ST. MARY`S UNIVERSITY

SCHOOL OF BUSINESS

DETERMINANTS OF CUSTOMER BUYING DECISIONS TOWARDS THE PURCHASE OF AN ELECTRIC VEHICLE (EV) IN ETHIOPIA.

By

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A Research Thesis Submitted for the Partial Fulfilment for the Award of Master of Arts in Marketing Management

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ADDIS ABABA

Declaration

I, (Nahom Dagne Wolde), the under signed, declare that this thesis entitled: "Determinants of Customer Buying Decisions Towards the Purchase of an Electric Vehicle (EV) in Ethiopia." is my original work. I have undertaken the research work independently with the guidance and support of the research supervisor/advisor. This study has not been submitted for any degree or diploma program in this or any other institutions and that all sources of materials used for the thesis has been duly acknowledged.

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This is to certify that the thesis entitled: [Determinants of Customer Buying Decisions Towards the Purchase of an Electric Vehicle (EV) in Ethiopia.] submitted in partial fulfillment of the requirements for the degree of Masters of [Marketing Management] of the Postgraduate Studies, St. Mary`s university and is a record of original research carried out by [Nahom Dagne Wolde] [SGS/0429/2015A], under my supervision, and no part of the thesis has been submitted for any other degree or diploma. The assistance and help received during the course of this investigation have been duly acknowledged. Therefore, I recommend it to be accepted as fulfilling the thesis requirements.

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THESIS TITLE

DETERMINANTS OF CUSTOMER BUYING DECISIONS TOWARDS THE PURCHASE OF AN ELECTRIC VEHICLE (EV) IN ETHIOPIA.

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List of Abbreviations and Acronyms

EV	Electric Vehicle
BB	Buying Behavior
PF	Personal Factors
EF	Environmental Factors
DF	Dealership Factors
ANOVA	Analysis of Variance
MOT	Ministry of Trade and Logistics

Abstract

The purpose of this research is to determine the factors that influence Ethiopian consumers' decisions to purchase electric vehicles (EVs). In order to gather quantitative and qualitative information that illustrates the impact of factors influencing purchase decisions toward electric vehicles (EVs) on consumer buying behavior, this study used an *explanatory research approach*. Primary and secondary sources of data were used in the investigation.

Three hundred ten (310) respondents made up the sample for the primary data collection with stratified sampling method from automotive industry company and their customer database and ministry of transport and logistic , which was completed by questionnaire for quantitative data and interview for qualitative data. 291 of the total questionnaires that were distributed were deemed legitimate and were utilized to indicate a 93.8% response rate.

Both descriptive and inferential analysis was conduct by using STATA SE12 for data analysis. Mean, frequency, and percentage were used in descriptive statistics to characterize the respondents' demographics and to find and discuss the levels of independent and dependent variables. Correlation analysis was used to ascertain the link between the variables, regression analysis was used to ascertain the impact of the independent factors on the dependent variables, and inferential analysis was utilized to test the hypothesis.

The study's findings showed a positive correlation between purchasing behavior and each of the three independent variables—personal, environmental, and dealership characteristics. Regression analysis results showed that 90.4% of the variation in purchasing behavior is predictable.

Keywords: personal factors, Environmental Factors and Dealership Factors, and buying behavior.

CHAPTER 1

Introduction

1.1. Background of the Study

A growing number of people throughout the world are adopting electric cars (EVs) as a result of worries about air pollution, climate change, and energy security. But EV adoption has been comparatively limited in Ethiopia and other sub-Saharan African countries. Although Ethiopia's economy is among the fastest-growing in Africa and its transportation industry is rising quickly, the country's adoption of electric vehicles (EVs) has been sluggish for a number of reasons.

Global car ownership is increasing far more quickly than global population growth. There were about 50 million automobiles on the planet in 1950. This figure shot up to around 600 million by 1994. It is estimated that there will be more than 3 billion vehicles on Earth by 2050 if the current trend continues (Sperling, 1995). While automobiles provide users with freedom, privacy, and convenience, they also pose a threat to the environment. Significant volumes of carbon dioxide and other greenhouse emissions are released by internal combustion engine cars (ICVs), which have a negative impact on the environment and public health.. Efforts have been made to address these issues by developing cleaner fuels and implementing fuel catalysts The primary cause of the greenhouse effect, carbon dioxide emissions, is not efficiently reduced by these methods. One of the most important challenges we face today is balancing the issues brought on by the world's rising car population without sacrificing people's freedom of choice and mobility, which is a vital component of democratic society.

Replacing the current fuel vehicles with electric vehicle models is one way to find a solution. The most obvious and accessible ways to do this are to increase the efficiency and lower the emissions of ICVs; alternatively, you may investigate cleaner propulsion systems or convert to less hazardous fuels (Sperling, 1995, for example). Regretfully, though, not much has changed in terms of using these strategies to assist the environment. Consequently, there is a growing interest in creating cars with less polluting propulsion systems that can cut down on both greenhouse gas emissions from the transportation sector and local pollution. Even yet, there are still issues with

modern electric vehicles (EVs) that make them less desirable than internal combustion engine vehicles (ICVs). Obstacles including short driving ranges, lengthy recharge periods.

Contrarily, EVs provide benefits including cheap fuel, an extended electric motor lifespan, and less maintenance. Compared to ICVs, EVs would be more advantageous if the whole costs of environmental pollution were taken into account. As a result, educating the public on the benefits and drawbacks of this novel technology will be a critical task for marketers and legislators hoping to develop a worldwide market for electric vehicles. Potential customers view EV technology as a novel and unusual propulsion method that largely resolves local emissions, one of the numerous non-market drawbacks of conventional ICVs, and dramatically lowers greenhouse gas emissions, another drawback.

Nevertheless, individual EV owners and users must pay a heavy price for these societal advantages such as limited driving range, reduced availability due to recharge times, decreased loading capacity due to batteries, and lower speed and acceleration. Furthermore, the usability of EVs is hindered by the lack of charging infrastructure.

Furthermore, additional societal problems associated with private transportation, like traffic jams, collisions, and the requirement for vast road networks, are not resolved by EVs. A product like this is difficult for potential buyers to purchase on its own. Therefore, for EV acceptance and widespread usage in society, clever marketing is required in addition to governmental assistance. In recent years, a number of scholars have carried out extensive investigations on national electric vehicle policy in both Europe and North America (Schot et al., 1994; Kemp et al., 1998; Weber and Hoogma, 1998; Truffer et al., in press).

There is a clear and pressing need for these studies to aid in the creation of suitable national and international policy in this field. Even still, without an expert and committed marketing campaign from EV manufacturers, all the work done to promote the market acceptability of EVs—including the formulation and execution of appropriate policy recommendations—will be for naught. Regrettably, there aren't many studies that promote and assist businesses in this sector in developing policies. A thorough understanding of the features of the early possible adopters as well as the product itself is necessary to design a marketing strategy that can effectively introduce the new product to the market and assure its acceptance (Goldsmith and Hofacker, 1991; Hawkins et al., 1998).

1.2. Statement of the Problem

Considering the potential economic and environmental benefits, Ethiopia has seen comparatively little market penetration and adoption of electric vehicles (EVs) as compared to other regions. It is necessary to look at the variables that affect Ethiopian consumers' decisions to acquire electric automobiles. To create strategies that effectively encourage the adoption of electric vehicles (EVs) and expedite the shift to a sustainable transportation system, policymakers, manufacturers, and other stakeholders must have a thorough understanding of these variables.

Empirical Gap:

- Limited research on electric vehicle adoption in Ethiopia: Few empirical studies have been conducted with a specific focus on Ethiopian customers' purchasing decisions when it comes to electric vehicles. The majority of the study on EV adoption that has been done thus far has focused on industrialized nations, and Ethiopian market-specific information is lacking.
- Lack of understanding of customer preferences and concerns: Comprehensive studies examining the particular elements influencing Ethiopian consumers' decisions to purchase electric vehicles are scarce. Developing successful marketing strategies and removing adoption barriers require a thorough understanding of the goals, preferences, and concerns of potential clients.
- Insufficient data on infrastructure and policy support: The adoption of electric vehicles is significantly influenced by government incentives, policies that promote them, and the accessibility and availability of charging infrastructure. However, there is a lack of empirical information regarding Ethiopia's present policy support and charging infrastructure conditions, as well as how these affect consumer purchasing decisions.

Practical Gap:

- Limited awareness and education: Regarding educating Ethiopian consumers about electric vehicles and their advantages, there is a practical gap. It's possible that a large number of prospective buyers are unaware of the benefits of electric vehicles (EVs), their features, and the possible financial savings connected to their adoption. It is essential to inform customers about these factors in order to affect their purchasing decisions.

- Affordability and availability of electric vehicles: The availability and cost of electric vehicles in Ethiopia constitute the practical gap. Since EVs are less expensive than conventional cars, adoption may be hampered by their limited availability in the Ethiopian market. It is imperative to tackle practical obstacles associated with pricing and guarantee a sufficient inventory of electric vehicles in order to stimulate consumer purchasing behavior.
- Charging infrastructure development: For electric vehicles to be widely used, a strong and extensive network of charging infrastructure must be established. However, there is a practical void in Ethiopia's infrastructure development for charging. To allay worries about range anxiety and charging convenience and positively impact customers' decisions, charging stations should be more readily available and easily accessible.

Understanding the key "Determinants of Customer Buying Decision towards the Purchase of Electric Vehicles in Ethiopia," attempts to pinpoint and examine the major variables influencing Ethiopian consumers' adoption of electric vehicles. The study used look into dealership, personal, and environmental factors as well as potential and difficulties for encouraging the purchase of electric automobiles in Ethiopia. The study's main objective is to offer information and suggestions that would help decision-makers in the policy and economic sectors of the automotive industry, as well as consumers, adopt a more positive mindset and a low-carbon, sustainable transportation policy in Ethiopia.

Given Ethiopia's developing economy and rising transportation sector, the country's delayed EV adoption is cause for serious concern. The adoption of electric vehicles (EVs) in Ethiopia has been slow, despite the vehicles' potential advantages, which include fewer greenhouse gas emissions, better air quality, and less dependence on fossil fuels. With an emphasis on the opportunities and difficulties for advancing the uptake of EVs in Ethiopia, this study aims to identify and analyze the factors influencing the decision to purchase an electric vehicle in that nation. The study specifically seeks to respond to the following research questions:

1. What are the key determinants that influence customer buying decisions to wards to the purchase of an electric vehicle (EV) in Ethiopia?

By answering these research questions, the study aims to provide insights and recommendations for policymakers, stakeholders, and other interested parties on how to promote the adoption of EVs in Ethiopia.

The study is important because it has the potential to further knowledge and comprehension of the variables influencing Ethiopians' decisions to buy electric cars.

1.2.1. Research Question

1. Does Personal factors affect the buying decision of the consumer to wards to the purchase decision of an electric vehicle?
2. Does Environmental Factors affect the buying decision of the consumer to wards to the purchase decision of an electric vehicles?
3. Is Dealership factors affect the buying decision of the consumer to wards to the purchase decision of an electric vehicle?

1.3. Objective`s of the Study

1.3.1. General Objective

To identify the key determinants that influence customer buying decisions to wards to the purchase of an electric vehicle (EV) in Ethiopia?

1.3.2. Specific Objectives

- To analyze if personal related factors(PF) that can affect the buying Behavior(BB).
- To investigate that the Environmental related Factors(EF) which affect the buying behavior (BB).
- To analyze if dealership factors(DF), that can affect the buying behavior(BB)

1.4. Significance of the Study

The study on the determinants that influence customer buying decisions to wards to the purchase of an electric vehicle (EV) in Ethiopia, several reasons:

- **Environmental benefits**: The utilization of electric vehicles (EVs) can bring about notable environmental advantages, for example, lowering greenhouse gas emissions and improving air quality. Ethiopia has established ambitious goals aimed at decreasing greenhouse gas emissions and fostering sustainable development. Embracing EVs can play a role in reaching these objectives, thereby making a positive contribution.

- **Economic benefits**: Ethiopia has abundant renewable energy resources, including hydropower and geothermal energy, which can be harnessed to power EVs. Adoption of EVs may also reduce dependence on fossil fuel imports, improving energy security and reducing trade deficits.

- **Social benefits**: The adoption of EVs can provide new economic opportunities, such as the development of new industries related to EV manufacturing, charging infrastructure, and maintenance. Additionally, the adoption of EVs can promote public health by reducing air pollution, which can have significant health impacts, particularly in urban areas.

- **Policy implications**: Policy and decision-making related to encouraging the adoption of EVs in Ethiopia can benefit from the study. Policies can be developed to encourage the adoption of EVs in the nation by identifying the potential and obstacles to EV adoption.

- **Knowledge gap filling**: Research on the factors that influence Ethiopian consumers' decisions on buying electric vehicles is currently inadequate. By addressing this knowledge vacuum, the study can offer insightful analysis and suggestions on how to encourage the adoption of EVs in Ethiopia to stakeholders, legislators, and other interested parties.

- **Marketing strategy**: helps the companies to understand what factor that affect the buying decision of EV and help them to prepare the appropriate marketing strategy.

1.5. Scope of the Study

This research paper will investigate the key personal, environmental, and dealership factors influencing customer buying decisions regarding electric vehicles (EVs) in Ethiopia.

- Personal factors: What are the individual characteristics, income, technological knowledge, resell value that influence the desire and likelihood of Ethiopian consumers to purchase an EV?
- Environmental factors: How do environmental concerns, climate change awareness, government regulation and incentive, taxation policy, legal and political issues, technician availability in the Ethiopia, the myth about EV, impact Ethiopian consumers' attitudes and decisions towards EVs?
- Dealership factors: To what extent does the quality of service, knowledge about the product, and charging infrastructure access offered by dealerships, dealers' capacity (maintenance and part availability) influence Ethiopian customers' trust, satisfaction, and ultimately, their decision to purchase an EV?
- Target Population: The study will focus on potential and existing EV customers in Ethiopia specifically in Addis Ababa, potentially segmenting them by factors like age, income level, gender and geographical location.
- Geo-scope; the study will conduct in Addis Ababa, Ethiopia
- Sample selection: main Automotive dealers MOENCO, Nyala motors, Green tech plc Marathon Motors, Orbis and MOT.
- Methodologically: Because the nature of the research question is the impact of environmental, personal, and dealership factors on buying behavior and their cause-and-effect relationship, the study used an explanatory research design. Descriptive and inferential analysis were specifically employed in the study to demonstrate the cause and effect relationship between dealership, personal, and environmental characteristics and buying behavior.

1.6. Limitation of the Study

The lack of secondary data on EV users in Ethiopia may restrict the study. The findings may not be generalizable due to Ethiopia-specific socioeconomic conditions and ambiguous government policy.

1.7. Organization of the Study

The following will be the structure of this study:

1. **Introduction**: An overview of the study's background, definition, and statement of the problem, as well as research questions, the study's purpose, significance, scope, limitations, and research gaps, will all be covered in the introduction.

2. **Literature Review**: A thorough analysis of the empirical and theoretical literature on the factors influencing Ethiopian consumers' decisions to buy electric vehicles (EVs) will be provided by the literature review. The literature evaluation will address issues including the advantages of electric vehicles for the environment, the economy, and society; opportunities and obstacles in the adoption of electric vehicles; and laws and other incentives that can be employed to encourage the use of electric vehicles.

3. **Methodology**: The methodology section will describe the research design, data collection methods, and data analysis techniques used in the study. The section will also describe the sample selection process and any limitations of the study.

4. **Data analysis, interpretation and discussion**: this section focus on the data analysis method, collection strategy, discussion and interpretation of the finding.

5. **Summary, conclusion and recommendation**: The results section will present the output of the research, organized according to the specified research questions. The section will include both quantitative and qualitative data analysis, as appropriate.

6. **References**: The references section will list all sources cited in the study, formatted according to a standard citation style.

CHAPTER 2

Literature Review

According to a study, poor nations like Ethiopia would find electric vehicles (EVs) to be a more viable choice than developed nations. This appropriateness results from elements including Ethiopia's lack of substantial oil reserves and the country's driving customs, which make EV technology both acceptable and financially feasible (Biswas & Biswas, 1999). However, increasing public awareness, influencing the decisions of potential customers, and cultivating an understanding of the potential advantages of using electric vehicles are necessary for the market for EVs to flourish successfully. The market for electric vehicles is still expanding, but a number of obstacles prevent them from being widely used. Rezvani et al. (2015) found that a number of factors affect consumers' decisions when they are thinking about buying an electric vehicle. Research has indicated that the integration of guardrails, terminals, transitions, and crash cushions into the design phases of road and highway construction can improve the overall effectiveness of Vehicle Restraint Systems (VRS) (Tahmasseby et al., 2021).

2.1. Empirical Literature Review

2.1.1. Technological Factors (Vehicle Performance)

While there are many benefits to using electricity as a fuel for vehicles, there are two significant drawbacks as well: storing it requires more room, which makes it bulkier and more expensive, and recharging the car takes longer than with conventional fuel sources. Due to these issues, electric cars have a lower range than diesel cars and are more difficult to refill while driving (Pearre et al., 2011). These technological elements—driving range anxiety, charging duration, and variety of EV models—have a big impact on how widely accepted electric vehicles are.

