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**DETERMINANTS OF ELECTRIC VEHICLE ADOPTION BY PUBLIC TRANSPORT
COMPANIES IN NAIROBI CITY COUNTY, KENYA.**

ANWAR FORD SIRINGI



**A RESEARCH DISSERTATION SUBMITTED IN PARTIAL FULFILLMENT OF THE
REQUIREMENTS FOR THE MBA DEGREE AT STRATHMORE UNIVERSITY**

STRATHMORE BUSINESS SCHOOL

STRATHMORE UNIVERSITY

NAIROBI, KENYA

MAY 2024

DECLARATION

This research dissertation is my original work and has not been presented for the award of any degree in another university.

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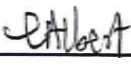
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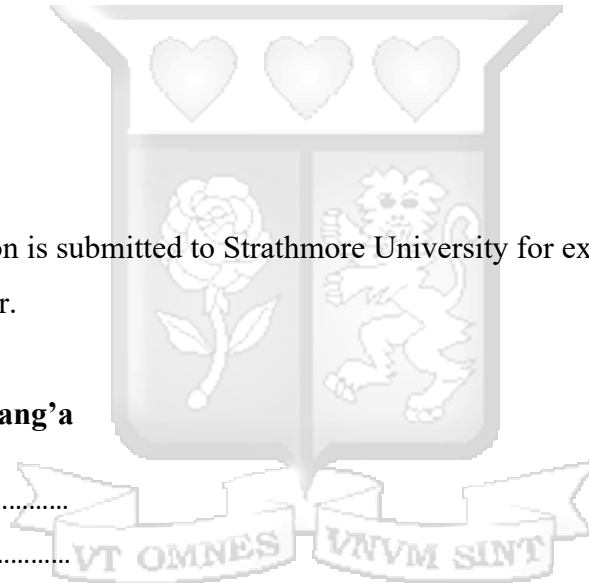
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Approval

This Research Dissertation is submitted to Strathmore University for examination with my approval as the supervisor.

Dr. Albert Ochieng' Abang'a


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ABSTRACT

Even though several studies on the adoption of Electric Vehicles (EVs) have been conducted globally and regionally, there exist significant conceptual, methodological, and contextual inconsistencies identified, necessitating the present study to investigate and bridge these knowledge gaps. A literature search revealed limited studies conducted in Kenya on the factors influencing public transport companies' adoption of EVs in Nairobi City County. Using Kenya's Nairobi County as a case, this study sought to answer the question, "Which factors influence the electric vehicle adoption by public transport companies in Nairobi City County?" The study's specific objectives are to establish the influence of perceived barriers, perceived benefits, and fleet managers' characteristics on electric vehicle adoption (EVA) by public transport companies in Nairobi City County. The study is grounded on three theoretical underpinnings: the unified theory of acceptance and tech use, automobility theory, and actor-network theory. This study adopted the positivism philosophy for quantitative research to fulfill the purpose of the study and inform the descriptive research design. The public transport companies that had not adopted EVs were selected through simple random sampling while the census approach selected the EVs-adopted firms for this study. As such, a sample size of 174 respondents was selected. Self-administered drop-and-pick questionnaires were used to collect data to minimize non-responsiveness. The pilot study included 18 respondents purposively sampled from Kisumu County public transport companies. In this regard, the unit of observation includes the fleet managers and operational staff members of public transport companies. The researcher tested the instruments to meet the reliability and validity threshold. The study used descriptive and inferential statistics. Descriptive statistics analyzed data quantitatively using percentages, means, and standard deviation, while inferential statistics estimated the relationship between the variables. Pearson correlation and multiple regression explained the relationship between the variables. Data was then presented in the form of frequency distribution tables. The study established that perceived barriers, perceived benefits, and fleet managers' personal characteristics were significant predictors of electric vehicle adoption. Particularly, the study findings were that perceived barriers had a strong negative relationship with electric vehicle adoption. Perceived benefits and fleet managers' personal characteristics had a positive relationship and were statistically significant with electric vehicle adoption. Therefore, there is a need to acknowledge the perceived barriers to EV adoption and leverage on the perceived benefits and fleet managers personal characteristics to enhance the rate at which public transport companies accept and use EVs in developing nations such as Kenya. The research focused on the determinants of EV adoption by public transport companies in Kenya's Nairobi County. Therefore this study cannot be generalized to private transport firms in Kenya. To address this limitation, a similar study may be undertaken on private transport companies.

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LIST OF ABBREVIATIONS

EVs	Electric Vehicles
EVA	Electric Vehicle Adoption
MOA	Matatu Operators' Association
NTSA	National Transport and Safety Authority of Kenya
SDG	Sustainable Development Goal
UN	United Nations
UNEP	United Nations Environment Programme
UTAUT	Unified Theory of Acceptance and Use of Technology



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OPERATIONAL DEFINITION OF TERMS

Determinants of EVs adoption : KV et al. (2022) define determinants of EVs adoption as the driving or hindering factors such as environmental and infrastructural constraints and technological advances influencing the EVs acceptance rate. In this study, determinants of EVs adoption are the decisive factors, like government policy, personal characteristics of fleet managers, and perceived barriers and benefits increase or slow down the rate at which public transport companies accept and use electric vehicles.

Electric Vehicles

Tresya (2021) defines electric vehicles (EVs) as cars propelled by one or more traction motors or electric motors powered by electrical energy stored in batteries. Chan and Chau (2014) classify EVs into three depending on their power supplement and propulsion components: pure electrical vehicles (PEV), hybrid electrical vehicles (HEV), and fuel cell electric vehicles (FCEVs). The PEV is propelled ultimately by an electric motor and is fueled entirely by energy from the power storage unit. HEV powertrains combine an electric motor with an engine, and energy sources include both electricity and gasoline or diesel. FCEVs have an electric motor that may be fueled directly or indirectly by hydrogen, methanol, ethanol, or gasoline. In this study, EVs refer to public service vehicles propelled by one or more traction motors or electric motors powered by electrical energy stored in batteries.

