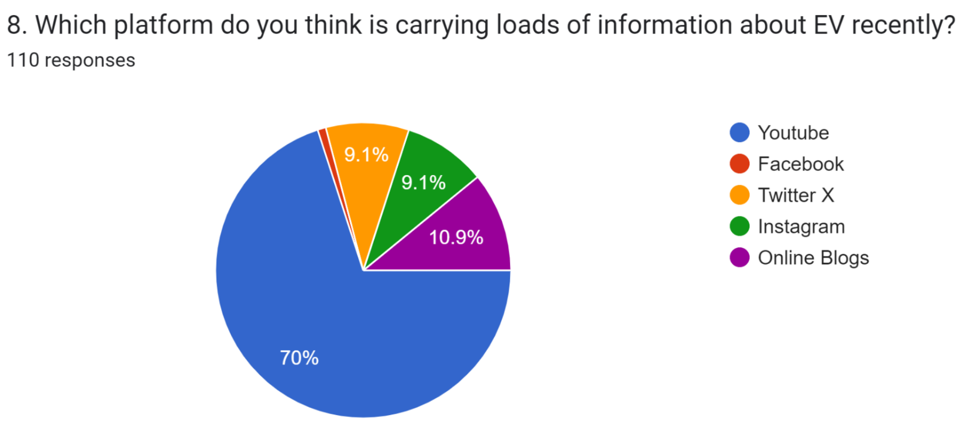
Question 6

This is a direct question to the respondents whether they have an idea to own a EV in the next 5 years. From the researcher perspective this is huge as more than 94% said that likely or most likely they will buy a electric vehicle. The major reason for this is the governments initiative in focusing on the EV rather than the fossil fuels. Many countries have set target to remove the fossil cars out of production from 2030 and almost everyone from 2050. Only 6% feel that they take a neutral stand in terms of owning a EV.



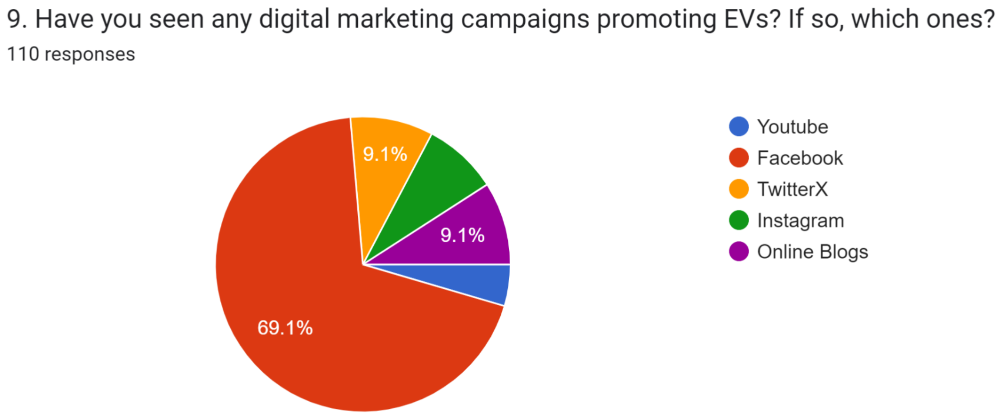
Question 7

This is something interesting to know from the survey responses, as 78% reported that they have seen something or big ad campaign from the social media recently. The majority of the people from the 40-60 age group reported this, which is a huge surprise. The promotions in the social media is increasingly higher nowadays.



Question 8

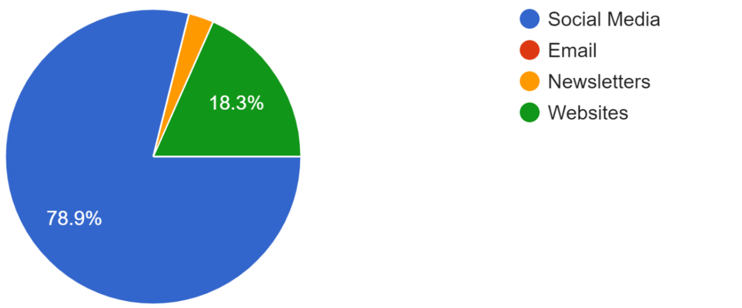
It is a clear indication that over 70% have seen some or other activity in the youtube which is relevant to EV. Either there is a much of customers available who look for EV contents online or it is cheap or some other ways useful for the promotion of electric vehicles. The second next activity is seen on Twitter with 9% and many have read online blogs with 10% people. A complete sweep of social media channels with 30% cumulative activity seen online.