- Range Anxiety: According to studies, one major factor influencing a customer's decision to buy an electric vehicle is range anxiety (Jensen et al., 2013). According to Zhu (2016), most consumers want a driving range of 300 to 450 km, but the limited and uncertain range of electric vehicles often leads to range anxiety. This anxiety arises when the battery charge depletes during long drives, causing the driver to be unsure about the remaining battery

power and the distance they can cover. The limited and uncertain range of electric vehicles creates doubts among drivers, particularly for long journeys, reducing the reliability of these vehicles (Noel et al., 2020).

- Recharging Time: The driver's selected battery range determines how long it takes to recharge the electric vehicle's battery. The range is increased with increasing battery charge (Daziano & Chiew, 2012). However, because of the reduced refueling capacity, this results in longer charge times (Egbue & Long, 2012). Even though it's thought to be the least difficult element, charging time still has a role in whether or not an electric car is purchased (Carley et al., 2013). When compared to fueling an Internal Combustion Engine (ICE) vehicle, many drivers consider charging an electric vehicle to be more inconvenient (Brückmann et al., 2021). They think that the time it takes for electric cars to charge can interfere with their daily schedules, particularly for those who travel on the road and rely on fast refueling choices (Graham-Rowe et al., 2012). Furthermore, relying on a home charging station limits flexibility because it makes unforeseen journeys difficult while the car is charging. Uncontrolled electric vehicle charging could make it necessary for taxi drivers to return home and charge in their cars during periods of high demand, which would affect their capacity to offer continuous service (Christensen et al., 2012).
- EV Model Variety: According to Bessenbach and Wallrapp (2013), another major obstacle to the adoption of electric vehicles is the range of models that are now available adoption.

2.1.2. Economic factors (Financial Barrier)

Adoption is severely hampered by economic factors, such as the cost of batteries, fuel prices, and the expense of buying electric cars. According to consumer surveys, one of the main barriers to the purchase of electric vehicles is their high cost (Carley et al., 2013; She et al., 2017). The cost of producing electric vehicles is increased by the costly technology employed in their production (Noel et al., 2020). The complexity and cost of battery materials, such as lithium-ion batteries, are rising in tandem with efforts to extend the range of electric cars through the use of newer technologies (Biresselioglu et al., 2018). As such, it would be costly to replace these batteries in the future. This financial barrier is further compounded by a lack of knowledge on the expenses related to vehicle maintenance and gasoline. When compared to dominant designs that are currently in use, emerging technologies are less cost-competitive due to the lack of economies of

scale. Another factor is how much consumers believe electric cars are worth their money. The initial high purchase price of electric vehicles prevents consumer acceptance, even though their servicing and maintenance expenses are often lower than those of internal combustion engine (ICE) vehicles. This suggests that owners of electric vehicles may not be completely aware of the possible long-term cost reductions (Krause et al., 2013).

2.1.3. Lack of Infrastructure- Charging Networks

The absence of charging outlets when traveling presents another major obstacle (Krupa et al., 2014). Consumers frequently request more public charging stations in more locations to meet their needs during long distance travel (Habla et al., 2020). However, the establishment of charging networks is expensive (Brückmann et al., 2021), which casts doubt on the viability of expanding the infrastructure for charging stations in the future. Increased consumer adoption of electric vehicles could be facilitated by investments made by the government and manufacturers in the infrastructure needed for charging (Bhalla et al., 2018). Drivers are often discouraged from using electric vehicles when there is no reliable charging infrastructure in place. There is ongoing discussion on the necessity of public charging stations in order to encourage consumers to purchase electric automobiles. Increasing the availability of charging stations can reassure customers and support electric cars as a practical choice for mobility (Noel et al., 2020). It is possible to increase the visibility and acceptance of electric vehicles by keeping an eye on how the public views them in cities where charging stations are installed (Bunce et al., 2014).

2.1.4. Personal Characteristics

People make decisions based on logical assessments of stimuli and predicted results, according to the Theory of Planned Behavior (Ajzen, 1991). Attitudes are influenced by customer knowledge and experience (Ajzen & Fishbein, 1980). Adoption of electric vehicles is also influenced by individual factors such as gender, age, income, level of education, tastes, and environmental awareness. Environmentally concerned and well-educated consumers are more likely to purchase electric vehicles. Statements about socially acceptable behavior, regard for others, shared ideals, and social duty are examples of social pressure and expectations. People who care about the environment are motivated to buy electric cars for two reasons. First off, a car with a lower fuel consumption leaves a smaller carbon imprint. Second, the community can see what kind of car a

person drives. Peer pressure may cause people to buy electric vehicles in environmentally conscious communities where driving a fuel-inefficient car might result in social rejection and disgrace (Kahn, 2007).

Adoption of electric vehicles can occasionally be hampered by issues with size, performance, style, and safety. Adoption may also be hampered by a lack of knowledge about electric vehicles and their advantages (Wang et al., 2017). Manufacturers are discouraged from innovating in electric vehicles due to a lack of knowledge about future market potential (Lieven et al., 2011). According to Moons and Pelsmacker (2012), product designers and marketers ought to concentrate on creating and positioning electric vehicles in a way that will evoke favorable emotional reactions from buyers. Providing consumers with useful information can boost their readiness to change their behavior, lower doubt, minimize fatalism, and raise their awareness of the environment (Lane & Potter, 2007). Education and environmental awareness are typically linked, with postsecondary education helping to promote awareness of the possibilities for electric vehicle purchases to reduce climate change. Yet, better educated consumers frequently favor more costly cars with greater CO2 emissions (Peters et al., 2015).

2.1.5 Environmental Concern as a Factor

A number of factors, including population expansion, urban surface materials, deforestation, artificial heat, noise and air pollution, concrete buildings, and congested roadways, have been linked to the rise in urban temperatures (Sampson et al., 2021). Some people are very concerned about environmental protection and the loss of natural resources (Heffner et al., 2007; Mohamed et al., 2018). Until the matter was directly addressed, many participants in focus group analyses did not initially correlate their choices about car ownership with their sentiments toward the environment (Flamm & Agrawal, 2012). Most people believe that electric cars will be a viable option in the future for addressing environmental issues. Customers are driven to buy electric cars in order to lower their environmental impact and use fewer natural resources because they understand that doing so will dramatically reduce pollution (Skippon & Garwood, 2011), encouraging customers to buy electric cars in order to use less natural resources and lessen their impact on the environment (Ozaki & Sevastyanova, 2011; Mohamed et al., 2018). Nowadays, certain socioeconomic groups—such as environmentalists, early adopters, high earners, young urbanites, and tech enthusiasts—are the main users of electric vehicles (Axsen et al., 2015;

Talantsev, 2017). The societal advantages of driving an electric car, like lowering air pollution and greenhouse gas emissions, are covered by Skerlos and Winebrake (2010). Even when you take into account the emissions from the power plants that are used to charge them, electric vehicles have far fewer emissions than conventional internal combustion engines. Whether natural gas, coal, or renewable fuels are used to generate power for electric vehicles will determine how much of a difference there is.

2.1.5. Policies

Adoption of electric vehicles may also be hampered by consumer perceptions of policies and their acceptance (Brückmann et al., 2021). Adoption is greatly impacted by government policies, incentives, and restrictions pertaining to gasoline costs and the construction of fuel infrastructure (David Diamond, 2009). But consumers could not grasp these policies completely, especially if they change often, which could cause uncertainty and discourage people from buying electric cars (Kester et al., 2018). Policymakers are encouraged to permit corporations to conduct car experiments in order to stimulate the wider use of electric vehicles. This will help to facilitate the dissemination of electric vehicles in the market. This can be accomplished by taking steps like offering electric cars for surveillance or removing other possible roadblocks to customer purchasing (Sierzchula, 2014).

2.2. Theoretical Literature Review

The extant body of literature employs many methodologies to investigate the uptake of electric cars (EVs). Studies based on researcher-conducted surveys (Lieven, 2015; Adnan et al., 2018; Sovacool et al., 2019); research optimization techniques (Onat et al., 2016; Xiong et al., 2018); data obtained directly from drivers (Skippon et al., 2016; Berkeley et al., 2018); secondary data analysis (Sierzchula et al., 2014), and more are examples of these approaches. Additionally, research on nation-specific policies and ecosystems is conducted in the literature. For instance, due to their considerable usage of renewable energy sources for power generation, European nations like France and Norway are believed to be well-suited for the adoption of EVs. On the other hand, countries like Germany, the UK, or the USA should prioritize the decarbonization of their electrical generation to reap the benefits of reducing greenhouse gas (GHG) emissions (Onat et al., 2015; Casals et al., 2016).

The body of research to far demonstrates that a variety of factors affect EV purchasing decisions. (Lévay et al., 2017; Palmer et al., 2018; Skippon et al., 2016; Berkeley et al., 2018; Sierzchula et al., 2014; Schuitema et al., 2013; White and Sintov, 2017; Smith et al., 2017) These factors include vehicle price, total cost of ownership, driving experience, and charging infrastructure availability. Determining these crucial elements can help researchers and policymakers create models or techniques to forecast EV adoption rates. Furthermore, EV adoption and intention are influenced differently by mediating or moderating variables (Qian and Yin, 2017; Adnan et al., 2018). Gaining an understanding of these factors aids in improving one's understanding of the EV adoption model. Therefore, a comprehensive evaluation of the literature is required. Furthermore, as this subject has not gotten as much attention in the literature, a thorough understanding of how electric vehicles affect sustainability is required. Although sustainability performance has been included into many different industries, the domain of electric vehicles lacks such reviews. Aspects of adoption such as recurring and non-financial incentives (Hardman, 2019), motivators and barriers in European countries (Biresselioglu et al., 2018), and drivers and barriers for consumers adopting EVs (Rezvani et al., 2015) have only been partially covered by existing literature reviews on electric vehicles. Because of this, it is essential to understand this vast body of work, share its conclusions, and use an integrative literature analysis to pinpoint important terms and categories (Torraco, 2005, 2016; Liao et al., 2018).

An important innovation is the introduction of electric vehicles (EVs) to the market; generally, innovations are adopted using a time series model. According to Rogers (2010), this paradigm starts with a small group of innovators and early adopters, then the majority of customers, and lastly the lagging consumers. Since EVs are still relatively new in Spain, not much is known about them among the general public (Higueras-Castillo et al., 2019). Price and performance barriers are common for new technologies when compared to market-dominant designs (Adner, 2002). As such, early adopters who are prepared to pay a premium or put up with subpar performance in exchange for the newest technology are the main focus of this research (Lee et al., 2019). But even in cases where there are obvious benefits, it usually takes a while for EVs to become widely adopted (Rogers, 2010). The slow adoption of electric vehicles (EVs) might be ascribed to the gradual diffusion of eco-friendly improvements.

Despite their notable benefits, obstacles still exist in the way of their widespread application. Examining consumers' intentions to convert to electric vehicles is the goal of this study. As to Ajzen's (1991) assertion, intention signifies an individual's readiness to try something new and the level of effort they plan to dedicate to completing a specific task. Many academics have examined the factors that promote and inhibit the use of electric cars (EVs), focusing on consumer characteristics and technology developments (Hjorthol, 2013; Rezvani et al., 2015; Carley et al., 2013). Furthermore, research has investigated how consumers see the adoption of EVs (Bunce et al., 2014; She et al., 2017). According to Bjerkan et al. (2016) and Sierzchula et al. (2014), these elements can be roughly divided into three groups: technological factors, context factors, and customer traits.

1. Technological Factor`s: Technology influences driving distance, charging speed, noise level, acceleration, CO2 emissions, functionality, dependability, and safety (Vassileva & Campillo, 2017; Abotalebi et al., 2019; Rocha et al., 2016; Helveston et al., 2015; Jensen et al., 2013; Krupa et al., 2014; Li et al., 2019; Peters & Dutschke, 2014; Zhang & Tay, 2017; Egbue et al., 2017; Schmalfuß et al., 2017; Burgess et al., 2013).
2. Context Factor`s: According to Higueras-Castillo et al. (2019), Wang et al. (2017), Chu et al. (2019), Dijk et al. (2013), Javid & Nejat (2017), Soltani-Sobh et al. (2016), Coffman et al. (2017), and Egner & Trosvik (2018), they include government subsidies, fuel prices, power prices, and charging infrastructures.
3. Consumer characteristics: (Chen et al., 2020; Mukherjee & Ryan, 2020; Axsen et al., 2018; Barth et al., 2016; Caperello et al., 2013; Jansson et al., 2017; Krupa et al., 2014; Schuitema et al., 2013) These comprise socioeconomic characteristics, lifestyle, social norms, and environmental beliefs.

Although vehicle price and performance attributes are typically prioritized over consumer characteristics, early adopters tend to place greater importance on technical issues rather than financial constraints (Lane & Potter, 2007; Lee et al., 2019). Prior studies have indicated that these characteristics have a significant impact on the uptake of electric vehicles. As an example, She et al. (2017) found that adoption is significantly hampered by financial concerns and technological considerations like safety, dependability, driving range, charging time, and the availability of charging infrastructure.

2.2.1. Technological Factors

Consumers' top issue is a limited driving range (Egbue et al., 2017). The bulk of EVs have smaller ranges, while certain models can travel up to 400 km. The adoption of electric vehicles (EVs) is thought to be significantly hampered by their shorter range when compared to internal combustion vehicles (ICVs), which have an average range of 800 km when powered by gasoline (Kumar & Thakur, 2020; Lim et al., 2015). On the other hand, increased adoption may result from increased range achieved by suitable charging infrastructure (Lim et al., 2015). However, when users get used to it, driving an EV can help them overcome the practical limits of having a short driving range (Franke and Krems, 2013; Jensen et al., 2014; She et al., 2017).

According to Zhu (2016), a key element influencing the uptake of electric cars (EVs) is charging time. According to Moon et al. (2018), the majority of users prefer choices for rapid charging. Internal combustion cars (ICVs) can be refueled in a matter of minutes, whereas electric vehicles (EVs) can take up to eight hours to charge at lower power and at least thirty minutes at a fast charging station (Glerum et al., 2014; Kumar & Thakur, 2020). However, consumers have shown a readiness to adjust to EV charging procedures (Schmalfuß et al., 2017). As a result, in order to raise the intention to buy EVs, it is imperative to shorten the charging time and extend the driving range of EVs (Junquera et al., 2016).

Customers typically find performance characteristics like charging time and range to be unsatisfactory (Chen et al., 2020; Kester et al., 2018). EVs can, however, perform better than ICVs in a number of areas, which can make up for their drawbacks in terms of cost, charging time, and range (Skippon, 2014). According to Zhang et al. (2013), performance features are more likely to be accepted by consumers than environmental or financial considerations. However, environmental advantages and incentives are also thought to be important (Peters & Dutschke, 2014).

Two key differences between EVs and ICVs are their quick acceleration and quiet engines. According to Burgess et al. (2013), respondents had favorable opinions of EVs' acceleration and low noise levels. Increased market share for EVs is a result of their faster low-speed acceleration and lower noise emissions (Skippon, 2014; Rocha et al., 2016).

Customers are particularly concerned about characteristics like safety and dependability (Thananusak et al., 2017; Zhang et al., 2013). Adoption barriers include people's mistrust and concerns about the safety of electric cars (EVs), especially in light of incidents involving batteries (She et al., 2017). Respondents' mistrust of electric vehicles and their worries about safety have been exacerbated by the occurrences of battery fires in specific accidents. Reliability, however, is highlighted as a driving force for EV purchases. This suggests that respondents might be dubious about EVs' safety and hesitant to trust them. Nevertheless, Higueras-Castillo et al. (2019) point out that one of the primary reasons people buy EVs is their reliability. According to Ingeborgrud and Ryghaug (2019), EV owners view their cars as thrilling, safe, and silent technological advancements.

2.2.2. Consumer Buying Behavior

The process of choosing, acquiring, and using products and services to fulfill one's needs and desires is referred to as consumer buying behavior (Armstrong, 1991). It is influenced by various factors, characteristics, and specificities that shape individuals' decision-making processes, shopping habits, purchasing behavior, and brand and retailer preferences. Ultimately, the purchase decision is influenced by a combination of these factors. Initially, consumers identify their desired commodities and then select those that offer the highest utility. They also consider their available budget and assess the prevailing prices of the commodities before making a decision (Armstrong, 1991).

According to Wilkie (1995), consumer behavior includes all of the mental, emotional, and physical processes involved in selecting, purchasing, utilizing, and quitting to use goods and services in order to satisfy one's needs and desires. Products still have crucial core purposes, but they play more roles now than just being useful. Customers consider the extended product (intangible elements like image, consulting, and after-sales service) that offers desired perceived advantages in addition to the core attributes of the product (Arndt et al., 2004; Foret & Prochazka, 2007; Sarvi Hampa, 2007).