Electric Vehicle Adoption

: The consumers' level of EVs acceptance and usage aimed at addressing energy reliance and the greenhouse effect (Jia et al., 2020). The researcher defines EVA as a process by which public transport companies increase the number of electric vehicles on the

roads based on the EVs purchased, acceptance rate, awareness sessions, and the level of operational knowledge.

- Perceived barriers to EV adoption** : Refers to the customers' tendency to resist new technologies and products associated with EVs usage and acceptance (Biresselioglu et al., 2018). In this study, perceived barriers to EVA are factors public transport companies believe militate against the use and acceptance of EVs technology in relation to the purchase price, recharging time, importation tax, importation of second hand cars, and number of available charging stations.
- Perceived benefits of EV adoption** : Simpkins (2023) identifies perceived benefits of EVA as environmental gains attributed to the wide acceptance of EVs. The researcher uses this concept to mean the factors public transport companies believe have a competitive advantage in the use and acceptance of EVs technology in relation to fuel efficiency, power output, service cost, incentives and subsidies, and longevity of EVs.
- Personal characteristics** : Sierzchula (2014) designates individual attributes to preferences and demographic aspects that influence consumers to adopt EVs. For purposes of this study, personal characteristics are attributes such as age, gender, education level, and tastes or preferences that reflect and influence the fleet manager's willingness to purchase and use EVs.

CHAPTER ONE: INTRODUCTION

1.1 Introduction

This chapter provides the background of the determinants of electric vehicle adoption by public transport companies. The background of the study sets the stage for the problem statement. It states the research questions that stem from the study objectives. The study further gives the research's scope and significance of the study.

1.2 Background to the study

The concepts of electric mobility play an integral role in sustainable transport. In line with the global sustainable development goal (SDG) number seven (7) on access to affordable, reliable, sustainable, and modern energy for all, the need for e-mobility and electric vehicle adoption (EVA) has a direct bearing on SDG 3 on sound health and well-being and SDG 11 on sustainable cities and communities (UN report, 2022). The global efforts of linking e-mobility with renewable energy goals need reinforcement to decarbonize the transport sector worldwide. Doubtlessly, EVA technology will aid in combating air pollution (SDG 7), mitigating health-related effects (SDG 3), and promoting sustainable communities (SDG 11). The rapid transformation and advancements of the automotive industry, particularly electric mobility in most parts of the world, have seen the recent adoption of Electric Vehicles (EVs) as far as environmental conservation is concerned (KV et al., 2022). With the skyrocketing fuel prices globally, e-mobility seems a sustainable solution.

1.2.1 Adoption of Electric Vehicles

Electric Vehicle Adoption (EVA) is one of the essential options for addressing energy reliance and the greenhouse effect (Jia et al., 2020). Electric cars use electricity as an alternative to fossil fuels to power transportation infrastructure (Bünger & Michalski, 2018). According to Leurent and Windisch (2017), EVs have a minimal carbon footprint and may utilize renewable energy. It has a smaller local influence on noise levels and air quality. It promotes ecologically responsible driving with less chaotic driving conditions. The battery, however, is expensive and has a limited lifespan in terms of mileage. Producing this electricity from renewable resources like hydro, geothermal, wind, and solar is optimal for reducing overall emissions (Adib et al., 2019). The widespread belief that EVs are more ecologically and economically effective than internal combustion engine vehicles (ICEVs) has led governments throughout the globe to work towards a future in which

ICEVs are gradually phased out of internal combustion engine-powered automobiles and promote EVA (Alotaibi et al., 2022).

The adoption of EVs remains an area of concern for many researchers. Lewis (2021) and Kopestinsky (2022) share their thoughts on EVs adoption status and rates in different countries. As of 2021, the global EVA rate had reached the 52% hit mark of consumers wanting to purchase EVs (Lewis, 2021). The adoption rate of EVs in the US was 42% in 2021, and each state registered an average year-on-year increase of about 32%. In Canada, a 4.6% annual increment in EVs registrations followed the introduction of zero-emission EVs (Kopestinsky, 2022). Globally, there is an increasing trend in EVs sales because the units have grown from over two million in 2018 to a 63% increment on a year-on-year basis. In 2021, the EVA rate was 3% of car sales globally. By 2025, EVA will reach double digits (at least 10%) of total sales for passenger vehicles, increasing to 28% in 2030 and about 60% by 2040 (Lewis, 2021; Kopestinsky, 2022).

Wang et al. (2018) examined the influence of customers' desire to embrace EVs in light of their level of familiarity with the technology, their assessment of its safety, their estimation of its usefulness, and the policies of governments offering financial incentives. Based on questionnaire survey data, the research analyzed 320 Chinese customers. Having a better understanding of EVs has a positive and strong relationship with consumers' attitudes towards, interest in, and motivation to purchase EVs while having a negative and strong relationship with consumers raises fears about these vehicles. Furthermore, the research results suggested that consumers' lack of information regarding EVs and their perception of danger may pose psychological barriers to EVA.

1.2.2 Determinants of Electric Vehicle Adoption

The global perspectives on EVs share several characteristics in developed European countries (Biresselioglu et al., 2018). First, the EVs are high-end, mass-produced private passenger cars operating in urban areas. Another significant characteristic is that EVs are subsidized by the government and are introduced with the expectation that the power industry will produce sufficient electricity to meet the demand. In the European Union, the adoption of EVs primarily focuses on encouraging renewable energy usage and lowering carbon emissions by 80% by 2050. The specific focus of EVA technology in Europe is on lowering building energy consumption, switching to electric cars, and expanding smart power networks. However, there were obstacles to reaching the goal, such as needing more charging stations, financial restraints and cost worries, technical and

operational constraints, knowledge and skills, and a scarcity of power and raw materials (Bireselioglu et al., 2018).