Question 9

The researcher asked the respondents whether they have seen any EV campaigns online recently it is said that 69% of the people feel that some or other digital campaign online which promotes buying or owning or riding an EV. As from the earlier youtube shown as the content which covers much about electric vehicle. One reason which shows youtube as the educational platform which in detail covers the experience of making, using or technological development in the EV. The second most reported ad campaigns exclusively for EV is from Twitter, instagram, online blogs. Facebook is oldest which has over billion active users target the potential buyers with facebook post, stories, ad, images, activity such as promotional contents.

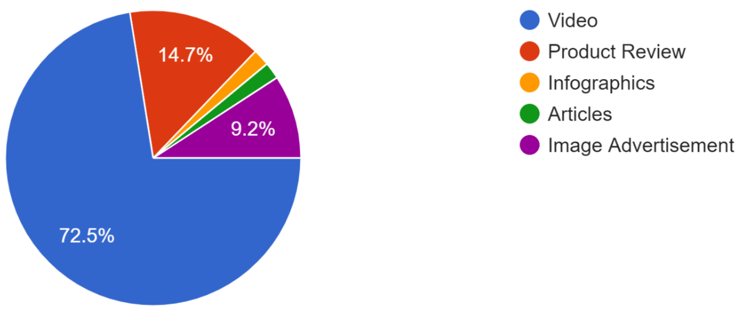
10. Which digital channels do you prefer to receive information about EVs from ?
109 responses



Question 10

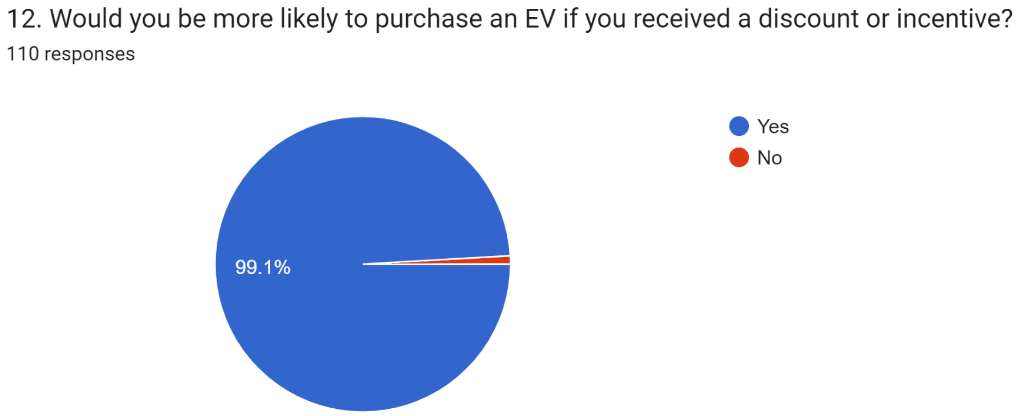
This question shows the information that the respondents want to see more from EV advertising companies to show them on Social media. In fact it is evident that many spend their online time in social media which they want to see more advertisement based on several consumer preference factors. This data is something potential EV buyers wants to see from the advertising companies that around 78% wants to see their social media to have some or other content related to electric vehicles. And as many as 18% would like to see some sort of activity in websites other than social media including search engine ads.

11. What kind of content do you find most helpful when learning about EVs (e.g. videos, info graphics, articles)?
109 responses



Question 11

In the above pie chart it is informed that more than 72% of the potential EV buyers prefer to see something in video format while learning. This is actually correlate with the earlier data that Youtube has much activity in consumer content in terms of review, experience, vlogs. Many other method of learning materials may be sown to potential customers which is the 14% prefer product review from existing customers or influencers who can share the content online and which may be promoted by EV manufactures so that the organic promotion may be possible in reaching the maximum customers. Surprisingly around 9% feel that they would like to have some knowledge in the form of image advertisement about EV.