Consumer behavior comprises seven key points: (1) it is goal-oriented, driven by the motivation to satisfy specific purposes; (2) it encompasses a range of activities related to selecting, purchasing, consuming, and discontinuing goods; (3It is a procedure that includes actions taken before, during, and after the purchase; (4) it varies in terms of complexity and time required for decision-making;

(5) it involves various roles played by consumers in different situations and purchases; (6) it is influenced by external factors, including culture, social class, family, and reference groups; and (7) it exhibits individual differences due to varying preferences (Stávková et al., 2008).

Understanding consumer behavior is crucial for marketers as it helps identify customers, their needs, and their responses to products. It involves studying consumer characteristics, demographics, and behavioral variables to gain insights into their preferences and purchase patterns (Schiffman et al., 2012). Consumer behavior research enables a better understanding and prediction of purchasing decisions, motives, and frequencyFurthermore, it acknowledges that people frequently buy items not only for their core functions but also for their subjectively perceived values (Stávková et al., 2008).

Research on consumer behavior seeks to understand the decision-making process used by consumers, both on an individual and collective level. It investigates individual consumer traits, including demographics and behavioral variables, to gain insights into people's desires and preferences. By studying consumer behavior, researchers can enhance their understanding and predictive abilities concerning not only what people buy but also why they buy and how frequently they make purchases (Schiffman et al., 2012).

2.2.3. Adoption of Electric Vehicles

Under the previously mentioned circumstances, there are two main categories of vehicle consumers that exhibit a tendency to buy electric vehicles (EVs): private citizens and fleet operators, which are organizations. In most nations, the automobile market is dominated by private persons, however fleet operators make up the largest customer group. As we will discuss later, fleet operators have many appealing attributes from the perspective of EV marketing. Postal agencies, electric utilities, public transportation providers, automobile rental firms, and even the military have all tested EVs in the past in a number of different nations (Knie et al., 1997; Anonymous, 1998a; O'Donnell and Oxfeld, 1998; Schulz, 1998; Morrison, 1999a,b). On the other hand, private citizens' enthusiasm in EVs has been more circumspect. Only about 1% of Americans were expected to contemplate buying an EV in 1990, according to early forecasts (Buist, 1993). Three years hence, 6% of American households would think about buying an electric vehicle (EV), according to Power and Associates (1993). According to Kurani et al. (1994), 16% of California

families surveyed said they would rather own an electric vehicle (EV) than an internal combustion vehicle (ICV). According to Gurling et al. (1998a), the relative cost and performance of EVs in comparison to ICVs impacted the proportion of interested households.

Nearly 30% of households in a large Swedish city contemplated buying an EV over an ICV in a research incorporating attractive EV attributes (Schot et al., 1994; Truffer et al., in press). Even though it's difficult to compare these percentages, it seems like the landscape is changing in favor of electric vehicles. But it's still unclear how EVs will promote themselves to prospective buyers. According to Kurani et al. (1994), the invention of the microwave oven and electric vehicles (EVs) were comparable. Microwave oven adoption was initially low, but it quickly increased as people learned through specialized cooking classes that microwave ovens enhanced conventional ovens rather than replaced them. Microwave ovens and electric vehicles (EVs) are categorized as "high learning products," meaning that in order to fully benefit from them, users must modify their behavior. Even though the two are significantly different from one another, they are similar in this regard (Schot et al., 1994; Truffer et al., in press). Rogers (1995) classified innovations based on five dimensions, which offers a promising framework for EV market segmentation and early adopter identificationConsequently, it is hypothesized that early adopters are probably individuals who find EVs compatible with their important values, think EVs are superior to ICVs, and don't think EVs are complicated or hard to operate.

A thorough marketing strategy for EVs should focus on potential adopters who have positive attitudes and work to positively impact others' perceptions as well as those of these potential adopters. Furthermore, trialability and observability are two essential EV qualities that ought to be actively promoted in marketing initiatives, under Rogers' classification. Some broad features of early adopters found in prior research—such as higher education, a penchant for experimentation, expertise, competence, and a history of using similar products—may also apply in this domain with regard to demographic and psychological qualities. However, the initial adopters of EVs are best characterized in terms of domain or product-specific innovativeness due to the unique mix of high costs and visibility associated with EVs, which classifies them as high-involvement products similar to other autos (Goldsmith and Hofacker, 1991). It is plausible to suppose that the main source of domain-specific innovativeness is a positive view of EVs along the characteristics proposed by Rogers (1995).

The absence of charging infrastructure in Ethiopia is a significant contributing element to our visit. Although there are some public charging stations, they are few and frequently found in populated places. Furthermore, a lot of Ethiopians don't have easy access to energy, which makes it challenging to charge EVs at home.

Another factor is the high upfront cost of EVs, which can be a significant barrier for many potential buyers. While the cost of EVs has been decreasing in recent years, they are still more expensive than traditional gasoline-powered vehicles, which makes them less affordable for many Ethiopians.

Additionally, Ethiopians are not well-informed about electric vehicles (EVs), which can make it challenging for prospective purchasers to comprehend the advantages of EVs and how they operate. This ignorance may also breed doubt or mistrust for emerging technology.

Given these challenges, it is important to understand the determinants of customer buying behavior towards to EVs in Ethiopia and to develop strategies for promoting their uptake.

The absence of legislative incentives and regulatory frameworks to encourage the adoption of EVs is one factor contributing to Ethiopia's sluggish EV adoption rate. There aren't any tax breaks, rebates, or other financial incentives available right now for EV purchases in Ethiopia, unlike in several other nations. Additionally, there are no laws limiting the emissions of conventional gasoline-powered cars, which lessens the urgency for people to switch to greener and more efficient electric vehicles.

Another challenge is the limited availability of EV models in Ethiopia. While some international car manufacturers have started to introduce EV models in Ethiopia, the selection is still limited. This means that potential buyers may not be able to find the type of EV that suits their needs, which can be a major barrier to adoption.

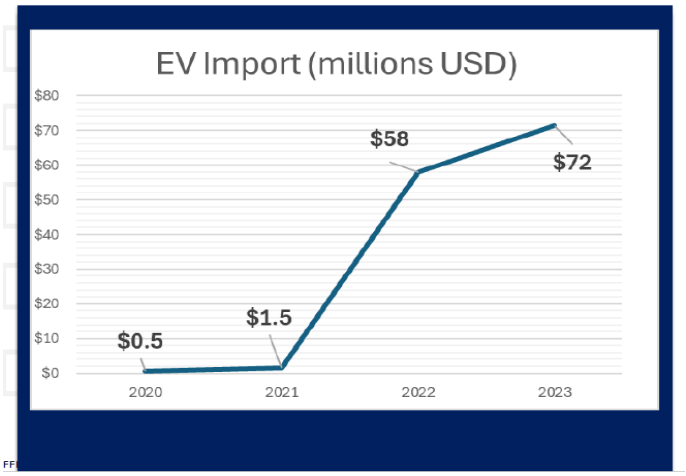

Figure 1. Economic growth of electric vehicle worldwide (2020-2023)

Moreover, electricity supply in Ethiopia can be erratic and unreliable, particularly in rural areas. This can make it difficult to charge EVs on a regular basis, which can limit the practicality of owning an EV for many Ethiopians.

In addition, there may be a lack of familiarity or trust in new technologies, which can make it more difficult to convince potential buyers to adopt EVs.

Despite these challenges, there are also some potential opportunities for promoting the adoption of EVs in Ethiopia. For example, Ethiopia has abundant renewable energy resources, including hydropower and geothermal energy, which can be harnessed to power EVs. Additionally, the Ethiopian government has set ambitious targets to reduce greenhouse gas emissions and promote sustainable development, which could provide a strong policy framework for promoting the adoption of EVs.

Finally, cultural considerations might also contribute to Ethiopia's sluggish EV adoption. For instance, a lot of Ethiopians prefer SUVs or bigger cars, which might not be offered in EV variants.

EV Model	BEV ID.6	ICE Rav4 (2500cc)
Approximate MRSP	$35,000	$38,000
Estimated Freight Cost	$4,000	$4,000
Total USD Expense for Vehicle	$39,000	$42,000
Custom Duty	$5,850	$10,500
Excise Tax (Based on Engine cc)	$0	$42,000
Surtax	$0	$4,200
VAT	$0	$6,300
Withholding Tax	$1,170	$1,260
Social Levy Tax	$1,170	$1,260
Total Import Tax	$8,190	$65,520
Total Vehicle Import Cost (USD)	$47,190	$107,520

Figure 2. Ownership cost comparison between EV(ID6) and ICE(Rav4)

As it shown on the above, the total cost between EV and ICE between the two model which have approximately equal FOB price have a big difference on the final price when it reached to the Ethiopia. The total cost of Electric car is 48.3% less than the ICE which make EV is cheaper but since the truth is these customers prefer ICE. There are several reasons raised by the customer not to choose EV at this time even if there is high price difference. The aim of this research is to investigate those factor and forward the possible recommendations to solve the problem.

2.2.4 The Electric Vehicle

The globe witnessed the development of the first electric vehicle (EV) in Scotland in 1842. The energy source for this innovative car was a rechargeable lead battery. The early 1900s marked the height of EV popularity. About 40% of the 4,000 autos produced in the US in 1900 were powered by steam, 38% by electricity, and the remainder by internal combustion engines (ICVs). But while oil continued to be cheap and plentiful, battery research stagnated, and ICVs eventually took over the car sector.

Renewed interest in electric vehicles (EVs) was ignited in the 1950s by the development of semiconductors and improvements in motors and controls. Concurrently, the 1966 auto shows featured a modified ICV running on silver-zinc batteries, and small research was conducted in response to the advent of vehicle pollution laws, which were first implemented in California with the passage of the Air Quality Act of 1967. Nevertheless, there was little success in putting the 1967 Air Quality Act into practice. In order to minimize automobile emissions, the US Clean Air Act Amendment of 1970 chose a technology-forcing strategy that prioritized environmental and public health protection over technological viability. Investment in electric vehicles was further boosted by the oil crises of the 1970s and 1980s. But in reaction to California's Zero Emission

Mandate in the 1990s, large investments in EVs started. The law compelled big automakers that sold more than 35,000 cars a year in California to increase the proportion of zero-emission vehicles in their lineup. According to the regulations, 2% of sales were to be zero-emission cars by 2003; by 2001, that percentage rose to 5%, and by 2003, it was 10%.

Air quality is the main driver of the present legislation that support electric vehicles (EVs), even in cases where coal-fired power plants are the source of electricity (Wang et al., 1990). EVs do, however, have other benefits that are sometimes disregarded. Reduced oil consumption, less reliance on nations that export oil, and the possibility of lowering greenhouse gas emissions are a few of these (DeLuchi, 1993). These are especially true when using natural gas, fuel cells, or renewable energy sources.

Although these advantages, the costly and inadequately designed battery technology that restricts the driving range of EVs is a significant barrier to their wider adoption (Sperling, 1995). Despite being less expensive, lead-acid batteries only last for around two years and 20,000 miles, which is not long enough to operate a full-size car over long distances or at high speeds. The present state of nickel-cadmium, nickel-iron, and sodium-sulfur batteries is less encouraging because of their high cost, high working temperature, and potential for corrosive problems. Because they are non-toxic and have a longer lifespan, nickel-metal hydride and lithium-based batteries have greater potential for the twenty-first century. Fuel cell technology is an additional viable choice. It produces energy and water from hydrogen and oxygen without producing any pollutants or greenhouse gases. Fuel cells provide continuous onboard electricity production, a driving range comparable to ICVs, and require minimal maintenance. However, fuel cells remain expensive, and further development of reformer technology is needed (DaimlerChrysler, 1999).

Since the current objective is to develop technologies that directly compete with ICVs, future strategies for EVs are cause for concern. It's still unclear, though, if people would be ready to pay for such improvements or if they would rather own an EV that costs less and has a shorter driving range than an ICV.

2.2.5 Consumer Buying Behavior

Purchasing behavior by consumers is the act of selecting, obtaining, and utilizing products and services to satisfy one's needs. It entails a number of procedures and elements that affect a person's

decision-making process, shopping habits, buying behavior, favored brands, and store preferences. Every one of these elements influences the ultimate purchasing choice.

Initially, consumers explore and identify the products they desire. Then, they narrow down their choices to those that offer the highest utility or satisfaction. Once the desired products are selected, consumers assess their available budget and determine how much they can afford to spend. Finally, they evaluate the prices of the available products and make a decision regarding which ones to purchase.

According to Armstrong (1991), the study of consumer behavior focuses on the roles individuals play as users, payers, and buyers in the purchasing process. Despite the expertise in the field, consumer behavior is known to be challenging to predict. Consumer behavior is defined by Wilkie (1995) as the mental, emotional, and physical processes involved in choosing, acquiring, utilizing, and discarding products and services to satisfy needs and wants.

Although products' primary purposes are still significant, their modern role goes beyond mere utility (Arndt et al., 2004). According to Foret and Prochazka (2007), consumers frequently assess products not just on their primary features but also on the extended product, which includes intangible elements like image, consultation, and after-sales service, as well as the real product, which has particular qualities (Sarvi Hampa, 2007).

Although the definitions of consumer behavior may appear straightforward, they encompass seven key points. Firstly, consumer behavior is driven by motivation to achieve specific goals. Behavior serves as a means to satisfy needs. Secondly, consumer behavior encompasses various activities, as highlighted in the proposed definitions Thirdly, there are several stages to the process of consumer behavior, including behaviors that occur before, during, and after a purchase. Fourth, there are differences in the duration and complexity of customer behavior. The number of tasks involved and the decision's difficulty establish a decision's complexity. Since complexity and time are frequently linked, taking longer to make decisions that are more complicated will usually take longer. Lastly, consumer behavior includes different roles that individuals assume throughout the purchasing processA customer can combine these responsibilities in any given scenario. Additionally, multiple people may be involved in one or more responsibilities for any one purchase. (6) External variables have an impact on consumer behavior: The concept of "influential" has been highlighted since it is crucial to comprehending consumer behavior. In

essence, this idea shows how adaptive consumer behavior is. Customers are used to their surroundings and are heavily impacted by outside factors when making decisions. These variables include, but are not limited to, social class, family, culture, and peer groups. (7) Distinct individuals exhibit varying behaviors: Individual differences are the reason why different people reveal diverse consumer behavior based on their preferences. Marketers become segmentation specialists for various individuals. In summary, contemporary marketers first seek to comprehend customers and their reactions before examining the fundamental elements of their behavior. It is possible to learn more about the characteristics of clients, their needs, and how they use and respond to a product by seeing how they behave. Through the use of consumer behavior surveys, the needs and desires of the client are thoroughly examined. Consumer behavior research currently operates under the core premise that people buy items more often for their subjectively perceived values than for their intended uses (Stávková, et al., 2008 The goal of consumer behavior research is to comprehend how consumers make decisions on an individual and group level. It looks at certain consumer traits including behavioral traits and demographics to try and figure out what people desire. Research on consumer behavior facilitates better knowledge and forecasts about the topic of purchases as well as the motivations behind and frequency of purchases (Schiffman, et al., 2012).

2.2.6 Consumer Behavior Models

Three thorough models of consumer decision-making were put forth by Howard and Sheth (1969), Engel et al. (1968), and Nicosia (1966). These models seek to comprehend the mental journey people take from the moment they become aware of a material need until they evaluate the whole impact of buying and using a thing..

According to Engel et al. (1986), consumers who are very involved with a product solve problems over a prolonged period of time. This procedure entails identifying the issue, gathering data, assessing alternatives, making a purchase, and following up with related tasks. In this process, active information processing—which includes exposure, attention, comprehension, yielding/acceptance, and retention—is essential. Festinger's 1957 theory of cognitive dissonance influences the outcome of this information process-aided decision sequence, which might have a satisfying or dissonant effect on future purchasing decisions.

Engel and Blackwell (1982) pointed out that environmental factors can potentially impact the decision-making process by affecting customer motivation and intention. Unpredictable circumstances, including the unavailability of a preferred brand or a lack of funding, may cause changes to the final decision made by a customer.

According to these models, the sequence of attitude, intention, and purchase is formed by intrapersonal psychological states and events that precede the observable consumer action. These models also take into account the fact that customers are logical problem solvers who actively seek out and use information while making decisions.

Academic research has validated several theories on consumer behavior, including the ones mentioned above. The theories such as:

A. Nicosia model (Nicosia, 1966), B. Howard Sheth model (Howard, 1969) ,C. Engel Kollat Blackwell model (Kollat, et al., 1970) , D. Psychoanalytical model (Kassarjian, 1971) ,E. Learning model (Moschis, 1978) ,F. Sheth Newman Gross model (Sheth, et al., 1991) is very much reviewed and model extensions" based on the theories are undergoing. ,G. Anderson model (Anderson & Sullivan, 1993) 8. Black box model (Ben-Akiva, et al., 1999) H. Sociological model (Spaargaren, 2003).

2.2.7 Consumer Decision Behavioral Models

The Nicosia model, Howard Seth model, Sheth family decision making, Bettman information processing model, and Sethnew-Gross model are examples of comprehensive models of consumer behavior.

A. Nicosia Model

The relationship between a business and its potential clients is at the heart of the Nicosia model. It suggests a dynamic framework in which customers influence the business by their interactions and behaviors, and the company attempts to influence the customers (Nicosia, 1966).