Moreover, thanks to fiscal government incentives, Norway has become the world's top market for pure electric vehicles (Figenbaum, 2017). Further, the widespread adoption of EVs in China's urban areas may be attributed to several factors, including supportive legislation, technological advances, declining prices, an enticing transit system, and hospitable social, economic, and cultural climate circumstances (Wahab & Jiang, 2019). In Spain, whereas EVs reduce pollution, their sales have been low. Higuera-Castillo et al. (2021) investigated the variables predicting the adoption of EVs based on an empirical study on 404 prospective consumers. The findings identified reliability, incentives, and range as reliable EVA predictors.

In India, EVA technology is a work in progress as the government provides a lasting solution to adopting EVs by 2030 (Sriram et al., 2022). The Indian government envisages electrifying all public vehicles and at least 40% of private cars in the next decade. Rezvani et al. (2015) acknowledge the barriers to EVA technopoly in India, including the high purchasing cost and other technological factors like driving range and recharge time (Tahmasseby et al., 2021). Bhat et al. (2022) conceptualized perceived benefits as one of the determinants for EVs adoption. The researchers examined how perceived benefits, and technological and environmental enthusiasm, among other factors, influenced the decision of 675 Indian students to adopt EVs. The result findings indicated a positive relationship between perceived benefits and EVA. Krishnan and Koshy (2021) established that factors like perceived barriers, EVs policies, and ease of use slack off the adoption rate of EVs. Also, personal attributes related to educational level, driving experience, and income affected the adoption of EVs in India. Studies by Rezvani et al. (2015) reveal the critical determinants of EVA as socio-demographics, income, education, existing infrastructure, and others all over the globe. Some of these characteristics are quantitative and relatively standard across countries, while others are qualitative and region-specific. Verma et al. (2020) state that financial incentives and perceived environmental benefits strongly influenced EVs adoption in Bengaluru, India.

In Africa, urban transport is ill-equipped, unreliable, and costly to meet the consumers' mobility needs. However, the recent investment in urban transport by African countries is slowly reducing the emission of chlorofluorocarbons while improving mobility and increasing connectivity

between residential and commercial areas. There is a need for African policymakers to develop a framework for EVA to bring forth sustainable cities and improved quality of urban life (Njogu, 2023). According to Broadbent et al. (2018), many African countries want to quicken the EVA pace to reduce the adverse effects of using fossil fuels for personal motorized transportation, such as greenhouse gas emissions and air and noise pollution, and to boost energy independence. Due to high capital expenditures, battery degeneration, and limited charging infrastructure, Africa's EVA has slowly taken off. Rwanda, for example, has made tremendous progress, initiating an electric vehicle trial project in 2019 (Adjei-Ampomah, 2020). Rwanda commits to being a carbon-free country by 2030 and intends to cut greenhouse gas emissions by 38%. Electric cars are estimated to account for 9% of all potential energy-related emissions reduced under Rwanda's ten-year climate action plan (Ntihinyurwa et al., 2022). South Africa faces socio-economic barriers that stand in the path of EVA (Moeletsi, 2021). Following the introduction of EVs in the South African market in 2013, the EVA rate remains low. Moeletsi's (2021) studies recommended that the private sector and government provide a favorable consumer environment for the adoption of electric vehicles.

Locally, transportation in Kenya is one of the most significant contributors to the greenhouse effect, accounting for more than 25% of all carbon emissions (Broadbent et al., 2018). Heavy-duty vehicles in Kenya account for 41% of carbon emissions (Notter et al., 2018). Qasim and Csaba (2021) observed that EVs continue to create problems with functional efficiency compared to traditional diesel trucks, a significant source of worry for suppliers. Therefore, EVs that run on clean energy are widely regarded as promoting a more sustainable transportation system and are gaining popularity. The Kenyan government recognizes the benefits of EVA. Kenya recently introduced a range of incentives to encourage EVA technology. Common incentives include tax exemptions, grants, subsidies, and low-interest loans. In addition to these financial incentives, the Kenyan government invests in developing charging infrastructure and increasing consumer awareness about electric vehicle benefits. By taking these steps, the government hopes to create the conditions necessary for the widespread adoption of electric vehicles in Kenya (KEBS, 2021). These incentives are designed to reduce the upfront cost of buying EVs, making them more accessible and affordable for consumers (Njogu, 2023).

1.2.3 Public Transport Companies in Nairobi City

The NTSA data indicate that a significant number of public transport companies in Nairobi City County have not adopted EVs to date. Of the 405 registered public transport companies operating in Nairobi, only 8 use electric mobility. These EVs adopted companies are City Hoper, City Star Shuttle, City Tram Shuttle, City Travellers, East Shuttle, Embassava, Metro Trans East Africa Limited, and Super Metro. All the remaining 397 are yet to adopt EVs (NTSA, 2022). A list of the public transport companies (Appendix III) operating in Nairobi City County is available. The study examines the influence of perceived barriers, perceived benefits, and fleet manager's characteristics, and how these determinants influence the adoption of EVs in Kenya's Nairobi City County.

1.3 Problem statement

The transport sector contributes significantly to global warming and climate change in developing nations like Kenya. According to reports by the United Nations Environment Program (UNEP), road transportation in the city is the fastest-growing emitter of greenhouse gases at almost 30%. By 2050, the global vehicle fleet will double with developing countries projected to have over 90% future vehicle growth. According to the Institute for Transportation and Development Policy (ITDP) Africa, Nairobi City is among the top four on the global scale's overall inefficiency in traffic systems (ITDP Africa, 2020). The general public and global environment agencies like UNEP have raised concerns about the high levels of pollution in Nairobi City. Additionally, global gasoline prices continue to skyrocket, a situation that increases transport costs. Nevertheless, the adoption rate of EVs by public transport companies in Nairobi remains very low. To achieve a green transport sector, UNEP (2023) singles out e-mobility as the most sustainable way for reducing greenhouse gas emissions and air pollution.