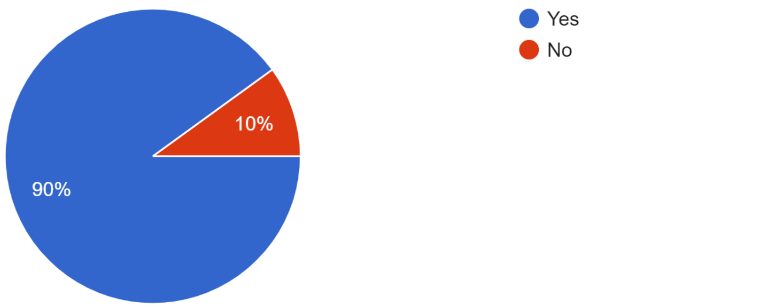


Question 12

The intention to buy a EV is much higher with around 99% said that if they given incentive or discount. There is a hidden detail in this question as many feel the prices are so high so that they want discount in price to make it affordable as petrol cars or diesel vehicles. Less than 1% respondent said that they are ready to buy the EV even if they do not have discount and incentive. Although this fact will help in strategize the upcoming ad campaigns to show more exclusive offers or unbeatable price offers to make it little affordable.

13. Do you think Digital Marketing plays an significant role in promoting the positives of owning an Electric Vehicle?

110 responses

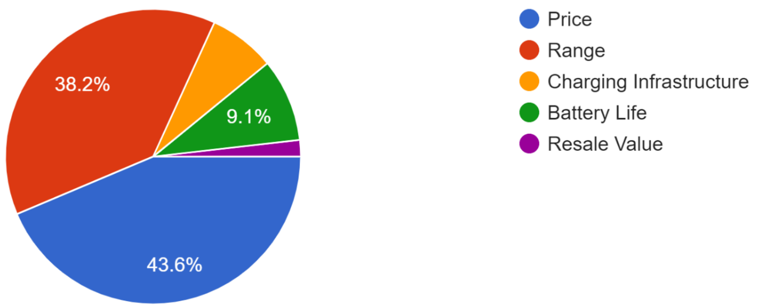


Question 13

The digital marketing plays an extremely important role in promoting the positive side of electric vehicles. One such thing is environment friendly, less expenditure in terms for fuel. While taking this into the account, 90% of the respondents feel that digital marketing has a huge role in bringing the awareness about the electric vehicles. Only 10% of the people feel that there are other ways to get a promotion for electric vehicle.

14. Which is the important factor or USP you think for what people make an EV purchase?

110 responses



Question 14

In the above pie chart distribution it is evident that the respondents feel that price of EV is quite important in terms of USP. The second most factor people say that range of the vehicle because it is quite usual for companies to claim 200 miles per charging and the vehicle might clock half of that. The third most preferred USP from a potential customer perspective is that battery life of a EV is quite significant to decide the purchase.

Chapter 11. Discussion

This part will examine the correlation between the extant literature in the literature review and the data obtained from the survey, as well as their respective impacts on the research inquiries.

The establishment of client trust in a corporation has been identified as a pivotal element in enhancing consumer choice and fostering customer loyalty. The study undertaken aligns with the current body of literature. Based on the findings derived from the survey, it was observed that participants expressed a perception that the electric vehicle (EV) offers a certain standard of excellence and contentment. Consequently, this phenomenon had a beneficial impact on electronic word-of-mouth (eWOM) and consumer loyalty, as individuals exhibited a greater inclination to express favorable sentiments towards the company and maintain their allegiance. This phenomenon is also evident in prior scholarly works (Martinez & Rodriguez de Bosque, 2013; Igenhoff & Sommer, 2010), where it has been demonstrated that the establishment of confidence in a firm may result in repeat purchases, irrespective of the company's public image, therefore contributing to sustained economic prosperity in the long run. According to Schumacher (2019), Geissler et al. (2014), and Agarwal & Bangeja (2022), establishing trust and credibility with customers via social media platforms has the dual effect of enhancing positive feedback and offering prospective customers a more transparent perception of the company, thereby bolstering the credibility of electric vehicles (EVs). The establishment of trust in a company plays a pivotal role in fostering strong customer loyalty and generating good electronic word-of-mouth. In order to attract buying customers, particularly those that exhibit loyalty, it is imperative for a firm to establish a high level of confidence in its brand or organization. This observation indicates that the firm functions at a superior level and engenders trust in its brand name.