B. Howard – Sheth Model

Three degrees of learning are distinguished under the model: routinized response behavior, limited issue solving, and extended problem solving. When consumers actively seek out information about

alternative brands due to inadequate understanding and opinions about companies, this is known as extensive problem solving (EPS). When consumers have preexisting information and beliefs about brands, it might be difficult for them to adequately assess differences between brands, a phenomenon known as limited problem solving (LPS). Routineized response behavior (RRS) occurs when consumers have preconceived notions and established knowledge about a brand and its competitors, which makes them more likely to buy that particular brand (Howard, 1969).

C. Engel Kollat Blackwell Model

The model breaks down consumer behavior into four categories.

Stage of the decision-making process; 2. Stage of information input; 3. Stage of information processing; and 4. Stage of variables affecting the decision-making process

A number of factors, including social, cultural, economic, personal, and psychological ones, affect what consumers choose to buy. The decision-making process's phases—problem identification, search, alternative assessment, purchase, and results—are identified by the model. The model's information processing part incorporates data from marketing and non-marketing sources, with a primary focus on the problem recognition stage. The consumer responds to this information, focusing, understanding, perceiving, yielding/accepting, and retaining information that is not controlled by marketers. The model also highlights how certain factors, such as personal traits like motivations, values, lifestyle, and personality, as well as social elements like family, culture, and peer groups, and situational factors like the consumer's financial situation, all have an impact on the decision-making process (Kollat, et al., 1970).

D. Sheth-family decision making model

The Sheth family decision-making model states that middle-class families, especially those with recently married couples, strong family ties, and fewer defined roles, have a tendency to participate in joint decision-making. The model also shows that when there is enough time to complete the decision-making process, when there is a high perceived risk or uncertainty connected with the product, and when the purchase decision is considered significant, collaborative decision-making is more likely (Sheth, et al., 1991).

E. Bettman’s information processing model of consumer choice

The concept of consumer information processing is introduced by this approach. It draws attention to how consumers' ability to comprehend information is restricted and how they often avoid doing in-depth analyses of the options that are offered. Rather, the model proposes that customers generally depend on basic decision-making techniques or heuristics.These strategies allow consumers to make choices without engaging in a comprehensive analysis of all available alternatives. The Bettman system, as described in the model, can be valuable for marketing managers as it provides new insights into consumer behavior, assisting them in designing effective marketing strategies.

F. Stimulus-Response Model

The buyer's "Black Box" is filled with marketing and other stimuli that cause the buyer to make particular decisions or make purchases. Knowing what's inside the buyer's "Black Box" and how stimuli become responses is critical knowledge for marketers. The relationship between inputs, consumer traits, decision-making processes, and consumer responses is depicted by the black box model. One might classify stimuli as intrapersonal (occurring within persons) or interpersonal (occurring between people). The behaviorist theory of the black box, which emphasizes the connection between stimuli and consumer responses rather than the interior workings of the consumer, has an impact on the black box model. While environmental stimuli are a result of social forces impacted by a society's economic, political, and cultural conditions, marketing stimuli are purposefully produced by businesses. The traits of the buyer and the decision-making process make up the buyer's "black box," which in the end dictates the buyer's reaction (Ben-Akiva, et al., 1999).

Table 1. The Black box model of consumer behavior adopted and own elaborated based on Marketing by W.Keegan, S.Motiarty, T.Duncan, 1992, Englewwod Cliffs, NJ, Prentice-Hall.

Environmental factor`s		**Buyers Black Box**		**Buyers Response model**
Marketing Stimuli model	**Environmental Stimuli model**	**Buyer Characteristics model**	**Decision Process model**	
Product Promotion Place Price	Economic Natural Political Technology Demographics Cultural	Knowledge Lifestyle Attitude Motivation Personality Perception	1.Problem recognition 2.Information search 3.Alternative evaluation 4.Purchase 5.decision Post-purchase	Dealer choice Product choice Time Brand choice Amount

According to the idea, marketing and other stimuli get inside the customer's "black box" and cause particular reactions. The goal of marketing management is to open up the "black box," or interior workings of the customer's thinking. The traits of the buyer have a big impact on how they interpret the stimuli, but the decision-making process dictates the precise purchasing behavior that is engaged in. The first step towards understanding consumer behavior is to focus on the elements within the black box model that determine the buyer's attributes.

2.2.8 Factors Influencing Consumer Buying Behavior

Four major aspects are at the center of the marketing literature's examination of the variables influencing consumer behavior, according to Philip et al. (2006) and Schiffman & Kanuk (2006). These variables, which are covered in great detail in marketing textbooks, include cultural, sociological, psychological, and personal elements. A buyer's decisions and purchase habits are influenced by a multitude of factors. These factors are categorized and arranged differently in the literature.

The consumer behavior or buyer behaviors is influenced by several factors or forces. They are:

1. Internal or Psychological factors

   Consumer behavior factors are the internal or psychological influences that affect an individual's buying decisions. These factors include motivations, perceptions, beliefs, attitudes, personality traits, lifestyle, economic situation, occupation, age and family life

cycle (Wu et al., 2023). These elements are very important in determining a person's tastes, decisions, and shopping habits. One of the main psychological elements influencing customer purchasing behavior is motivation. Motivation refers to the internal drive or desire that compels individuals to take action. This could be influenced by various factors such as personal needs, wants, aspirations, and values. Perception is another important psychological factor that affects consumer buying behavior. Perception refers to how individuals interpret and make sense of the information they receive from their environment. Attitudes and beliefs also have a big influence on what customers buy. Beliefs are people's personal judgments or views toward a certain brand, product, or business..(Cetină et al., 2012) Attitudes, on the other hand, are the overall evaluations or feelings that individuals have towards a particular product, brand, or company (Wu et al., 2023). These factors can greatly influence an individual's decision to purchase a product or service.

2. Social factors

Sirgy (1982) asserts that socioeconomic class demonstrates a number of traits. First characteristics that set members of a social class apart from one another are shared behaviors, educational attainment, attitudes, values, and communication styles. According to Alden et al. (1999), social classes are influenced by a variety of variables, including living area, wealth, values, activities, and education, rather than just one. As Kacen and Lee (2002) point out, a person's status is established in the framework of their society. Furthermore, social groups are made up of individuals despite in the absence of official indications of shared lifestyles. According to Peter et al. (2005), social classes are made up of people who have comparable beliefs, passions, and ways of behaving, which results in a group that is largely uniform and continuous. These socioeconomic classes express their tastes through a variety of mediums, such as apparel, food, housewares, entertainment, video games, cars, and particular goods and labels.

Marketing professionals frequently concentrate their efforts on particular socioeconomic classes since they understand that these groups have diverse media preferences. For example, whereas lower-class consumers are more likely to watch television, upper-class consumers typically prefer books and publications. The tastes of viewers for different television shows' content also differ; news and dramas are preferred by upper-class

viewers, while sports and movies are preferred by lower-class viewers. Moreover, linguistic distinctions occur between social classes, therefore advertising must take into consideration the language used within a given social class. Because of this, marketers must adjust their communication strategies and mediums to fit the socioeconomic class they are trying to reach.

The purpose of identifying these elements is to comprehend how they affect customer behavior and to help marketers choose the best consumer targeting tactics. As a result, these variables are applied to target particular customer groups and to segment the market.

3. Cultural factors

Culture is the complex web of roles, ideas, actions, values, traditions, practices, and norms that make up human societies, according to Kacen and Lee (2002). Comprehending culture is essential to understanding consumer behavior and merits investigation. A society's shared values, conventions, standards, and shared goals are embodied in its culture. According to Craig and Douglas (2006), an individual's preferences and decisions are primarily influenced by their culture. It includes a society's beliefs, customs, language, resources, attitudes, and feelings. Beliefs play a significant role in shaping culture, as they can exhibit similarities among people within a community.

Another crucial concept in marketing management is subculture, as emphasized by Craig and Douglas (2006). Subcultures are formed by smaller groups of individuals with similar values and behaviors within a broader culture. Factors such as geographical regions and religions contribute to the formation of subcultures. It is important to remember that people who live near to one another could have diverse tastes. Individuals belonging to diverse subcultures exhibit unique values, attitudes, and social structures when juxtaposed with those of other subcultures. Subcultural segmentation is a significant variable in marketing activities because of these disparities. It is important to comprehend the attributes of subcultures in order to proficiently formulate the marketing mix, encompassing price tactics, brand identity, promotional initiatives, and product positioning.

4. Economic factors

Economic factors, as highlighted by Brown et al. (1972), play a important role in shaping consumer buying behavior. The “law of supply and demand” illustrates the relationship between demand, supply, and prices. When the demand increases, prices tend to rise as

well. This dynamic attracts more suppliers, leading to price stabilization and maintaining demand at healthy levels. The interplay of supply and demand directly impacts consumer behavior, as high prices can dampen consumer demand for a product. Fluctuations in interest rates also influence consumer spending patterns. Higher interest rates discourage consumers from borrowing money for major purchases like houses or cars. A consumer's purchasing power is fundamentally determined by interest rates. For example, if someone purchases a property with an adjustable-rate mortgage, rising interest rates could make the home unaffordable. Inflation, characterized by rising prices, has a direct impact on a consumer's affordability.

As inflation escalates, the value of the dollar decreases, decreasing the buying power of the customer. Consumer behavior is especially impacted by inflation when salaries are not keeping up with price increases. Additionally, unemployment has a big impact on consumer behavior. When people don't have a consistent source of income, they have less purchasing power. Stern (2000) asserts that a country's economy as a whole, which is impacted by a number of economic issues, has a significant effect on consumer behavior. A robust economy enhances consumer purchasing power and stimulates economic activity. Conversely, a struggling economy exerts the opposite effect. Economic challenges impact employment rates, interest rates, and consumer confidence.

5. Personal factors.

Davis (1976) summarizes three key aspects regarding marital roles and their influence on consumer behavior. Firstly, the impact of marital roles varies depending on the product category. Secondly, within a specific product category, the level of marital role involvement varies across different decisions and decision stages. Finally, families differ in how much the spouse plays a part in purchasing decisions.

Aaker and Keller (1990) and Spence (1984) emphasize that various personal factors can influence the customer's buying process. Gender is a commonly used factor for market segmentation. Scholars have studied the impact of gender on consumer buying behavior, including its role the brand evaluation, gender identity, product positioning, and the differences in perspectives between male and female consumers in evaluating products, conducting information searches, decision-making processes, and attitudes towards marketing strategies (Jaffe, 1991; Garst & Bodenhausen, 1997).

Additionally, as Lu and Wang (2010) point out, marketers focus on the marital status of their customers. Recognizing the frequently intricate behavior of consumers is a critical task in the marketing domain. For marketers, understanding why consumers make the decisions they do—or don't—is essential. Marketers may better grasp what matters to consumers and the key factors influencing their decision-making processes by having a thorough understanding of purchasing behavior.

1. Age and Life cycle Stage factor

   According to Lansing and Kish (1957), marketers frequently divide their target market into segments according to the stage at which their customers are in the life cycle. As people move through different phases of life, their needs and preferences also change. The impact of age on consumer behavior has been highlighted by many researchers. This influence includes how consumers gather information, the sources of information that different age groups use, how they make decisions, what brands they prefer, how they feel about advertising, how they use media, how they adopt new technologies, and how they buy goods and services.

   According to Wells and Gubar (1966), the life cycle is a progressive sequence of phases in which consumer attitudes and behavioral inclinations change as a result of growing social status, income, experience, and maturity. Park and Kim (2003) have highlighted how the human life cycle can have a considerable impact on consumer behavior, just like socioeconomic class does.

2. Occupation and Income factor

   In contemporary times, individuals exhibit a heightened concern for their image and social standing, which directly stems from their level of material prosperity, as stated by Lancaster (1966). One's profession or occupation also influences the types of products they consume. Various symbols, such as clothing, accessories, and possessions, are used to project an individual's status in society.

3. Life Style factor

   Consumers can be classified based on combinations of dimensions, as explained by Plummer (1974). Lifestyle analysis, unlike personality typologies, has proven to be a valuable approach for segmenting and targeting consumers based on their lifestyle

classifications. Our personalities and self-concepts are reflected in our lifestyles, just as they are with any consumer, as highlighted by Kahle (1986). Understanding the components of a Life style is crucial. It encompasses a individual way of living`s, characterized by their activities, interests, and opinions.

Earl (1986) mentioned the use of a technique known as psychographics to gauge a consumer's lifestyle. An analytical method called psychographics is used to evaluate the lives of consumers by looking at their attitudes, interests, and activities.

4. Personality factors Kassarjian (1971) defined personality as the whole collection of persistent internal psychological characteristics that make each person distinctive. These qualities include a wide range of attributes, including self-assurance, authority, independence, sociability, defensiveness, flexibility, and emotional stability.
5. Social class An overview of the affective and cognitive factors that influence purchasing decisions across various socioeconomic strata is given by Shimp (1981). According to Williams (2002), the socioeconomic class a person belongs to influences what they look up online. Income has an effect on consumer behavior when it comes to the variety, cost, and number of goods bought. In the context of the family, occupation is frequently regarded as a more accurate indicator of social class, and people in higher-status occupations typically display distinct traits, motivations, and values from those in lower positions. Because education affects decision-making and consumer information search, it is also linked to occupation and social status. Consequently, it is presumed that an individual's educational attainment affects their criterion of evaluation while making a purchase.
6. Motives

   Iso-Ahola (1982) defined motivation as an activated internal state that propels, directs, and steers actions. Scholars and marketers pay close attention to the want stage of this process since it is the route towards a particular conduct intended to satisfy a need or reap advantages. Owing to an individual's distinct experiences, socio-cultural background, and personality, there exist various avenues that one may opt to follow in order to achieve desired results. Thus, because motivation presents chances to satisfy demands and reap rewards through acquisition, it represents an innate drive to follow a specific course.

A process consisting of five consecutive steps can be used to understand motivation, according to Schiffman et al. (2012): a) need recognition, b) tension reduction, c) drive state, d) want, and e) goal-directed behavior.

7. Attitude

Research by Kokkinaki and Lunt (1999) has shown that attitudes developed in high involvement contexts are easier to obtain than those developed in low involvement contexts. According to Bagozzi (1994), the term "attitude" is commonly used in practice to refer to a wide range of ideas, including preferences, sentiments, emotions, beliefs, expectations, judgments, evaluations, values, principles, opinions, and intentions. As judgments based on evaluation, attitudes are influenced by the facts that come to mind in a particular circumstance (Kinnear & Taylor, 1996). There is some empirical evidence to support the relationship between attitudes and conduct, especially when analyzing a large group of buyers as there are fewer variables influencing or mediating the relationship between attitudes and behavior, resulting in predictions that are reasonably accurate (Kinnear & Taylor, 1996).

Because people frequently have little information to base their judgments on, attitudes are perceptual in nature (Ajzen, 2001). Although attitudes are usually developed naturally and without conscious thought, they can be consciously formed in response to certain cues (Ajzen, 2001). According to the tripartite model, which is frequently used to explain attitudes, attitudes are made up of three different parts: cognitive (beliefs), affective (feelings, emotions, and moods), and conative (behavioral purpose) (Blackwell et al., 2001). When there is less time between measuring an individual's attitude and engaging in the behavior, there is probably a larger association between the two. But people can also adopt attitudes that are congruent with their behavior, whereby attitudes are a reflection of behavior (Blackwell et al., 2001).

According to Bohner & Wanke (2002) and Malhotra (2005), attitudes might differ in terms of their valence (positive, negative, or neutral), intensity, resistance to change, and degree of confidence or conviction. Although attitudes are not always predetermined, they are usually stable and long-lasting because of the cognitive aspect and people's ease of access to their own views, which are shaped by both environmental and personal circumstances (Foxall & Yani-de-Soriano, 2005).

Since attitudes shape behavior and can be managed to affect behavior, it is important to understand and measure attitudes (Malhotra, 2005). Politicians want to understand and control attitudes to affect voting behavior, whereas marketers try to understand and influence attitudes to persuade customers to buy particular goods and services (Malhotra, 2005). Though attitudes can be used as predictors of conduct, the relationship between attitudes and behavior is complex and has multiple facets (Kotler, 2006). For example, a positive perception of a product may exist prior to its acquisition (Kotler, 2006).

2.2.9 Types of Consumer Behavior

- Programed behavior/routine response- Low involvement purchases are those that are made on a regular basis and involve little searching or decision-making. Frequently, these purchases are made virtually instinctively. These products include, for instance, milk, soft drinks, and snack meals.
- Limited Decision Making: Occasionally purchasing a product. A reasonable amount of time is needed for information gathering when you need to learn about a new brand inside a well-known product category. One instance of this would be when you are shopping for clothing and are familiar with the product category but not the particular brand.
- Comprehensive Choice Buying complex high involvement products means purchasing new, pricey, and little used items that carry a significant level of performance, financial, or psychological risk. Automobiles, houses, computers, and schooling are a few examples of these purchases. It takes a lot of effort to find information and make decisions while making these purchases. Usually, people look for information from a variety of sources, including businesses, friends, family, and store employees. This kind of transaction requires completing each of the six steps in the purchasing process.
- Buying on impulse (impulse buying)without careful consideration. There are variations in the purchasing behavior linked to a given product across different situations. Consumer behavior is subject to change, and a product may move from one category to another.