The Kenyan context has over two million non-EVs and one-and-a-half million two-wheelers. Kenya's capital accounts for the most significant share of non-EVs. As such, Nairobi City County contributes 80 percent of the total carbon emissions annually (UNEP, 2023; Njogu, 2023). Over the past decade, Kenya has experienced an increasing trend in carbon emissions, yet the rate of EVs adoption remains low. Studies by Njogu (2023) depict that Nairobi City County dominates second-hand fossil-fuel vehicles. Kenya spent over 2.6 billion US dollars in 2021 alone on petrol importation. Therefore, to build a sustainable transport network in Nairobi, adopting electric

mobility and reducing the overreliance on fossil fuels is necessary (UNEP, 2023). The faster the EVA in Kenya, the more jobs will be created in the automotive sectors, and the better air quality and environmental protection (Njogu, 2023). The Kenyan government has provided financial incentives for EVs by lowering the import duty to 20% from 30% for petrol and diesel vehicles. However, EVA has been minimal compared to ICEVs vehicles, owing primarily to a need for vehicle charging infrastructure across the country (Adjei-Ampomah, 2020). For EVs, a reliable electric grid network, government regulations encouraging their use, charging stations, maintenance, and after-sale service facilities are needed. There appears to be a challenge in the non-adoption of EVs by public transport companies in Nairobi County. For instance, Dioha et al. (2022) established that EVs require charging every time they reach the end of their range, which is between 200 and 680 kilometers per charge. This study identifies perceived barriers to EVs as a determinant for the adoption of EVs.

There seem to be scanty studies conducted in Kenya on the factors influencing public transport companies' adoption of EVs in Nairobi City County. For instance, the study by Dioha et al. (2022) on facilitating the introduction of EVs to third-world countries examined how EVs can help developing countries meet climate and air quality targets. The current study remains ideal to examine the factors driving the adoption of EVs. Based on the literature reviewed from the background of the study, the researcher examines the influence of perceived barriers, perceived benefits, and fleet managers' characteristics on the adoption of EVs. Therefore this study answers the question, “Which factors influence the adoption of EVs by public transport companies in Nairobi City County?”

1.4 Research Objectives

This section states the main objective and specific objectives of the study.

1.4.1 Main Objective

This study examines the factors influencing the electric vehicle adoption by public transport companies in Nairobi City County.

1.4.2 Specific Objective

The following specific objectives informed the study;

- (i) To identify the perceived barriers to electric vehicle adoption by public transport companies in Nairobi City County.
- (ii) To determine the influence of perceived benefits on electric vehicle adoption by public transport companies in Nairobi City County.
- (iii) To examine the influence of fleet managers' personal characteristics on electric vehicle adoption by public transport companies in Nairobi City County.

1.5 Research Questions

- (i) What is the influence of perceived barriers on electric vehicle adoption by public transport companies in Nairobi City County?
- (ii) How do perceived benefits of electric vehicles influence public transport companies to adopt them in Nairobi City County?
- (iii) To what extent do fleet managers' personal characteristics influence electric vehicle adoption by public transport companies in Nairobi City County?

1.6 Scope of the Study

Several factors influence transport and logistics companies to adopt EVs. This study hinges on the determinants of EVA by public transport companies operating in Nairobi City County. Since Nairobi has the highest number of transport and logistics firms, this study was limited to the registered public transport companies operating in Nairobi City County. This research studied both adopted and non-adopted EVs by public transport companies. The unit of observation were the fleet managers and operational staff in the targeted transport firms. The methodological scope for this study is quantitative. As such, qualitative analysis is beyond the scope of this study. The study was conducted between February and March 2024.

1.7 Significance of the Study

The study findings may inform sound decision-making among the various stakeholders in the transport sector. The following stakeholders could benefit from the current study: the Matatu Owners Association (MOA), the Ministry of Roads, Fleet Managers and Operational Staff in the Public Transport Sector, and future scholars and researchers.

1.7.1 Matatu Owners' Association

The study findings may inform MOA to review and implement effective policies on EVs adoption. This study will also provide insights into the perceived benefits and barriers to EVs adoption by

public transport companies and their associations. The studies may serve the interest of MOA and civil societies such as trade unions, environmental organizations, and other non-governmental organizations. As such, the research findings will encourage transport companies to adopt EVs as an important component of their operations.

1.7.2 Ministry of Roads and Transport

The study findings would guide the policymakers in the Ministry of Roads and Transport to review and update existing laws and regulations of public transport with a clear framework for EVs adoption. Also, this study could provide the public transport industry with baselines to design and implement best practices and policy directions for faster EVs adoption in Kenya. The study will necessitate the Kenyan government and the Ministry of Transport to implement EVs adoption policies under the oversight of the National Transport and Safety Authority of Kenya (NTSA). The NTSA may find the study findings useful in their routine regulation of the public transportation systems in Kenya.

1.7.3 Fleet Managers and Operational Staff in the Public Transport Sector

The fleet managers and operational staff would be better informed about the perceived benefits of and barriers to EVs adoption at their firms. The fleet managers and operational staff will have the requisite knowledge of how to measure the perceived barriers to EVs and the perceived benefits of EVs to increase the adoption rate. The fleet managers could use the study findings to design plausible EVs adoption strategies that minimize barriers and maximize the benefits.

1.7.4 Scholars and Researchers

This study will be of significance to future scholars and researchers from different fields. The findings of this study will contribute to the existing literature on EVs adoption. As such, the research will contribute to the body of knowledge and inform future studies by scholars and researchers on electrification programs in different sectors.

1.8 Chapter Summary

The introductory chapter dwells on the study's background information related to determinants of EVs adoption. It covers the problem statement, purpose, objectives, and research questions. The first chapter also lays out the research's scope and delimitations. Chapter One has also identified the significance of the study to different stakeholders.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

The purpose of this chapter is to review existing literature on the factors determining the adoption of electric vehicles in public transportation to identify the research gaps to permit further research work. The chapter is organized as follows; Section 2.2 discusses the theoretical framework, 2.3 examines the empirical review, 2.4 summarizes the gaps and literature reviewed, 2.5 illustrates the conceptual framework, and 2.6 gives the chapter summary.