The findings obtained from the survey pertaining to consumer interaction were found to possess a lesser degree of significance than initially expected based on the existing body of scholarly research. The analysis of the survey data indicates that the levels of consumer engagement among the respondents are not excessively low. However, the relationship between customer engagement and positive feedback, as well as customer loyalty, does not exhibit a substantial degree of linkage. The success rates of the techniques were not provided in the previous research (Lashley, 2017). According to the literature analysis conducted by Hennig-Thurau et al. (2004), it was found that corporations have enhanced their level of client interaction on social media platforms as a means to amplify good electronic word-of-mouth (eWOM). The significance of customer involvement in fostering strong customer loyalty and good electronic word-of-mouth is quite limited. The level of consumer engagement in online forums and various social media platforms does not exert a significant influence on customer purchase intention, unlike other factors.

Chapter 12. Conclusion

In summary, the impact of internet marketing on the sales of electric autos is significant. Businesses may enhance the probability of prospective consumers making a purchase by employing focused marketing strategies, establishing brand recognition, and delivering a favorable customer experience. Nevertheless, digital marketing encounters some obstacles, like the imperative to differentiate oneself in a saturated market and the continuous need to adjust to emerging technological developments. Business enterprises who effectively navigate these obstacles will undoubtedly see substantial advantages from digital marketing, such as heightened sales and a larger client base that is actively engaged.

The last portion of this thesis elucidates the primary discoveries derived from the research and their consequential relevance. Subsequently, the next section will delve into the ramifications for marketers and enterprises, elucidating the significance of this research in relation to their operations. In conclusion, this study acknowledges its inherent limitations and provides recommendations for future research endeavors. The findings of the study indicated that Tesla's utilization of social media methods had a favorable impact on customer purchase intention. The study revealed a favorable association between customer involvement, product satisfaction, and corporate trust with positive electronic word-of-mouth (eWOM) and customer loyalty. Customer purchasing intention was positively influenced by these two characteristics.

This factor presents challenges in the widespread use of electric vehicles. Hence, it is imperative for government managers and marketers involved in the electric vehicle (EV) industry to establish and maintain a robust system of communication that is both coherent and persuasive, in order to foster a sense of trust among consumers towards EVs. When ambiguity occurs, it has the potential to heighten customers' perceived risks associated with electric vehicles (EVs). Providing a solution to mitigate uncertainty around the adoption of electric vehicles might serve as a positive motivating factor. In this context, it is possible for authorities and marketers to provide consumers compelling promotional campaigns that aim to encourage the adoption of electric vehicles (EVs). One potential approach for promoting green products is the utilization of impactful commercials that provide personalized connection with customers across various demographics. This strategy is particularly beneficial due to the environmentally favorable attributes associated with electric vehicles (EVs). Electric vehicles (EVs) are well recognized for their utilization of sustainable energy sources, lack of detrimental implications for the future, cost-effectiveness in comparison to conventional cars, and ability to mitigate air pollution, among other advantages. These tactics have the potential to foster environmental confidence in electric vehicles (EVs) and effectively influence customers to choose EVs.

11.1 Recommendations

The primary objective of this study report was to get a comprehensive grasp of the impact that various digital marketing methods may have on client purchase intentions. The literature review section of the thesis addresses the theoretical aspects, whereas the research paper consistently emphasizes the perspective of consumers. The present study successfully corroborated the hypotheses outlined in the literature review, as the primary outcomes of the investigation underscored and analyzed the importance of each independent variable in relation to the dependent variable, namely purchase intention. The research aims encompassed the following:

The study results demonstrate the efficacy of passive social media methods employed by electric vehicle (EV) firms, wherein many factors exhibit a positive influence on consumer purchase intention, serving as a metric to gauge performance. Moreover, the comparative analysis of the efficacy of various strategies employed by electric vehicle (EV) companies reveals a significant disparity between the industry leader and its competitors. Many traditional automobile manufacturers lag behind EV makers, indicating a discrepancy in their marketing strategies and other pertinent factors.