Table 2. Comparison between Types of Behavior

	Routine response behaviors	**Limited decisions making**	**Extended decisions making**
Cost of product	Low	Low to moderate	High
Involvement level	Low	Low	High
Time to be spent	Short	Short to medium	Long
Searching effort	Little	Little to moderate	Extensive

2.3 The Buying Process

The popular five-stage buying decision process model is a useful resource for marketers that want to improve their comprehension of consumers' behavior.

A. Need recognition

The first step in the buying process is the identification of a need, sometimes referred to as problem recognition, which happens when a buyer notices a difference between their desired and current states. This need may be brought on by internal variables like thirst or hunger, or it may be brought on externally by things like walking past a McDonald's restaurant, which brings on cravings. The difference between desired and actual conditions is not the only element that affects the ability to identify requirements. Observable impacts include age, gender, marital status, household size, education level, race, and income. Inferred variables also impact need recognition; these are shaped by psychological considerations. Motivation is one of these psychological components that underpins consumer behavior.

Psychologists differ in how they categorize the requirements of consumers according to their motivations. They do, however, typically distinguish between two categories of motivating demands: psychological needs brought on by social surroundings and physiological needs (such as food and shelter). The phases of the buying process that follow the need recognition phase are influenced by perception, or how consumers view themselves and their environment. The manner in which needs are recognized can change based on the demands and perceptions of the consumer. Customers may choose to swap out a product that now meets their needs for a different one in addition to buying something brand-new or replacing a broken or out-of-date item. We call this kind of conduct diversity seeking.

Increased purchase frequency typically encourage repurchase behavior as opposed to variety seeking. This realization gives e-marketers a reason to reduce the bar for online purchases as much as they can. Variety seeking is the term used to describe this habit.

B. Information search

The next step in the purchasing process is information search, where buyers use a variety of platforms to learn more about products that might meet their previously stated requirements. The notion of the awareness set was developed by Narayana and Markin (1975), who also distinguished three subsets within it. The products in the evoked set are ones that the consumer thinks highly of and is inclined to consider buying. The inactive set is made up of goods about which customers feel neither favorably nor unfavorably, frequently as a result of ignorance or unfamiliarity. Products that consumers have a bad view of and will not consider buying are included in the incompetent set.

According to Beatty and Smith (1987), although their efficiency might not match that of specialists, customers with intermediate understanding of the desired product typically hunt for information the most. Urbany et al. (1989) divided uncertainty into two categories: choice uncertainty (uncertainty about which alternative to pick) and knowledge uncertainty (uncertainty about information regarding alternatives). According to their research, when there is option confusion, people tend to search more because they don't have any trouble understanding the findings. However, it seems that knowledge uncertainty limits the scope of the search.

A comparable method that classifies brands as familiar or unknown within a product class is presented by Peter et al. (1996). While well-known brands are recalled from memory (evoked set) and are taken into consideration, unfamiliar brands may find their way into the choice set via accident or deliberate search. Certain well-known brands may have been well-known to the consumer in the past but are now forgotten. Choice sets are more likely to include well-liked brands and those thought to be more representative of the product class.

To create these sets, customers can search for information using a variety of tools available in the online world. Numerous businesses have enlisted recommendation agents to help customers filter options according to information provided, thus cutting down on search time. Rowley (2000) distinguished between two types of internet search strategies:

purposeful and broad browsing. While consumers use general browsing to keep up with product offerings, purposeful browsing happens when they have specific needs for the desired goods. In circumstances where the search purpose is unclear, searching requires a significant cognitive load, or the system interface promotes browsing, browsing is preferred over search engines.

Two arousal levels are distinguished by Kotler (2006) during the information search phase. Advertisements and conversations introduce people to several products in the milder condition of heightened attentiveness. When consumers are actively searching for information, they actively participate in conversations and look for details about different models and brands. Kotler also describes four channels via which consumers learn about goods and services: commercial (salespeople and advertisements), public (mass media and consumer rating agencies), personal (friends and family), and experimental (looking at and using the product itself). The main sources of information are commercial ones.

Only a small percentage of the enormous range of potential goods and brands that could meet a customer's wants will catch their eye. Kotler (2006) outlines four sets of options from which the client may ultimately choose a purchase; the entire set includes all brands that the buyer may be interested in.

C. Evaluation of alternatives

Customers usually set criteria or minimum acceptable standards for the goods that they put in their choice set—the collection of options they weigh before making a final purchase. Huber and Klein (1991) distinguished these cut-offs by two features. First off, compared to circumstances when reliability is low, the cut-offs for an attribute are stricter when it has a high level of reliability (based on the customer's assessment of the information source). Second, the cut-offs for variables that have a positive correlation (such cheap rent and excellent apartment quality) are higher than they would be if the correlation was equal or negative in magnitude. But these deadlines could differ for transactions made online and offline, especially when it comes to price (Urban et al., 1996).

Customers gather product information when they reduce their alternatives to the decision set, compare, and assess the products. Customers allocate their time, mental energy, and other resources properly since they have limited resources. Their objective is to get the most out of the time they spend learning about the product, and they can accomplish this

by using a variety of tools, including computers (Bhatnagar & Ghose, 2004). It's interesting to note that when comparing options online, price isn't always a decisive element. This can be the case because customers ignore the price tag since they believe that prices on the internet are usually comparable.

D. Purchase decision

The consumer has placed the goods in their choice set in a specific order after finishing the evaluation stage, but this does not always mean that the item with the highest ranking will be selected. Between the stages of evaluation and buying decision, there are two intervening elements. First of all, even if a consumer had planned to buy a different brand, external factors like peer pressure or the influence of closest friends can change their preference rating for a particular brand. Second, unforeseen circumstances could influence the choice to buy. For example, the cost of the item might have grown unexpectedly, or the need for another purchase might grow. The impact of others is lessened at the point of purchase when buying online, when the setting is usually more privateEven when a customer has chosen the exact goods to buy, there are still a number of additional selections to be made, such as the price range, point of sale, volume of the purchase, time of purchase, and payment method.

There are circumstances in which none of the steps mentioned above apply, despite the theories that regard need recognition, information search, and evaluation as essential components of the purchasing decision process. We call this phenomenon impulsive buying. When a buyer makes a purchase purely out of emotion and instinct, it's known as impulsive buying. According to Baumeister, there are some truly irresistible impulses—mostly physiological in nature—that might not always result in a purchase. The author goes on to list three traits that support consumer self-control. Inappropriate shopping behavior can arise when any of these traits are lacking (Sojka & Giese, 2003).

The first trait has to do with the expectations and objectives people place on themselves. Customers are less likely to act impulsively if they are well-informed about what they want and have set clear goals and conventions. Additionally, this lessens sensitivity to marketers and salesmen. Observation is the second quality. Individuals who keep a close eye on their relevant conduct are less likely to lose control of themselves. The ability of the consumer to adapt is the third and most important trait. There needs to be an internal willingness on

the part of the customer to alter and satiate their impulsive impulses, even in the event that the first two factors fail.

E. Post-purchase behavior

The purchase process doesn't end with the transaction; therefore, retailers and marketers need to know how customers behave after making a purchase in order to promote repeat business. Post-purchase actions and post-purchase satisfaction are the two categories into which post-purchase behavior may be divided. Evidence is shown by Mittal and Kamakura that, even in cases where customers are not happy with their purchases, different types of customers have distinct thresholds for store loyalty. Oliver (1999) explores the notions of contentment (post-purchase satisfaction) and loyalty (post-purchase activity). Generally speaking, satisfied consumers are also loyal customers, however according to Oliver (1999), satisfaction does not always equate to loyalty. Other consumer research studies, like Johnson and Auh's (1998), stress that loyalty is a direct result of satisfaction. The importance of contentment holds true in both virtual and physical spaces. Hellier et al. (2003) put up a model that looks at these elements and offers some theories. Their research yielded the following conclusions: brand preference and its strength positively affect repurchase intentions; loyalty positively influences brand preference; and satisfaction positively influences loyalty. The findings of Hellier et al. (2003) can be regarded as legitimate if we accept Evanschitzky and Wunderlich's (2006) assertions regarding the basic significance of satisfaction and its consequences.

Conceptual framework

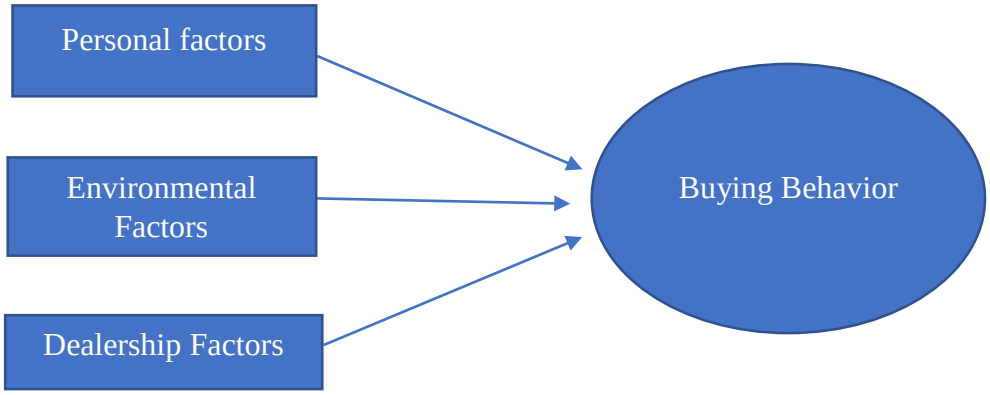

Figure 3. conceptual framework

2.4 Hypothesis

H1. Personal factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia

H2. Environmental Factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia

H3. Dealership factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia.

2.5 Key Terminologies

By carefully analyzing the source studies, data, and information, researchers can eliminate their subjective biases in the process of finding key phrases. They construct concepts and categories with higher accuracy and comprehensiveness by objectively organizing the data discovered in the literature (Corbin and Strauss, 1990).The major terms utilized in this research are Personal Factors (PF), Environmental Factors (EF), Dealership Factors (DF), and Buying Behavior (BB).

CHAPTER 3

Research and Methodology

The approaches to be used in the study are described in this section. These include the selection of particular research designs, the sample and sampling strategies, the data sources and data collection instruments, and the data analysis procedure. Every strategy is suitably justified in light of its applicability and relevance to the research.

3.1 Research Approach

Various research methodologies are employed based on the specific type of research to done. In this research, quantitative approach is deemed appropriate for addressing the general research problem. The methodology allows for a deeper understanding of the subject matter under investigation. The quantitative method follows the scientific approach, starting with general and specific questions and objectives, and researchers employ established research procedures to quantitatively measure and analyze data (Swanson & Holton, 2005). In this study, the researcher opts for the survey research strategy, as it offers a convenient means of gathering substantial data relevant to the research topic.

3.2 Research Design

The general framework that directs the researcher in answering the study questions is referred to as the research design. According to Cooper and Schindler (2006), a descriptive study design enables the researcher to give a narrative explanation of how various actions and events transpire. In order to investigate the effects of independent variables on the dependent variable, an explanatory research design was used in this study to collect both quantitative and qualitative data. The researcher's goal is to identify and characterize the variables that influence Ethiopian consumers' purchasing decisions regarding electric vehicles.

3.3 Population of the Study

The term "population" refers to the group of units (individuals or elements) of interest for the study, also known as the target population (STAT, 2011). The population for this research was the people of Addis Ababa which is related to address the problem and considered as main player,

those are, Automotive dealers, Automotive Importer, Ministry of transport and logistic, customer who owns EV, who plan to have EV.

3.4 Sampling Technique and Sample Size Determination

Theoretically, the most precise information about a specific population can only be obtained through a census study. However, due to limitations such as time and cost, it is often not feasible to achieve complete coverage of the entire population. Therefore, sampling is frequently utilized as a method that enables researchers to study a relatively small number of units that represent the entire population (Sartnakos, 1998).

Samples will be collected from Automotive dealers, Automotive Importer, Ministry of transport and logistic, customer who owns EV, who plan to have EV.

In determining the sample, the research will apply sample size determination formula designed by Taro Yamane for the samples which will be taken from Automotive dealers Moenco (500) Nyala motors(310) green tech (270) marathon motors(245), Ministry of transport and logistic(45), total population 1370 as shown below;

$$n = \frac{N}{1 + N (e) 2}$$

Where N = total population

e = level of precision or acceptable sampling error (0.05)

n = sample size

$n = 1370/1+1370(0.05)^2 = 310$

The sample size was 310 respondents.

3.4.1 Sampling Technique

For this research, the stratified sampling method was employed. From the total sample size of 310 the sales and aftersales related job were covered 56(18%), MOT 40 (13%) and the remaining 214 (69%) was taken from customer which was gained from the automotive dealers' data base and walk in customers to their premises.

3.5 Data Type and Source

A combination of primary and secondary data sources were used in this research. A survey that was given to respondents was used to collect primary data. Conversely, secondary data was gathered from a variety of organizational papers.

3.6 Data Collection Instruments

3.6.1 Questionnaire

Using self-administered questionnaires with both open-ended and closed-ended questions, the researcher gathered quantitative data from the individuals. The researcher developed these questionnaires while keeping in mind the conceptual framework, study topics, and factors that influence customers' buying decisions towards the purchase of electric vehicles (EVs) in Ethiopia. For the quantitative data, respondents were asked to use a closed-ended questioner (multiple choice, 3 Likert scale) to indicate their agreement or disagreement, and for the qualitative data, the researcher used an open-ended questioner to get the respondent's actual thoughts on the question and their own response.

3.6.2 Document Review

During the document review stage, the researcher obtained the required data by examining various sources such as the annual report, internal documents, and the organization's website. of different organization which related to solve the research problem.

3.7 Data Collection Procedures

The researcher acquired authorization from the Ministry of Transport and consent from each participant before starting to collect data and essential information from the research participants. Subsequently, the researcher and data collector introduced themselves briefly to the respondents and provided an explanation of the study's objectives. Finally, questionnaires were distributed to the respondents, who completed them before returning them to the researcher and data collector.

3.8 Data Analysis

STATA SE12 model software was used to sort, code, and process the quantitative replies once the data had been gathered and arranged using the proper data collecting methods. Following analysis, the data was shown as tables. A mixed research method was used to present the data that was gathered.

3.9 Data Quality Assessment

To guarantee the accuracy of the data gathered, the researcher personally conducted thorough orientation sessions on the data collection process. This was done to provide sufficient guidance and clarity to the participants.

3.10 Data Validity and Reliability

3.10.1 Validity

The degree to which an indicator or combination of indications appropriately evaluates the idea it is designed to measure is referred to as validity. It is an important and useful idea in all research techniques. Internal validity, external validity, concept validity, and statistical conclusion validity are the four different categories of validity. Together, these validity approaches aim to reduce the impact of numerous unrelated variables that may skew research and expose the reliability of its conclusions. The researcher will make every effort to verify the various forms of validity of the measurements used for the study via literature reviews and comments from the researcher advisor.

3.10.2 Reliability

The degree to which an instrument reliably yields accurate and trustworthy findings is referred to as reliability. Internal consistency is seen in the consistency with which respondents rank the items on a multiple-item measuring scale after it is given to them. A number of variables, including item-to-total correlation, average inter-item correlation, and Cronbach's alpha, are frequently used to evaluate this dependability. Because Cronbach's alpha computes the average of all split-half reliability coefficients, it is frequently employed by academics to evaluate internal reliability. Cronbach's alpha will be used in this investigation to assess internal dependability. Generally speaking, the Cronbach's alpha reliability coefficient falls between 0 and 1, with a value closer to 1 denoting greater internal consistency across the scale's items.

```
. alpha ABB APF AEF ADF

Test scale = mean(unstandardized items)

Average interitem covariance:     7.252799
Number of items in the scale:            4
Scale reliability coefficient:      0.8708
```

Figure 4. Cronbach's alpha Result

- **Scale reliability coefficient (Cronbach's alpha): 0.8708**. This is a commonly used metric for internal consistency reliability. A rule of thumb for interpreting Cronbach's alpha is as follows:
  - 0.9 or higher: Excellent reliability
  - 0.8 - 0.89: Good reliability
  - 0.7 - 0.79: Acceptable reliability
  - 0.6 - 0.69: Questionable reliability
  - Below 0.6: Poor reliability

With an alpha of 0.8708, the items scale have good internal consistency. This means they measure the same underlying construct well.

3.11 Ethical Consideration

The following ethical considerations were made when working with the research method.

i. The Informed consent: An explanation of the importance and goal of the research was given to the study participants. They were also told that they were free to choose whether or not to participate in completing the questionnaire.

ii. Confidentiality: The participants were free to respond and converse as they were given the assurance that whatever information they disclosed would be kept private. When needed, the researcher used codes to ensure confidentiality.

iii. Procedures of the study: The participants shouldn't be harmed or confused by the procedures used. The questionnaire was meticulously created without any bias in order to guarantee fairness and clarity.