2.2 Theoretical Framework

This study discusses three theoretical underpinnings and their relevance to the research objectives. These theories are the automobility theory, the unified theory of acceptance and tech use, and the actor-network theory. Since there is no single comprehensive theory that can explain everything, the study used three theories to approach the study from all angles to achieve the research objectives.

2.2.1 Automobility Theory

John Urry conceptualized the Automobility theory in 2004 (Sagoff, 2008). The theory views the car as a central aspect of modern society, shaping the behavior and mobility of individuals and communities. It emphasizes the influence of the automobile on the urban landscape, the economy, and cultural values and practices (Sagoff, 2008). Automobility theory highlights the complex relationships between transportation, technology, and social structures and how these relationships have contributed to the development of car-dependent societies. This theory also examines the environmental and health impacts of car usage and the unequal access to automobiles and their benefits, creating a divide between those who can own and use cars and those who do not. According to Featherstone (2004), the theory emphasizes the interdependence between the car, infrastructure, and social systems, arguing that they are mutually constitutive and cannot be understood in isolation. The theory highlights how the car has not only changed transportation patterns and mobility but also transformed urban and rural landscapes. Featherman (2021) used the automobility theory in examining the effect of new tech on EVs' perceived risks of adoption.

The automobility theory anchors the perceived barriers to EVA, particularly when understanding the new products at the inception stage. During the inception stage, there is a myriad of misconceptions and perceived barriers to EVs adoption. The new EVs technologies and their

associated challenges in the path of wide acceptance are addressed by this theory. Companies in the transportation and logistics industries need to have a solid understanding of the significance of shifting to EVs.

2.2.2 Unified Theory of Acceptance and Use of Technology

Venkatesh theorized the unified theory of acceptance and use of technology (UTAUT) in 2003. This theory is a hybrid of eight other theories and explains the determinants of individual acceptance and use of technology. The unified theory highlights four critical determinants of acceptance and tech use: social influence, effort expectancy, performance expectancy, and facilitating conditions (Venkatesh et al., 2003). Performance expectancy is the perceived belief that technological use improves performance. Effort expectancy is the perceived ease of use and level of effort required for tech use. Social influence is the impact of other people's opinions on the user's acceptance and tech use. Facilitating conditions refer to supporting mechanisms and resource availability for and accessibility to technology adoption and use (Ahmad, 2015).

Several researchers have used the UTAUT theory. Karjaluoto et al. (2003) researched Northern Finland to determine the influence of mobile services and technology on user perceptions. The most important finding concerned individuals' familiarity with the tools, which was a significant factor in their judgment formation. Curtis (2006) used the same methodology to study non-profit organizations' use of social media in the United States. The study established that companies with strong public relations units are likelier to use social media technologies to achieve their objectives. The unified theory anchors the second objective and provided a comprehensive understanding of technology acceptance and use. Because the unified theory is widely applicable in various fields such as information technology, healthcare, and education, it strongly applies to the latest EVs technology. Therefore, this theory has a direct bearing on the current study. As such, the theory's four critical determinants of acceptance and tech use set the stage for the study's deliberation on factors influencing EVs adoption.

2.2.3 Actor-Network Theory

John Law modeled the Actor-Network Theory in 1992. This theory explains how artifacts, that is, scientific or technological objects, become integrated into society. The proponent of this theory defines artifacts as network nodes that include both humans and devices in interlocking functions. Artifacts are social alliances through which technology is formed and are held together by objects.

This ecosystem that offers the conditions for a technology to succeed comprises the facts, machines, people, and protocols that must be aligned to support technological progress and adoption (Mort & Billington, 2001). The theory shows that electric mobility's technical spread or acceptance is a highly spatial process requiring societal embedding at various scales (Aka, 2019). Further, it posits that there are only players with networks and stresses the complexity of technology growth in local practice (Grin et al., 2010).

Karjaluoto et al. (2003) and Curtis (2006) used the actor-network theory in their studies to examine consumer attributes or characteristics. Curtis (2006) established that females were found to be more receptive to the potential benefits of social media, whereas males demonstrated a higher level of self-assurance when using these platforms. Karjaluoto et al. (2003) used the theory to analyze the individual differences between managers and their firm's banking systems.

The application of actor-network theory relates to the third objective on the fleet managers' personal characteristics because its scope includes the provision of technological advancements as perceived by individual persons and their communities. To the same extent, the theory is a product of technological innovation, advancement, and social construction among people. Therefore, its success and adoption within the public transport sector will depend not only on technical aspects but also on all facets of an individual. The current study uses this theory to examine fleet managers' personal characteristics such as gender, age, and educational level, and how they drive EVs adoption in the research.

2.3 Empirical Review

This section reviews the previous studies based on the study's three objectives; perceived barriers, perceived benefits, and fleet manager's personal characteristics. It also gives a critique to indicate the research gaps.

2.3.1 Perceived Barriers and Electric Vehicle Adoption

The automobility theory supports the relationship between perceived barriers and the adoption of EVs. During the inception stage, consumers' perceived barriers may affect EV adoption. In this study, perceived barriers to EVA are factors public transport companies believe militate against the use and acceptance of EVs technology in relation to the purchase price, recharging time, importation tax, importation of second-hand cars, and number of available charging stations.

Adhikari et al. (2020) researched Nepal to identify and assess the impediments to EVs usage. The study found five impediments: social, technological, policy, fiscal, and monetary aspects. Then, the analytical hierarchical approach was used to compare and rank the impediments from the views of experts. Physical, legal, economic, and technical obstacles were found to be more significant than social barriers. Nonetheless, the absence of charging stations, the substantially higher purchase price of EVs compared to internal combustion automobiles, and the government's weak long-term planning and goal-setting were cited as the top three obstacles to EVs adoption in Nepal. Consistent with these studies is Sriram's (2022) findings that social awareness of EVs, environmental conservation, a limited number of charging infrastructures, EVs performance barriers, and financial constraints are critical EVA influencers.