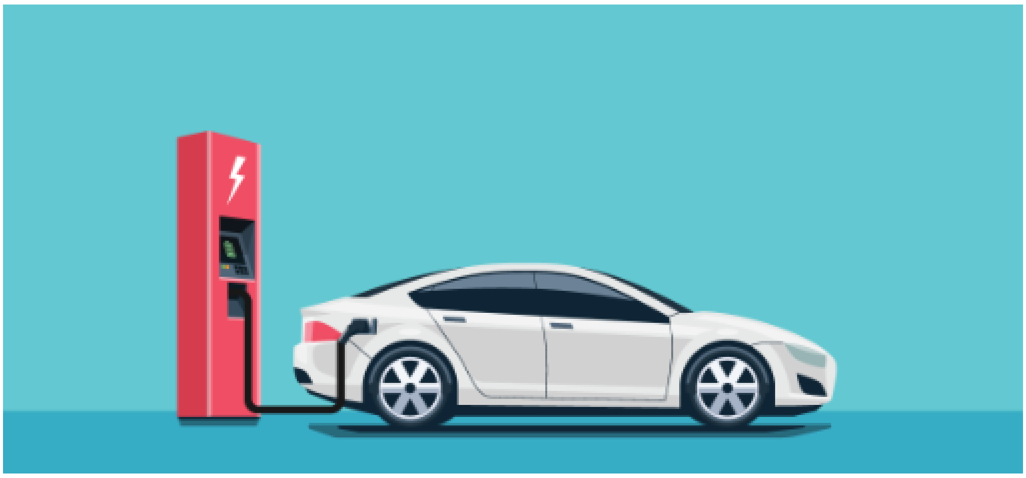
The efficacy of employing tactics such as positive electronic word-of-mouth and fostering customer loyalty has been empirically demonstrated to exhibit a positive correlation with consumer purchase intention, a crucial factor across several industries.

Digital marketing has shown to be highly effective in promoting the advantages and need of having an electric vehicle (EV). Additionally, extensive research in this field has yielded valuable insights from a customer standpoint, providing guidance on campaign strategies and expectations related to electric vehicles.

Chapter 12. Appendix

PROMOTING EV AUTOMOBILE GLOBALLY WITH THE HELP OF DIGITAL MARKETING

The objectives of promoting electric vehicles (EVs) through digital marketing on a worldwide scale include raising EV awareness and education, promoting EV uptake and usage, and establishing EVs as a competitive alternative to conventional gas-powered vehicles



1. Are you residing in Ireland for more than 5 years? *

- [ ] Yes
- [ ] No

2. What is your gender?

- [ ] Female
- [ ] Male

3. How old are you?

- 18 - 26
- 27 - 40
- 40 - 60
- 60 +

4. Do you own a car at present?

- Yes
- No

5. Have you driven a EV before?

- Yes
- No

6. How likely are you to consider purchasing an EV in the next 5 years?

	1	2	3	4	5	
Least	○	○	○	○	○	Most

7. In which media you hearing a lot about EV?

- Print media
- Social Media
- Online
- Satellite media

8. Which platform do you think is carrying loads of information about EV recently?

- Youtube
- Facebook
- Twitter X
- Instagram
- Online Blogs

9. Have you seen any digital marketing campaigns promoting EVs? If so, which ones?

- Youtube
- Facebook
- TwitterX
- Instagram
- Online Blogs

10. Which digital channels do you prefer to receive information about EVs from ?

- Social Media
- Email
- Newsletters
- Websites

11. What kind of content do you find most helpful when learning about EVs (e.g. videos, info graphics, articles)?

- Video
- Product Review
- Infographics
- Articles
- Image Advertisement

12. Would you be more likely to purchase an EV if you received a discount or incentive?

- Yes
- No

13. Do you think Digital Marketing plays an significant role in promoting the positives of owning an Electric Vehicle?

- ◯ Yes
- ◯ No

14. Which is the important factor or USP you think for what people make an EV purchase?

- ◯ Price
- ◯ Range
- ◯ Charging Infrastructure
- ◯ Battery Life
- ◯ Resale Value

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