CHAPTER 4

Data Presentation, Analysis and Interpretation

While conducting this research 310 sample distributed to the selected samples, and 291 data is collected from the whole distributed questionary. The questionary has been made in online format and hard paper format which is prepared in two language English and Amharic, which can help the respondent to understand the purpose the questions, so that, it helps to get genuine feedback from the respondent. This shows that 93.8% return rate have on this research. Out of the total response 13.7% female and 86.3% males was participated, and from the total respondents 56.8 % are married and 43.2 % are unmarried. Despite from this, 46.5 % have Masters level education, 25.8 % have 1st degree on different profession and 27.7 % of the respondents have diploma and below. The average household income is ETB 33,650 for the respondent who participate on this research.

According to Sareen (2018), response rate table

Table 3. Sareen response rate

No	Response rate	Decision
1	50%	Adequate
2	60%	Good
3	≥ 70%	Excellent

Source; Sareen, 2018

The remarkably high response rate achieved in this study is noteworthy as it enhances the validity of the research and increases the potential for generalizing the findings. This indicates a successful data collection endeavor. Prior to distributing the questionnaire, all participants were reassured that their involvement was voluntary and that their identities would remain anonymous.

4.1. Demographic Characteristics of Respondents

For the purposes of this research, the variables information on demographic aspects are Gender of respondents, Age of respondents, Educational level, Experience in this factory and Marital Status. The result of this demographic presentation was described below in the figures and tables using descriptive statistics analysis.

4.1.1. Gender of Respondents

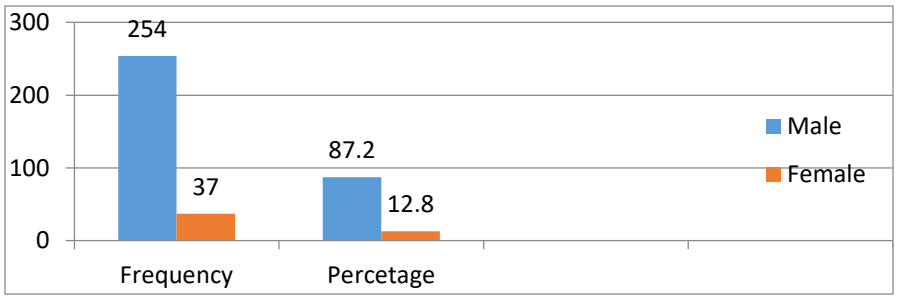

Figure 5. Gender of respondents

Source: own research, 2024

Table 4. Gender of respondents

Gender	Measurements	Result
Male	Frequency	254
	Percentage	86.2%
Female	Frequency	37
	Percentage	12.8%

As it presented in the figure 4 above gender categories, from 291 respondent's male respondents are 254(87.6%) and number of female respondents 36(12.4%).

4.1.2. Age of the Respondents

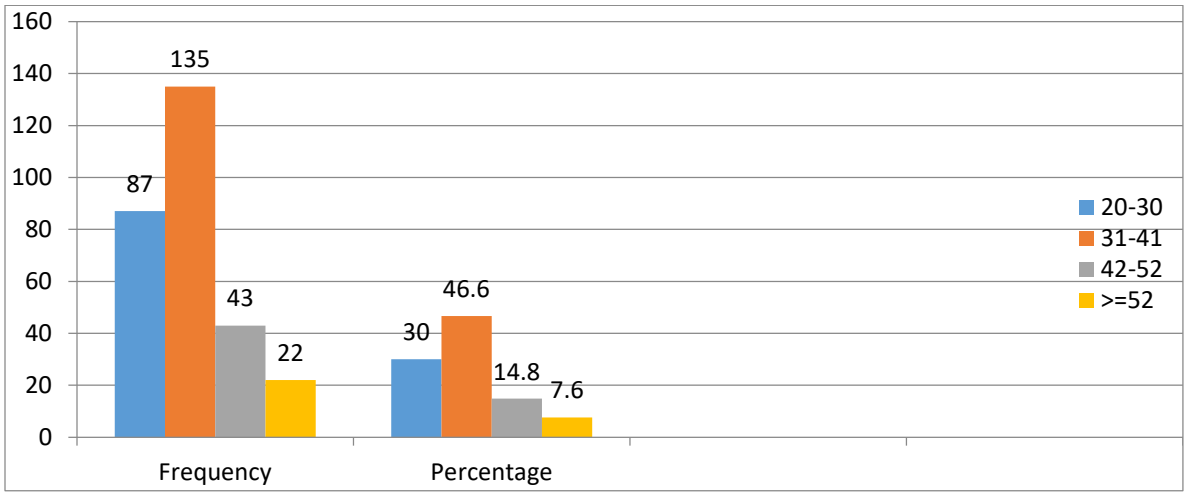

Figure 6. Age of respondents

Source: Own , 2024

Table 5. Age of respondents

Age	20-30	31-41	42-52	>=52
Frequency	87	135	43	22
Percentage	30%	46.6%	14.8%	7.6%

The age groupings of the respondents were divided into four groups, as shown in figure 5 above. The age range of the first group is 20–30 years old; the second is 31–41 years old; the third is 42–52 years old; and the last age group is 52 years old or more. The age distribution of sample respondents is as follows: 87 respondents, or 30%, are between the ages of 20 and 30; 135 respondents, or 46.6%; 43 respondents, or 14.8%; and 22 respondents, or 7.6%, are between the ages of 31 and 41; and 52 years or older. This suggests that young people make up the majority of the research participants.

4.1.3. Educational Status of the Respondents

Table 6. Educational status of respondents

No	**Respondents Characteristics**		**Percentage**
1	Educational level	Masters and above	46.5%
		Degree	25.8%
		Diploma and below	27.7%
		Total	**100**

Source: Own , 2024

As shown from the above table 4, educational level of respondents below diploma 46.5% hold masters and above, Degree holder 25.8% and Diploma and below 27.7%.As the result indicated that most of the respondents have master and above education level.

4.1.4. Marital Status

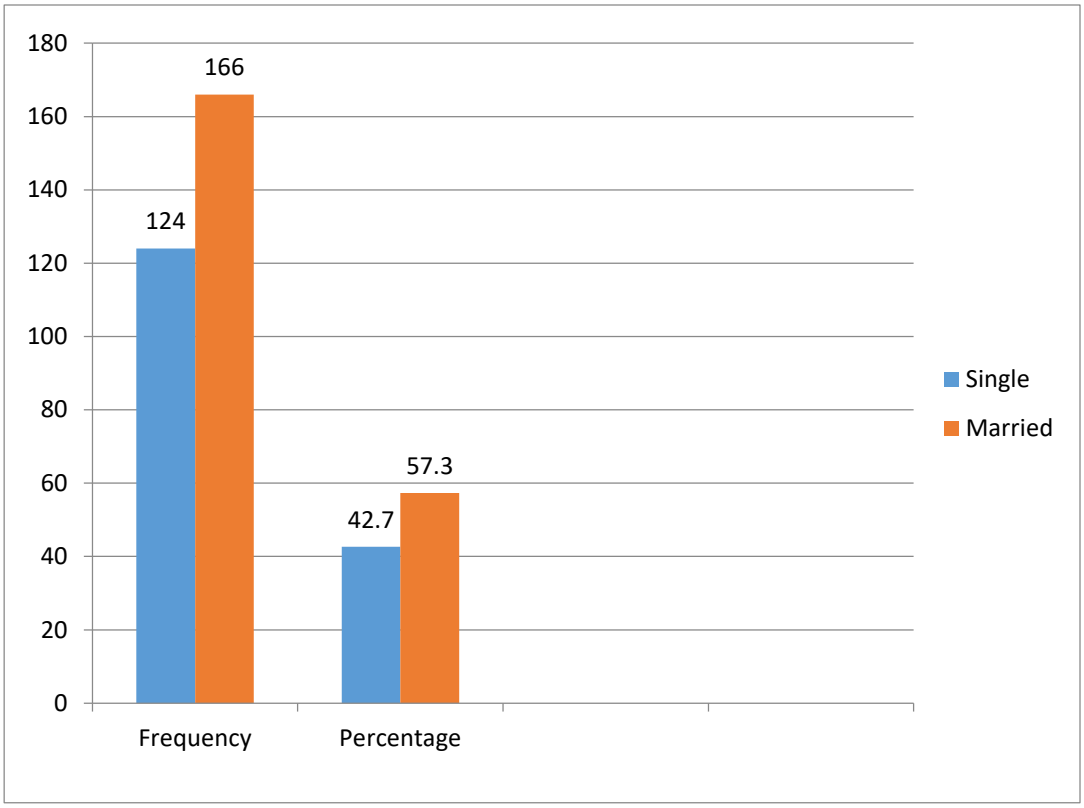

Figure 7. Marital status

Source: Own , 2024

Table 7. Marital status

Measurements	Single	Married
Frequency	124	166
Percentage	42.7%	57.3%

As indicated in the above figure 6, 166(57.3%) of the respondent is unmarried, 124(42.7%) of respondents were married.

Based on the examination of the demographic information, it can be inferred that the majority of the research participants are married men with master's degree or higher in education.

4.2. Descriptive Statistics Results

As per the research objectives, To investigate the key determinants that influence customer buying decisions to wards to the purchase of an electric vehicle (EV) in Ethiopia, Respondent ratings were asked to rank the participants' agreement with statements related to the three dimensions, each of which had a subdimension

Very interested, very important, very knowledgeable, very confident, very concerned, very willing, very willing, High income: 3 (highest value)

Somewhat interested, Somewhat important, Somewhat knowledgeable, Somewhat confident, Somewhat concerned, Somewhat willing, Moderate income: 2 (middle value)

Not interested at all, Not important at all, Not knowledgeable at all, Not confident at all, Not concerned at all, Not willing, Low income:: 1lowest value)

Yes :3 May be 2 and No: 1

As demonstrated below, a mean score of less than 1.4 is accepted as low, a mean score of 1.5 to 2.4 is accepted as moderate, and a mean score of more than 2.5 is accepted as high.

Table 8. Measurement of mean

s/n	mean value	description
1	>= 1.4	low
2	1.5 - 2.4	moderate
3	<= 2.5	high

Source: google

4.2.1. Buying Behavior

This section was discussed about the buying behavior of the respondents related to Environmental friendliness, Fuel efficiency, Technological advancement, Brand reputation, Luxury and comfort Safety features, Price, Adopting new technologies like electric vehicles, Reflects the social status when they decided to purchase vehicle. This dimension was evaluated using nine (9) questions.

For the answers: Very interested, very important, the given point is 3 (highest value).

: Somewhat interested, Somewhat important, the given point is 2 (middle value)

: Not interested at all, Not important at all, the given point is 1(lowest value)

Table 9. The statistical results of buying behavior

	3	2	1
1. How important are Environmental friendliness to you when considering a new car?	197	82	12
	67.70%	28.18%	4.12%
2. How important are Fuel efficiency to you when considering a new car?	264	20	7
	90.72%	6.87%	2.41%
3. How important are Technological advancement to you when considering a new car?	238	44	9
	81.79%	15.12%	3.09%
4. How important are Brand reputation to you when considering a new car?	265	18	8
	91.07%	6.19%	2.75%
5. How important are Luxury and comfort to you when considering a new car?	224	55	12
	76.98%	18.90%	4.12%
6. How important are Safety features to you when considering a new car?	246	39	6
	84.54%	13.40%	2.06%
7. How important are Price to you when considering a new car?	273	15	3
	93.81%	5.15%	1.03%
8. How interested are you in adopting new technologies like electric vehicles?	177	83	31
	60.82%	28.52%	10.65%
9. How important is it for you to own a car that reflects your social status?	65	211	15
	22.34%	72.51%	5.15%
Mean	2.704849		

Source: Own, 2024

The buying behavior of the customer when plan to buy new vehicle with nine questions scored mean 2.70. The buying behavior that can influence the purchasing decision score a Mean=2.70 which is a high agreement. In general, the buying behavior , was then evaluated that influence the buying decision at the level Mean=2.70, indicating that the customer shown high levels of agreement in their buying behavior prior to making the purchase.

4.2.2. Level of Personal Factor on Buying Behavior

This section was discussed about the personal factor that can influence the buying behavior. This section was discussed with income, technological knowledge, and resell value. This dimension was evaluated using five questions.

For the answers: very important, very knowledgeable, very confident, very concerned, High income the given point is 3 (highest value).

: Somewhat important, somewhat knowledgeable, somewhat confident, somewhat concerned, Middle income the given point is 2 (middle value).

: Not important at all, not knowledgeable at all, not confident at all, not concerned at all, Low income the given point is 1 (low value).

Table 10. The statistical results of Personal factors

	3	2	1
1. What is your income level	99	184	8
	34.02%	63.23%	2.75%
2. How knowledgeable are you about electric vehicles and their technology?	134	149	8
	46.05%	51.20%	2.75%
3. How important is the resale value of a car when you consider purchasing a new one?	204	79	8
	70.10%	27.15%	2.75%
4. Are you concerned about the potential lower resale value of EVs compared to traditional cars?	201	86	4
	69.07%	29.55%	1.37%
5. How confident are you that the resale value of EVs will improve in the future?	184	44	63
	63.23%	15.12%	21.65%
Mean			2.502405

Source: Own, 2024

Personal Factors with five questions scored mean 2.50. Personal factor is found as one of the determinates that can determine the buying decision towards the purchase of electric vehicle with a mean score of, Mean=2.50 which is high degree of agreement. The results indicate that personal factors (PF) have a significant impact on customers' buying behavior (BB) when they are planning the purchase of an electric car in Ethiopia, as the personal factor has been applied to a mean of 2.50 overall.

4.2.3. Level of Environmental Factor on Buying Behavior

This section was discussed about the Environmental factors which are Environmental Concerns: Climate Change Awareness: Government Regulation and Incentives: Taxation Policy: Legal and Political Issues: Technician Availability: and Myths about EVs. This dimension was evaluated using twenty questions. Each answer for each question has the value of:

Very interested, very important, very knowledgeable, very confident, very concerned, very willing, very willing, High income: 3 (highest value)

Somewhat interested, somewhat important, somewhat knowledgeable, somewhat confident, somewhat concerned, somewhat willing, Moderate income: 2 (middle value)

Not interested at all, Not important at all, Not knowledgeable at all, Not confident at all, Not concerned at all, Not willing, Low income: 1lowest value)

Yes :3 May be: 2 and No: 1

Table 11. The statistical results of Environmental factors

	3	2	1
1. How concerned are you about the environmental impact of traditional gasoline-powered vehicles?	120	163	8
	41.24%	56.01%	2.75%
2. How willing are you to switch to an electric vehicle to reduce your carbon footprint?	149	124	18
	51.20%	42.61%	6.19%
3. Do you believe electric vehicles are a viable solution to combat climate change?	189	81	21
	64.95%	27.84%	7.22%
4. How knowledgeable are you about the effects of climate change on Ethiopia?	156	123	12
	53.61%	42.27%	4.12%
5. Do you believe climate change is a serious threat that needs immediate action?	239	33	19
	82.13%	11.34%	6.53%
6. How likely are you to consider environmental factors when making a car purchase decision?	94	155	42
	32.30%	53.26%	14.43%
7. Are you aware of any government regulations or incentives currently available for electric vehicles in Ethiopia?	220	53	18
	75.60%	18.21%	6.19%
8. How important are government incentives in making your decision to purchase an EV?	137	128	26
	47.08%	43.99%	8.93%
9. What type of government incentives would most encourage you to consider an EV	143	78	70
	49.14%	26.80%	24.05%
10. Do you believe the current taxation policy for EVs in Ethiopia is fair and encouraging adoption?	189	68	34
	64.95%	23.37%	11.68%
11. How would you feel about government policies that offer lower taxes for electric vehicles compared to traditional cars?	176	24	91
	60.48%	8.25%	31.27%
12. Do you believe lower taxes for EVs would incentivize more people to buy them?	232	44	15
	79.73%	15.12%	5.15%
13. Are you concerned about the legal and political stability in Ethiopia impacting the future	253	29	9
	86.94%	9.97%	3.09%
14. How confident are you that the government will continue to support and promote electric vehicles in the future?	113	122	56
	38.83%	41.92%	19.24%
15. Do you believe legal and political issues pose a significant barrier to EV adoption in Ethiopia?	233	47	11
	80.07%	16.15%	3.78%
16. Are you concerned about the availability of qualified technicians to service and repair electric vehicles in Ethiopia?	247	36	8
	84.88%	12.37%	2.75%
17. How important is the availability of local technicians when considering an EV purchase?	229	46	16
	78.69%	15.81%	5.50%
18. Do you believe the government should invest in training more technicians to service EVs?	263	19	9
	90.38%	6.53%	3.09%
19. Have you heard any myths or misconceptions about electric vehicles?	168	85	38
	57.73%	29.21%	13.06%
20. Do these myths influence your decision towards purchasing an EV?	38	127	126
	13.06%	43.64%	43.30%
Mean			2.505326

Source: Own , 2024

Environmental Factors with twenty questions scored mean 2.50. Environmental factor is found as one of the determinant that can determine the buying decision towards the purchase of electric vehicle with a mean score of, Mean=2.50 which is high degree agreement. Environmental factor(EF) has generally been applied at the level Mean=2.50, and this finding indicates that environmental factors(EF) are highly influential and one of the elements influencing customers' decisions to buy electric vehicles in Ethiopia.