Galuszka et al. (2021) studies underscore the other researchers. In Dar es Salaam, Kigali, Kisumu, and Nairobi, on the policy level, their studies answer stakeholder constellations for electric mobility and how they attempt to resolve the electric mobility implementation. The study employed two basic approaches: content analysis and a purposive sampling strategy. The study's findings suggested that, despite increasing legislation in Rwanda and Kenya, and ground improvements, a set of financial and technical impediments continues. These include costly initial automobile and infrastructure investment costs and a perceived lack of competition with fossil-fuel cars (Galuszka et al., 2021). These studies form the basis for the current study on perceived barriers to EVA among public transport companies in Kenya's Nairobi City. The present study will use purchase price, recharging time, importation tax, and number of available charging stations to measure the perceived barriers to EVs adoption.

Sovacool et al. (2022) conducted a research study to determine the barriers imposed by three innovations: autonomous autos, electric transportation, and ridesharing and bike sharing in four African cities: Johannesburg (South Africa), Kigali (Rwanda), Lagos (Nigeria), and Nairobi (Kenya). The research subject was developed via an exhaustive and rigorous interdisciplinary literature review. According to the study, the potential advantages of the three technologies exist only when weighed against negative restrictions. No invention was entirely beneficial or detrimental; they all had several dimensions of positive and negative elements. Another observation noted by the researcher was that even though the three advances were assessed separately and independently of one another, there were emergent and substantial linkages between

them. For example, there was a connection between electrification and two-wheelers and between automation and ridesharing. According to the study, hybridization and incrementalism were considered advantageous and desirable for planning and technology adoption.

The gap in Sovacool et al. (2022) studies is that the researchers took a regional approach. The current study adopted a country-specific approach and purely focused on the Kenyan public transport sector for an in-depth analysis of key EVA determinants. The present study also took a different approach. Instead of establishing the relationship between variables, the researcher focused on how aspects of perceived barriers to EVA influence the adoption of EVs. Sovacool et al. (2022) study also found that transportation operators and the associations representing them are considered minor participants in the transition, behind new companies in electronic mobility and governmental authorities. The study presents recommendations addressing gaps that policymakers and stakeholders must bridge to achieve inclusive electric mobility in East African cities.

Kumar and Alok (2020), Archsmith et al. (2022), and Muigua (2022) carried out a research study to evaluate the challenges and prospects connected to the transition from fuel-powered cars to clean energy-powered vehicles. They unanimously agree on pollution as the critical perceived barrier to EVA. For instance, Muigua's (2022) findings single out air pollution as the most significant obstacle facing the transition to electric mobility in the transportation industry in Africa. This industry is one of the leading contributors to air pollution and continues to rely largely on fossil fuels, which are also one of the leading contributors to gas emissions. The study also revealed that the continent witnessed an unparalleled pace of motorization due to rapid urbanization and economic expansion (Muigua, 2022). As a result of this occurrence, the majority of the region's governments cannot make use of technological advances in other sectors to increase fuel economy and cut vehicle emissions. Finally, the study advised that governments, the corporate sector, civic society, and development partners work together on environmental and transportation challenges.

For Africa to keep up with the rest of the world in the transition to electric mobility, the continent should invest in EVs to resolve the pollution dilemma. Based on the theoretical proposition of automobility theory, the context and findings of Adhikari et al. (2020), Muigua (2022), and Sovacool et al. (2022), this study anticipates a negative correlation between perceived barriers and electronic vehicle adoption in Kenya.

2.3.2 Perceived Benefits and Electric Vehicle Adoption

The unified theory of acceptance and tech use supports the relationship between perceived benefits and the adoption of EVs. Simpkins (2023) identifies perceived benefits as environmental gains attributed to the wide acceptance of EVs. The researcher uses this concept to mean the factors public transport companies believe have a competitive advantage in the use and acceptance of EVs technology in relation to fuel efficiency, power output, service cost, incentives and subsidies, and longevity of EVs.

Featherman et al. (2021) reveal that consumers hold divergent beliefs about the benefits and barriers to electric vehicle adoption. The authors modeled the concept of perceived benefits of adopting EV technology. Their studies used the risk-benefit model and the theory of reasoned action to explain how manufacturers' experience and trust minimized the users' risk concerns and maximized their conviction that technological benefits were attainable. Also, the study results showed how firms need novel strategic marketing approaches to increase the demand for adopting new technologies. The present study uses the unified, automobile, and actor-network theories to examine the influence of perceived benefits such as fuel efficiency, power output, service costs, and longevity on EV adoption.

Simpkins's (2023) studies focus on the benefits of EV adoption from a nature conservation perspective. He asserts that firms would prefer EVs to fuel-propelled vehicles because of the perception that they do not have tailpipe emissions. EVs improve air quality, attracting widespread adoption in many countries across the globe for environmental mitigation purposes. The current study identifies this gap and examines the influence of perceived benefits beyond the environmental management context.

Contrary to Simpkins' study, Kumar and Alok (2020) demonstrate that EVs' longevity and perceived low service cost persuade consumers to accept and use EVs in India. Kumar and Alok's studies are consistent with Bhat et al. (2022) results from findings that indicated a positive relationship between perceived benefits and EVA. These studies further corroborate what Archsmith et al. (2022) conclude on the future paths of EVA in America: benefits attributed to climate change belief strongly correlate with EVs adoption patterns.

Aasness and Odeck (2015) performed research to assess the rise in electric car adoption in Norway. Literature research and personal observations of the city of Oslo were used in the study. The study

discovered that many road users buy and use EVs via various economic perks, including exemption from toll costs, purchase tariffs, and authorization to use transit lanes. The survey established that the surge in EVs reduced emissions of harmful gases. The exemption from toll rates is one of several incentives on EVs with negative consequences, including a significant drop in toll income. The marginal external cost of driving EVs was also very close to that of driving a conventional vehicle. The study concluded that the Norwegian strategy should only be replicated by other nations by taking these into account and that incentives for EVs should address repercussions and how electricity is generated.