4.2.4. Level of Dealership Factors on Buying Behavior

This section was discussed about the Dealership factors which are Quality of Service: Product Knowledge: Charging Infrastructure Access: Dealer Capacity (Maintenance and Part Availability). This dimension was evaluated using eleven questions. Each answer for each question have the value of :

Very interested, very important, very knowledgeable, very confident, very concerned, very willing, very willing, High income: 3 (highest value)

Somewhat interested, Somewhat important, Somewhat knowledgeable, Somewhat confident, Somewhat concerned, Somewhat willing, Moderate income: 2 (middle value)

Not interested at all, Not important at all, Not knowledgeable at all, Not confident at all, Not concerned at all, Not willing, Low income:: 1lowest value)

Yes :3 May be: 2 and No: 1

Table 12. The statistical results of dealership factor

	3	2	1
1. How important is the quality of customer service when you consider purchasing a new car?	257	32	2
	88.32%	11.00%	0.69%
2. How likely are you to choose an EV dealership based on its reputation for good customer service?	164	113	14
	56.36%	38.83%	4.81%
3. How important is it for the dealership salespeople to have in-depth knowledge about electric vehicles?	212	73	6
	72.85%	25.09%	2.06%
4. Have you encountered EV salespeople who seemed knowledgeable about the technology and benefits of EVs?	160	76	55
	54.98%	26.12%	18.90%
5. If yes, did their knowledge influence your decision-making process in any way?	149	86	56
	51.20%	29.55%	19.24%
6. How important is it for an EV dealership to have charging infrastructure available on-site?	209	68	14
	71.82%	23.37%	4.81%
7. Have you visited any EV dealerships that offer on-site charging facilities?	137	89	65
	47.08%	30.58%	22.34%
8. Did the availability of charging infrastructure make the dealership more appealing to you?	214	55	22
	73.54%	18.90%	7.56%
9. How concerned are you about the availability of maintenance and parts for electric vehicles in Ethiopia?	210	62	19
	72.16%	21.31%	6.53%
10. Would you feel more comfortable buying an EV from a dealership with a dedicated service department for electric vehicles?	258	24	9
	88.66%	8.25%	3.09%
11. How important is it for you to know that parts for your EV are readily available in case of repairs?	276	12	3
	94.85%	4.12	1.03%
Mean	2.62636676		

Source: Own , 2024

Dealership Factors with twenty questions scored mean 2.62. Dealership factors (DF) is found as one of the determinants that can determine the buying decision towards the purchase of electric vehicle with a mean score of, Mean=2.62 which is high degree agreement. The dealership factor has generally been used to the level Mean=2.62, and this finding indicates that dealership factors (DF) have a significant impact and are a determining element in customers' purchasing decisions when they are thinking about buying electric vehicles in Ethiopia.

4.3. Inferential Analysis

4.3.1. Correlation Analysis

A correlation analysis was done to see whether there were any correlations between the variables. Measuring the degree of relationship between the four variables—buying behavior, personal factors, environmental factors, and dealership factors—is the goal of correlation analysis.

Pearson's correlation coefficients were used in this investigation. A bigger value of these coefficients, which range from -1 to +1, denotes a stronger link. A perfect positive relationship is represented by a coefficient of +1, and a perfect negative relationship is represented by a value of -1. There isn't a linear relationship between the variables when the value is 0.

Based on statistical analysis, the values for interpretation are (Marczyk, Dematteo & Festinger, 2005)

Table 13. Direction and magnitude of correlation

No	Direction		Magnitude
	Negative	Postive	
1	-.0.1 to -.30	0.1 to 0.30	Low correlation
2	-0.30 to -.70	0.30 to 0.70	Moderate correlations
3	-0.70 to -.90	0.70 to 0.90	Strong correlations
4	-.0.90 to -1.00	0.90 to 1.00	Very strong correlations

Source; Marczyk, Dematteo & Festinger, 2005

```
. corr BB PF EF DF
(obs=291)
```

	BB	PF	EF	DF
BB	1.0000			
PF	0.8869	1.0000		
EF	0.8593	0.7542	1.0000	
DF	0.8816	0.7969	0.7711	1.0000

Figure 8. Correlations

Source: Own , 2024

The correlation coefficients between the variables BB, PE, EF, and DF are displayed in Figure 7. The relationship between two variables is shown by the correlation coefficient, which ranges from -1 to 1. A perfect positive linear relationship is shown by a correlation coefficient of 1, and a perfect negative linear relationship is indicated by a correlation coefficient of -1. The two variables do not have a linear connection when the correlation coefficient is 0. With correlation values ranging from 0.8593 to 0.8869, the Pearson correlation coefficients demonstrated that the three factors evaluating the independent variables(PF,EF,DF) had positive strong relation with buying behavior (BB).

1. **The Relationship Between Personal Factors and Buying Behavior**

The correlation coefficient of 0.8869 indicates a strong positive association between personal factors(PF) and buying behavior(BB), as seen in the correlation table 10 above.

2. **The Relationship Between Environmental Factors and Buying Behavior as it shows in**

Table 10 showed a strong connection (r = 0.8593) between environmental factors (EF) and buying behavior (BB). This is a significant positive correlation between environmental factors(EF) and buying behavior (BB).

3. **The Relationship Between Dealership Factors and Buying Behavior**

As can be seen from the correlation table 10 above, the result showed a strong positive relation with a value of 0.8816 between dealership factors(DF) and buying behavior (BB).

According to the analysis result and the discussion highest correlation value, the personal factors show that positive correlation to buying behavior with 0.8593 value , the environmental factors with 0.8593 vale, and dealership factors with 0.8816 value, In general, personal, environmental

and dealership factors have strong positive correlation with buying behavior. This means that purchasing decision to wards to EV in Ethiopia has positive correlation with buying behavior. These positive correlations show that Ethiopian consumers' buying behavior has grown as a result of their ability to make adequate decisions about buying electric vehicles (EVs). At the end of the findings of the correlation analysis, demonstrated a substantial and positive relation between the dependent variable (buying behavior) and the independent variables (personal, environmental, and dealership factors).

4.3.2. Regression Analysis

The first step in using regression analysis is to make sure the data are suitable for regression analysis by double-checking the assumptions.

4.3.2.1. Checking the Assumption

A number of diagnostic tests were carried out to make sure the data met the requirements for linear regression analysis before the regression analysis was carried out. These tests included linearity, multicollinearity, and normality evaluations to confirm the data's appropriateness.

4.3.2.1.1. Normality Test

It is standard practice in statistics to assume that the data have a normal distribution. Garson (2012) proposes that a histogram of frequency outputs can be used to visually evaluate normalcy. The statistical framework is based on this premise, which can be broken if it affects the reliability of the conclusions obtained from the investigation. Therefore, before performing any statistical analysis on the data, it is essential to confirm or test this assumption.

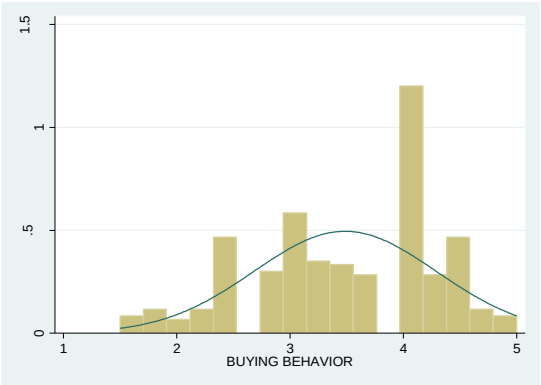

Figure 9. Normality Test Results
Source: Own , (2024)

The data exhibits a normal distribution, as evidenced by the bell-shaped curve in the regression standardized residuals frequency distribution. A graphical technique approach was used to conduct the normalcy testing, as shown in Figure 8. The residuals show a normal distribution, according to the results shown in the figure. As a result, there are no problems with the data that would indicate that the assumptions have been breached.

4.3.2.1.2. Multicollinearity Test

When two or more input variables have a precise or nearly precise linear connection, this is known as multicollinearity. It is a statistical phenomenon that appears when there is considerable correlation between the independent variables and two or more predictor variables in a multiple regression model. Variance inflation factor (VIF) and tolerance statistics are used to evaluate multicollinearity.

The connection between independent variables is referred to as multicollinearity in multiple regression analysis by Takele Embilo (2020), citing Matt et al. (2013). It indicates that the independent variables have a linear relationship with one another. Takele Embilo (2020), quoting Robert (2007), states that one often used metric of multicollinearity is the variance inflation factor (VIF). To evaluate the degree of multicollinearity between independent variables in a regression model, VIF and tolerance are frequently used. Takele Embilo (2020) further cites Menard (1995), who states that the variance inflation factor should be less than 10 and the tolerance should be greater than 0.2.

```
. vif
```

Variable	VIF	1/VIF
DF	3.36	0.297833
PF	3.16	0.316770
EF	2.84	0.351930
Mean VIF	3.12	

Figure 10. Multicollinearity test result

Table 14. Multicollinearity Results using VIF

Multicollinearity Statistics		
Independent Variables	Tolerance	VIF
Personal Factors	0.316	3.16
Environmental Factors	0.351	2.84
Dealership Factors	0.297	3.36

Source: Own , (2024)

Table 11 above illustrates the results, which showed that all variables had tolerance values larger than 0.2 and VIF values less than 10.

4.3.2.1.3. Linearity Test

The degree to which changes in the independent variables are correlated with changes in the dependent variable is known as linearity. A linearity test was used in this study to determine whether or not there is a linear relationship between the dependent variable, buying behavior, and the independent variable, personal factor.

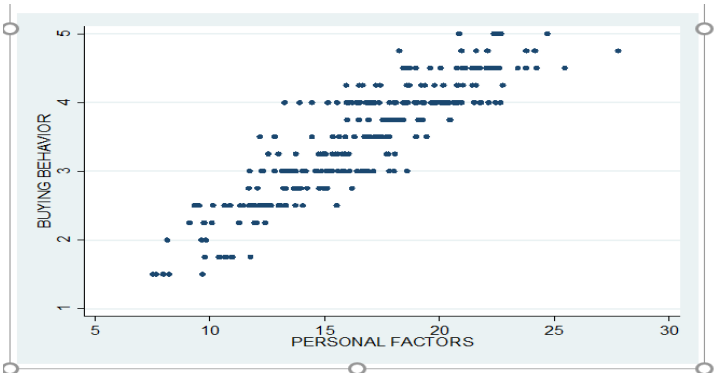

Figure 11. Linearity Test Results

Source: Own , (2024)

The scatter plot of residuals, as seen in figure 10 above, does not demonstrate any notable variations in the residuals' distribution. This finding implies that the expected relationship is linear, which means the assumption is fulfilled.

4.3.2.2. Linear Regression Analysis

Regression analysis was used to look into and analyze the factors that influence Ethiopian consumers' decisions to buy electric vehicles (EVs). The degree to which the independent variables can account for the variance in the dependent variable is another implication of linear regression analysis. Linear regression analysis was used to identify the elements—such as dealership characteristics, environmental factors, and personal factors—that influence the buying behavior to choice the purchase an electric vehicle.

4.3.2.2.1. Model Summary Results

```
. regress BB PF EF DF

      Source |       SS       df       MS              Number of obs =     291
-------------+------------------------------           F(  3,   287) =  901.18
       Model |  170.247139     3  56.7490463           Prob > F      =  0.0000
    Residual |  18.0728782   287  .062971701           R-squared     =  0.9040
-------------+------------------------------           Adj R-squared =  0.9030
       Total |  188.320017   290   .64937937           Root MSE      =  .25094

------------------------------------------------------------------------------
          BB |      Coef.   Std. Err.      t    P>|t|     [95% Conf. Interval]
-------------+----------------------------------------------------------------
          PF |   .0807754   .0067877    11.90   0.000     .0674154    .0941354
          EF |   .0658494   .0065547    10.05   0.000      .052948    .0787508
          DF |     .06671   .0066793     9.99   0.000     .0535634    .0798567
       _cons |  -.0222229   .0694312    -0.32   0.749    -.1588818    .1144361
------------------------------------------------------------------------------
```

Figure 12. STATA regression result

The degree to which the independent variable influences the dependent variable is shown by the R2 value. The dependent variable and three independent variables in a linear regression are shown by the data in Figure 11. Additionally, Figure 11's data shows that the dependent variable (buying behavior) has an R2 value of 0.904, meaning that the three independent variables—personal, environmental, and dealership factors—taken together explain 92 percent of the variance in the dependent variable. This indicates that the independent variables explain for 90.4% of the variation in buying behavior toward the purchase of electric vehicles, with other factors not included in this study accounting for the remaining 9.6% of the variation. To put it another way, 90.4% of the variation in purchasing behavior can be predicted by the independent factor. Specifically in relation to purchasing electric vehicles. The remaining 9.6% of the variation in buying behavior can be attributed to other variables. Consequently, more research in future should be undertaken to explore these additional determinant’s that contribute to the variation in buying behavior.

4.3.2.2.2. ANOVA (Analysis of Variance)

ANOVA analysis is frequently used to evaluate the average scores between several variables or groups.

The effect of the determinants (personal, environmental, and dealership factors) on the purchase of electric automobiles in connection to buying behavior was examined in this study using ANOVA. The F-statistics p-value (0.000), which is below than the significance criterion of 0.05, indicates that the analysis found a significant effect of at least one determinant. The model is statistically significant, implying that the variation it explains is not the result of chance, according to the significance of the F-statistics. The goodness-of-fit test via ANOVA was used to evaluate the linearity of the model, and the findings show that the model fits well. Support for this comes from the p-value of 0.000, which is less than $\alpha = 0.05$, showing even more that the dependent and independent variables have a linear relationship. As a result, the model is suitable.

4.3.2.2.3. Beta Coefficient

The average amount of change in the dependent variable that results from a unit of change in the independent variable is explained by the coefficient. As a result, the unstandardized beta coefficient (β) provides information on the distinct role that every factor plays in the model. A strong statistical contribution of the predictor variable to the model is indicated by a modest p-value (<0.05) and a high beta value (β). On the other hand, a high p-value ($p > 0.05$) and a small beta value (β) suggest that the predictor variable has little to no significance in the model (George and Mallery, 2003).

Table 15. Coefficients

Model		β	Std. Error	t	P -value
1	(Constant)	-0.022	.0694	-0.32	0.794
	Personal	0.080	.0067	11.90	0. 000
	Environmental	0.065	.0065	10.05	0.000
	Dealership	0.066	.0066	9.99	0.000

Source: Own, 2024

As can be seen in Table 12 above, at a 95% confidence level, Personal, Environmental, and Dealership factors all had a statistically significant impact on Buying Behavior, with P-values of

0.000, 0.000, and 0.000, respectively, and significance levels of less than 0.05 ($P<0.05$). Generally speaking, the dependent variable's purchasing behavior was statistically significantly impacted by independent variables. X1, X2, and X3 are the three predictor variables in the following model, which is used to further investigate the impact of independent factors on buying behavior.

$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e$

Where: a = the constant (point at which line crosses Y axis)

β_1 = slope (regression coefficient) for variable X_1

β_2 = slope for variable X_2

β_3 = slope for variable X_3

In the equation, the error (or residual) value is indicated by the letter "e". "Y" is the buying behavior(BB) in the equation, "a" denotes the regression constant, and "β1 to β3" denotes the regression coefficients. Moreover, "e" stands for the error term, "X1" for the personal factors, "X2" for the environmental factors, and "X3" for the dealership factors.

Y= -0.022 +0.080X1 +0.065x2 +0.066X3 +e

Y=0.022 +0.080personal factors +0.065environmental factors +0.066dealership factors +e

The average amount of change in the dependent variable(BB) produced by a unit of change in the independent variable(PF,EF,DF) is explained by the regression coefficient.

Therefore,

- PF: Positive coefficient (**β_1**=0.0808) suggests that as PF increases by one unit, the dependent variable (BB) tends to increase by 0.0808 on average, holding all other variables constant. The fact that the p-value for PF is close to zero (0.0000) indicates this effect is statistically significant.
- EF: Positive coefficient (**β_2**=0.0658) suggests that as EF increases by one unit, the dependent variable (BB) tends to increase by 0.0658 on average, holding all other variables constant. Similar to PF, the p-value for EF (0.0000) is statistically significant
- DF: Positive coefficient (**β_3**=0.066) suggests that as DF increases by one unit, the dependent variable (BB) tends to increase by 0.066 on average, holding all other variables constant. The p-value for DF (0.0000) is also statistically significant.

4.3.2.2.4. Hypothesis Testing

A testable assumption or guess about the solution to a research topic is called a hypothesis. Usually, it is seen as an attempt on the part of the researcher to offer an explanation for the phenomenon that is being studied. These theories are the researcher's attempt to explain the phenomenon under investigation, and they should include forecasts regarding the variables under investigation. These predictions are then scrutinized through data collection and analysis, and the conclusions drawn from the data are used to determine whether to accept or reject the hypotheses.

The hypothesis aimed to determine whether the dependent variable, buying behavior, was significantly impacted by the independent variables environmental factors, dealership factors, and personal factors. As a result, using the regression coefficient data, the three hypotheses that were previously developed in chapter two were examined.

Table 16. Result of Regression Analysis

Personal Factors	**β1=** 0.080	P -value PF = 0.000
Environmental Factors	**β2=** 0.065	P- value PF =0.000
Dealership Factors	**β** 3=0.066	P -value PF =0.000

Source: Own , 2024

The test's beta value and probability value (p-value) can be used to inform decision-making in hypothesis testing. In other words, the null hypothesis is rejected if the p-value is less than a predefined level of significance, which is often 0.05.

The beta coefficient table 13 indicates that Personal, Environmental, and Dealership factors all had a statistically significant effect on buying behavior at the 95% confidence level. This was supported by their respective P-values of 0.000, 0.000, and 0.000, as well as the significance level of $P<0.05$.

H1. Personal factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia

The regression Standardized beta coefficient result of personal factors to on the buying decision towards the purchasing of electric vehicle in Ethiopia was indicated as (beta value =0.080, $P<0.05$ as Sig 0.000), statistically positive and significant effect on buying behavior, therefore, we reject the null hypothesis(H1).

H2. Environmental Factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia

The regression Standardized beta coefficient result of environmental factors to on the buying decision towards the purchasing of electric vehicle in Ethiopia was indicated as (beta value =0.065, P<0.05 as Sig 0.000), statistically positive and significant effect on buying behavior, therefore, we reject the null hypothesis(H2). .

H3. Dealership factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia.

The regression Standardized beta coefficient result of environmental factors to on the buying decision towards the purchasing of electric vehicle in Ethiopia was indicated as (beta value =0.066, P<0.05 as Sig 0.000), statistically positive and significant effect on buying behavior, therefore, we reject the null hypothesis(H3).

With a P-value of 0.000, 0.000000, the significant independent variables that generally had a statistically positive and significant effect on buying decisions all the independent variable, dealership factors, personal factors, and environmental factors. The decision made by the researcher was outlined in table 4.18 below, which was based on the analysis result.

Table 17. Summary of Hypothesis

Hypothesis	Decision
H1. Personal factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia	Reject
H2. Environmental Factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia	Reject
H3. Dealership factors don't have an impact on Buying Decision towards the purchase of Electric Vehicle in Ethiopia.	Reject

Source: Own , 2024

CHAPTER 5

Summary, Conclusion and Recommendation

5.1. Summary of Findings

The study includes the distribution of 310 questionnaires to respondants, all of which were correctly completed and returned, yielding a 93.8% response rate. The study used an explanatory research methodology and mostly depended on gathering primary data. This study's particular focus was on Addis Ababa-based government agencies, private businesses, and individual clients. The following presents the conclusions drawn from the data analysis, which included regression, correlation, and descriptive statistics.

- Gender of respondent:-number of male respondents are 254(87.6%) and number of female respondents 36(12.4%).. This suggests that men represent the majority of the responders.
- In relation to the respondents' age, from the sample shows in the age of 20-30 years 87 in number which is 30%, age from 31-41 years are 135(46.6%), age from 42-52 years are 43 (14.8%), and age greater or equal to 52 years are 22 (7.6%). This indicates that most of the participant on this research are adults.
- Regarding educational level of respondents below diploma 46.5% hold masters and above, Degree holder 25.8% and Diploma and below 27.7%.As the result indicated that most of the respondents have master and above education level
- Marital status - 166 respondents, or 57.3%, were unmarried, 124(42.7%) of respondents were married. From this most of the respondents are married.
- From descriptive statistics result of determinants of purchasing decision to wards Electric vehicle, the mean score of Dealership Factors (Mean=2.62636676) has got the highest degree among the two independent variables. The result is followed by Environmental Factors (Mean=2.505**)** and Personal Factors (Mean= 2.502). It means that dealership factors are predominant than the others on purchasing decision of electric vehicle.
- From descriptive statistic the mean score of buying behavior was 2.704 . This result indicates that buying behaviors have high level of buying decision towards the purchase of Electric vehicle in Ethiopia.

- The three parameters assessing the purchase decision were all positively correlated with buying behavior within the range of 0.8593 to 0.8869, according to Pearson correlation coefficients. According to the analysis result and the discussion highest correlation value, the personal factors show that positive strong correlation to buying behavior with the value of 0.8869, the dealership factors with the value 0.8816, and environmental factors with value of 0.8593. In general, personal, environmental and dealership factors have strong positive correlation with buying behavior.
- The finds of linear regression analysis depict that 90.4% variation in buying behavior (dependent variable) is explained by purchasing determinants (independent variable) (where by R square is 90.4%). Additionally, the model is likely significant because the F statistics significance value of.000, which is less than $p<0.05$, indicates this.
- It can concluded from the ANOVA test results that the model fits the data effectively. The p-value (Sig) of 0.000 is less than the significance level of 0.05, indicating a linear relationship between the dependent and independent variables, which lends support to this. Thus, it may be said that the model is appropriate based on the ANOVA results.
- The results of the regression coefficient showed that personal factors had a statistically significant and positive effect on the buying behavior of electric vehicles (beta value = 0.080, $P<0.05$ as Sig.000). As a result, the hypothesis 1 was rejected.
- The results of the regression coefficient showed that environmental factors had a statistically significant and positive effect on the buying behavior of electric vehicles (beta value = 0.065, $P<0.05$ as Sig.000). As a result, the hypothesis 2 was rejected.
- The results of the regression coefficient showed that dealership factors had a statistically significant and positive effect on the buying behavior of electric vehicles (beta value = 0.066, $P<0.05$ as Sig.000). As a result, the hypothesis 3 was rejected.
- As per the finding of this research, Personal, Environmental and Dealership Factors were the significant independent variables which had statistically significant effect on buying behavior. This indicates that when Personal, Environmental and Dealership Factors are practical, buying behavior would increase.

5.2. Conclusions

The purpose of this study is to investigate the main variables that influence Ethiopian consumers' decisions to buy electric vehicles (EVs). Three research questions were developed in order to meet the objectives of the study, and methodologies such as descriptive analysis, correlation, and linear regression were used to address these questions. The researcher comes to the following conclusions in light of the findings:

- Based on descriptive statistics of factors influencing decisions to buy electric vehicles, the study discovered that, out of the two independent variables, Dealership Factors' mean score (Mean=2.62636676) had the highest degree. Environmental factors come next (Mean=2.505), and personal factors come last (Mean= 2.502). This indicates that the dealership had a greater influence than the other factors on the choice to acquire an electric vehicle (the buying behavior was 2.704). This finding suggests that purchasing decisions about electric car purchases in Ethiopia are highly influenced by buying patterns.
- Additionally, a high link was identified between dealership, personal, and environmental characteristics and buying behavior. These correlations show that Ethiopian consumers' inclination to purchase electric vehicles has grown as a result of an increase in the factors that influence EV purchases.
- At a 95% confidence level, dealership, personal, and environmental variables showed a statistically significant and positive influence on purchasing behavior, as indicated by P-values of less than 0.05 ($P<0.05$). In general, dealership, individual, and environmental factors were the key independent variables that significantly influenced buying behavior.

Personal, environmental, and dealership factors were the significant independent variables that had a statistically positive and significant effect on buying behavior. Based on the research findings, it can be concluded that factors that influence the decision to purchase an electric vehicle can improve the level of buying behavior in Ethiopia. This suggests that enhanced buying behavior would rise when dealership, personal, and environmental factors were taken into account. According to the study, factors that affect the decision to buy an electric car can also affect the decision to buy an electric vehicle in Ethiopia.

5.3. Recommendations

The researcher has provided recommendations to strengthen and boost the use of electric vehicles in Ethiopia based on the findings and conclusions drawn.

1. Focus on improving dealership factors: Since dealership factors were found to have the highest mean score and a predominant influence on purchasing decisions, efforts should be directed towards enhancing the dealership experience for potential electric vehicle buyers in Ethiopia. This can include improving customer service, providing accurate and reliable information, and creating a positive and supportive environment for customers.
2. Address personal factors: Given the statistically significant effect of personal factors on buying behavior, it is important to consider individual preferences, needs, and motivations when promoting electric vehicles. Tailored marketing and educational campaigns can be developed to target specific personal factors that influence the decision-making process, such as cost savings, environmental consciousness, and technological appeal.
3. Pay attention to environmental factors: The research found a significant correlation between environmental factors and buying behavior. To boost the purchase of electric vehicles, it is crucial to raise awareness about the environmental benefits of electric vehicles and promote sustainable transportation options. This can involve highlighting reduced emissions, improved air quality, and the long-term ecological impact of transitioning to electric vehicles.
4. Enhance industry-government collaboration: Establishing a climate that encourages the use of electric vehicles requires cooperation between the government and the automobile sector. This can involve creating infrastructure, incentives, and legislation that encourage electric vehicles, such as charging stations and buyer financial incentives. Stakeholder collaboration can assist remove obstacles and promote Ethiopia's electric vehicle market expansion.
5. Conduct further research: The research has shed light on the determinants of purchasing decisions towards electric vehicles in Ethiopia. However, further research can explore additional factors and variables that may influence buying behavior, such as cultural factors, income levels, and technological advancements. Continued research can provide more insights and help refine strategies for promoting electric vehicles in the Ethiopian market.

Generally, by focusing on improving dealership factors, addressing personal and environmental factors, promoting collaboration between industry and government, and conducting further research, efforts can be made to improve the buying behavior and adoption of electric vehicles in Ethiopia.

5.3.1. Suggestions for Further Research

Future studies should focus on those other contributing factors (might be working comparative study between urban and rural areas, conduct a longitudinal study to track the changes in buying behavior and the determinants of purchasing decisions towards electric vehicles over time. , explore different segments within the potential electric vehicle buyer population in Ethiopia …) and explore its effect on buying behavior. This was beyond the scope of this study.

Future research in this area should also look at how purchasing decisions affect the acceptance of electric vehicles.

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Annex 1

Questioner

1. Personal

Personal Characteristics:

Age: _____

Gender: _____

Marital Status: _____

Number of children (if any): _____

Highest level of education: _____

Occupation: _____

Buying habit:

1. How important are the following factors to you when considering a new car? (Please rate on a scale of 1-5, where 1 is not important and 5 is very important)

	1	2	3	4	5
Environmental friendliness	o	o	o	o	o
Fuel efficiency	o	o	o	o	o
Technological advancement	o	o	o	o	o
Brand reputation	o	o	o	o	o
Luxury and comfort	o	o	o	o	o
Safety features	o	o	o	o	o
Price	o	o	o	o	o
Resale value	o	o	o	o	o

2. How interested are you in adopting new technologies like electric vehicles?

A. Not interested at all,

B. Somewhat interested,

C. Very interested

3. How important is it for you to own a car that reflects your social status?

A. Not important at all,

B. Somewhat important,

C. Very important

4. Personal Factors

Income and Technological Knowledge:

1. What is your monthly household income? _____

A. 10,000-49,000

B. 50001-99,000

C. >=10,000

2. How knowledgeable are you about electric vehicles and their technology?

A. Not knowledgeable at all,

B. Somewhat knowledgeable,

C. Very knowledgeable

Resale Value Aspect:

1. How important is the resale value of a car when you consider purchasing a new one?

A. Not important at all,

B. Somewhat important

C. Very important

2. Are you concerned about the potential lower resale value of EVs compared to traditional cars?

A. Yes

B. No

C. May be

3. How confident are you that the resale value of EVs will improve in the future?

A. Not confident at all,

B. Somewhat confident

C. Very confident

Please share any additional thoughts or concerns you have about the resale value of electric vehicles in Ethiopia. (Open- ended) ……
……
……
……

3. Environmental Factors

Environmental Concerns:

1. How concerned are you about the environmental impact of traditional gasoline-powered vehicles?

A. Not concerned at all,

B. Somewhat concerned

C. Very concerned

2. How willing are you to switch to an electric vehicle to reduce your carbon footprint?

A. Not willing at all,

B. Somewhat willing,

C. Very willing

3. Do you believe electric vehicles are a viable solution to combat climate change?

A. Yes

B. No

C. May be

Climate Change Awareness:

1. How knowledgeable are you about the effects of climate change on Ethiopia?

A. Not knowledgeable at all,

B. Somewhat knowledgeable

C. Very knowledgeable

2. Do you believe climate change is a serious threat that needs immediate action?

A. Yes

B. No

C. Maybe

3. How likely are you to consider environmental factors when making a car purchase decision?

A. Not likely at all,

B. Somewhat likely

C. Very likely

Government Regulation and Incentives:

1. Are you aware of any government regulations or incentives currently available for electric vehicles in Ethiopia?

A. Yes

B. No

2. How important are government incentives in making your decision to purchase an EV?

A. Not important at all

B. Somewhat important

C. Very important

3. What type of government incentives would most encourage you to consider an EV? (Multiple options)

A. Tax breaks

B. Subsidies on purchase price

C. Free charging infrastructure access

D. Others (Please specify) …… …….

Taxation Policy:

1. Do you believe the current taxation policy for EVs in Ethiopia is fair and encouraging adoption?

A. Yes

B. No

C. Maybe

2. How would you feel about government policies that offer lower taxes for electric vehicles compared to traditional cars?

A. Support

B. Oppose

C. Neutral

3. Do you believe lower taxes for EVs would incentivize more people to buy them?

A. Yes

B. No

C. Maybe

Legal and Political Issues:

1. Are you concerned about the legal and political stability in Ethiopia impacting the future of EVs?

A. Yes

B. No

C. Maybe

2. How confident are you that the government will continue to support and promote electric vehicles in the future?

A. Not confident at all

B. Somewhat confident

C. Very confident

3. Do you believe legal and political issues pose a significant barrier to EV adoption in Ethiopia?

A. Yes

B. No

C. Maybe

Technician Availability:

1. Are you concerned about the availability of qualified technicians to service and repair electric vehicles in Ethiopia?

A. Yes

B. No

C. maybe

2. How important is the availability of local technicians when considering an EV purchase?

A. Not important at all

B. Somewhat important

C. Very important

3. Do you believe the government should invest in training more technicians to service EVs?

A. Yes

B. No

C. May be

Myths about EVs:

1. Have you heard any myths or misconceptions about electric vehicles?

A. Yes

B. No

If yes, please share some of the common myths you have heard about EVs. (Open ended) …… …… …… ……

2. Do these myths influence your decision towards purchasing an EV?

A. Yes

B. No

3. Please share any additional thoughts or concerns you have about the factors influencing your decision towards electric vehicles in Ethiopia. (Open-ended) …… ……

4. Dealership factors

Quality of Service:

1. How important is the quality of customer service when you consider purchasing a new car?

A. Not important at all

B. Somewhat important

C. Very important

2. On a scale of 1-5, how would you rate the overall quality of service you expect from an EV dealership

(1 = poor, 5 = excellent)?

1	2	3	4	5
o	o	o	o	o

3. How likely are you to choose an EV dealership based on its reputation for good customer service?

A. Not likely at all

B. Somewhat likely

C. Very likely

Product Knowledge:

1. How important is it for the dealership salespeople to have in-depth knowledge about electric vehicles?

A. Not important at all

B. Somewhat important

C. Very important

2. 2. Have you encountered EV salespeople who seemed knowledgeable about the technology and benefits of EVs?

A. Highly knowledgeable

B. Moderately knowledgeable

C. Not knowledgeable

3. If yes, did their knowledge influence your decision-making process in any way?

A. Positive influence

B. Negative influence

C. No influence

Charging Infrastructure Access:

1. How important is it for an EV dealership to have charging infrastructure available on-site?

A. Not important at all

B. Somewhat important

C. Very important

2. Have you visited any EV dealerships that offer on-site charging facilities?

A. Yes, and it was convenient and beneficial.

B. No, but I would find it useful.

C. No, and I don't think it's necessary.

3. Did the availability of charging infrastructure make the dealership more appealing to you?

A. Yes, it significantly enhanced the appeal.

B. Somewhat, it had a moderate impact on the appeal.

C. No, it did not make a difference in the appeal.

Dealer Capacity (Maintenance and Part Availability):

1. How concerned are you about the availability of maintenance and parts for electric vehicles in Ethiopia?

A. Not concerned at all,

B. Somewhat concerned

C. Very concerned

2. Would you feel more comfortable buying an EV from a dealership with a dedicated service department for electric vehicles?

A. Yes, it would significantly increase my comfort level.

B. Somewhat, it would have a moderate impact on my comfort level.

C. No, it would not make a difference in my comfort level.

3. How important is it for you to know that parts for your EV are readily available in case of repairs?

A. Not important at all

B. Somewhat important

C. Very important

4. Please share any additional thoughts or concerns you have about the role of dealerships in influencing your decision towards electric vehicles in Ethiopia. (Open-ended) ……
……
……