Setiawan et al. (2022) did a study to determine the efficacy of strategies encouraging EV adoption in Indonesia. The system dynamics approach was used in the study. The study found that tax reduction measures increased EV adoption while charging price incentives did not affect uptake. However, improvements in EVs quality parameters were shown to have a greater impact than any economic strategies included in the study. Based on the research findings, governments should work towards eliminating or significantly reducing levies on EVs. Since the statistics demonstrate that increased driving range and lower manufacturing costs have a stronger influence on increasing the appeal of EVs, future legislation should focus on these areas of development.

Closely related to Setiawan et al. (2022) findings are studies by Egnér and Trosvik (2018), who established the influence of local policy initiatives in Sweden on the number of EVs users. The study analyzed the effect of local policy instruments on the number of battery EVs registered in Swedish towns. The survey showed that Sweden's number of EVs buyers and users was overly low and widely varied across cities. The research found that purchasing battery EVs by the government may be an effective policy instrument. Finally, the research showed that tailoring policy instruments to individual cities and making them well-known may improve their effectiveness.

Srivastava et al. (2022) examined how incentives such as subsidies and differential taxation systems boost EVs market uptake. Models were analyzed using a non-cooperative game-theoretic approach, and results were compared when respondents were subjected to either a uniform or differential tax structure, with or without subsidies. According to the findings, the government implemented either uneven taxes with or without a subsidy or identical taxation with a subsidy, both of which have the potential to maximize social welfare. These three models may provide a

win-win conclusion for increased green sensitivity since the manufacturer's profit, government income, and consumer surplus are all the same. The research indicates that a tax on gasoline vehicles without a subsidy from manufacturers would reduce their numbers on the road. The study also found that levying the same tax on EVs and gasoline cars without manufacturer subsidies would have the highest overall environmental effect. Furthermore, the study found that raising a car's unit environmental impact draws higher costs. The research also shows that increasing the pricing gap between EVs and gasoline cars boosts gasoline-powered vehicle demand while lowering EVA. Wang et al. (2018) studies accord with Srivastava et al. (2022) findings that financial incentive policy influences EVs adoption intentions.

The present study fills the research gap identified by Aasness and Odeck (2015), Kumar and Alok (2020), Featherman et al. (2021), Bhat et al. (2022), and Simpkins (2023). All these researches were conducted in countries outside Africa, such as the United States of America, Norway, and India. This study examines the influence of perceived benefits on EVs adoption in Kenya to increase the replicability of these studies in other African countries. Therefore, based on the theoretical proposition of the unified theory of acceptance, the context and findings of Aasness and Odeck (2015), Kumar and Alok (2020), Featherman et al. (2021), Bhat et al. (2022), and Simpkins (2023), this study anticipates a positive correlation between perceived benefits and electronic vehicle adoption in Kenya.

2.3.3 Fleet Manager's Personal Characteristics and Electric Vehicle Adoption

The application of actor-network theory relates to fleet managers' personal characteristics. Personal characteristics are attributes such as age, gender, education level, and tastes or preferences that reflect and influence the fleet manager's willingness to purchase and use EVs. Several authors have established a link between transport managers' personal characteristics and the adoption of EVs.

Sierzchula's (2014) studies showed the linkage between fleet managers' personal characteristics and EVs purchases. A significant number of transport managers prefer testing new technologies, a characteristic that makes them early adopters of EVs. Javid and Nejat (2017) investigated the adoption of EVs in Delaware Valley. Their studies looked at EVA penetration in 58 counties in California and identified personal attributes such as household income and the highest level of education. According to Javid and Nejat, highly educated fleet managers were more

environmentally conscious and would most likely purchase EVs to avoid carbon emissions. Lashari et al. (2021) concur that highly informed fleet managers are the main EVs consumers who show an early interest in new technologies in South Korea. Other personal characteristics include environmental sensitivity and past owners of conventional hybrid vehicles. Moreover, the strongest EVA predictors were attitudinal attributes of fleet managers and economic and environmental perceptions of EVs adoption. The transport managers' concern about EVs technology negatively impacted the prospective companies' intentions to purchase EVs (Lashari et al., 2021).

Similarly, studies by Corradi et al. (2023) show consistency with Javid and Nejat's (2017) findings. Corradi et al. (2023) found that social status influenced EVs purchases. A significant number of consumers would prefer EVs for social status purposes only. However, the study underscores car drivers, manufacturers, civil societies, and policymakers as strong proponents who actively support technological advancements that suit their interests. Therefore, there is a need to reshape their tastes, preferences, and behavior for change to occur (Corradi et al., 2023). Wang et al. (2018) studies ratify Corradi et al. (2023) research which found that a transport manager's attitude was related to their desire to adopt EVs. That perceived utility had a favorable effect on adoption intention and attitude.

These studies closely relate to the current study's approach as the researcher underscores education level, tastes, and preferences as part of personal characteristics and how they influence the adoption of EVs. Therefore, based on the theoretical proposition of actor-network theory, the context and findings of Corradi et al. (2023), Javid and Nejat (2017), and Wang et al. (2018), this study foresees that fleet managers' personal characteristics are related with the adoption of EVs in Kenya.

2.4 Summary of the Literature Reviewed and Gaps

This section highlights the research gaps and summarizes the literature reviewed. It is divided into two sections; 2.4.1 gaps in research and 2.4.2 summary of the literature reviewed.

2.4.1 Gaps in Research

There exist knowledge gaps identified by the researcher that need to be closed. The researcher identified contextual gaps, conceptual gaps, population research gaps, and methodological gaps as highlighted in table 2.1 below.

2.4.2 Summary of the Literature Reviewed

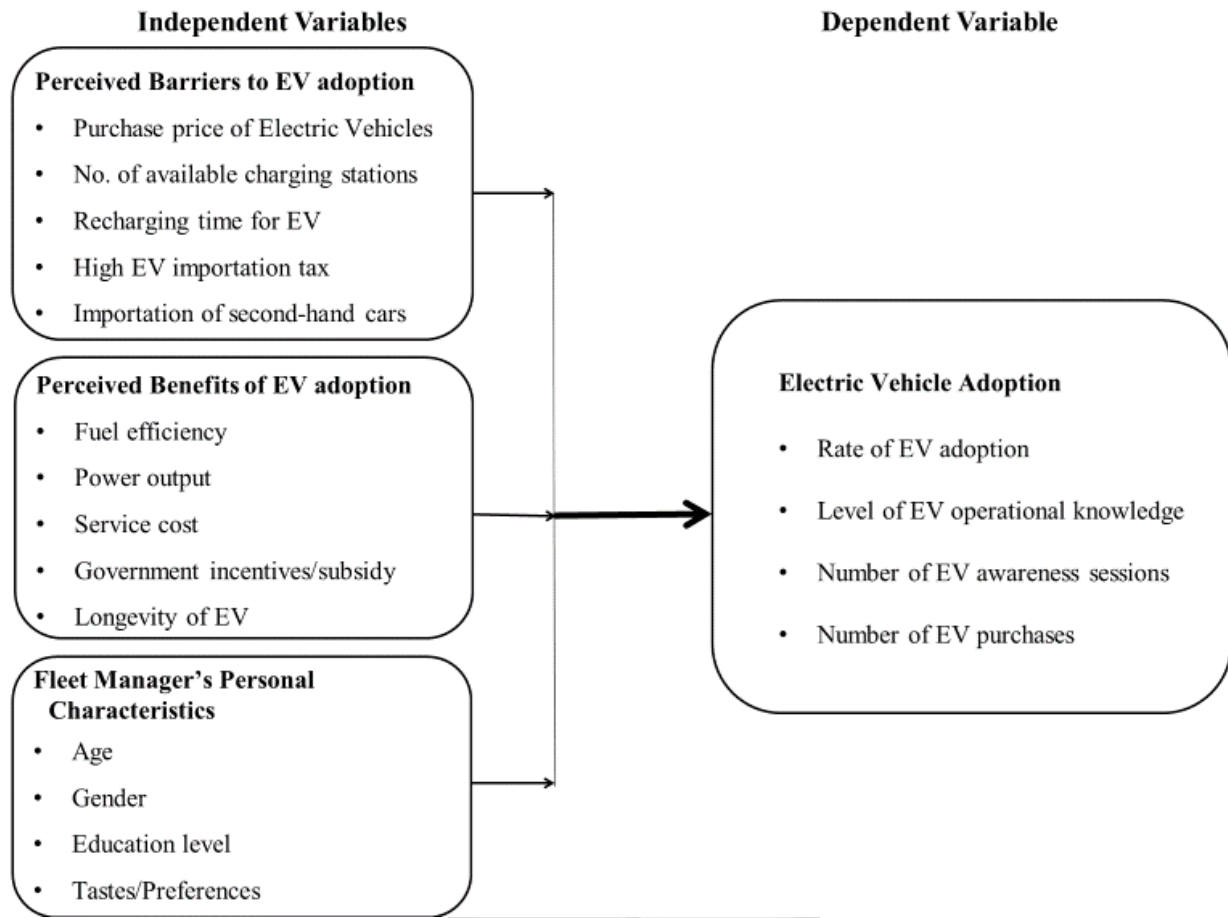
Table 2.1 below summarizes some of the previous studies reviewed as per the study variables.

Table 2.1 Summary of the Knowledge Gaps

Variable	Author (Year)	Title of the Study	Study Findings	Knowledge Gaps	Focus of Current Study
Independent Variable					
Perceived Barriers to EV Adoption	Sriram et al. (2022)	Factors influencing adoption of electric vehicles - A case in India	The study found that social awareness of EVs, environmental conservation, limited charging infrastructure, EV performance barriers, and financial constraints were critical EVA influencers.	There is a contextual gap because the study paid attention to India, and thus its findings may not be applied in the local context due to differences in economic markets and consumer needs. This necessitates the present study to fill the knowledge gap.	The study dwells on the perceived barriers to EV adoption in Nairobi, Kenya, and how they influence public transport companies and individuals to accept EVs.
	Sovacool et al. (2022)	Transitioning to electrified, automated and shared mobility in an African context: A comparative review of Johannesburg, Kigali, Lagos, and Nairobi	The study found that potential advantages of any technology exist only when weighed against negative restrictions. No invention was entirely beneficial or detrimental; they all had several dimensions of positive and negative elements.	The gap in Sovacool et al. (2022) studies is that the researchers took a regional approach in four African capital cities: Johannesburg, Kigali, Lagos, and Nairobi. This limited an in-depth analysis of critical EV adoption determinants in one city, instead focused on comparative analysis.	The current study adopts a country-specific approach and focuses on the Kenyan public transport sector for an in-depth analysis of key EVA determinants.
Perceived Benefits of EV Adoption	Featherman et al. (2021)	The impact of new technologies on consumers' beliefs: Reducing the perceived risks of electric vehicle adoption	Their studies used the risk-benefit model and the theory of reasoned action to explain how manufacturers' experience and trust minimized the users' risk concerns and maximized their conviction that technological benefits were attainable. The study results showed how firms need novel strategic marketing approaches to increase the demand for adopting new technologies.	A conceptual gap exists because of the study used an isolated model to guide the study. There is a need for the proposed study to use a more unified and hybrid model that incorporates all the determinants of EV adoption.	The present study uses the unified, automobility, and actor-network theories to examine the influence of perceived benefits such as fuel efficiency, power output, service costs, and longevity on EV adoption.
	Simpkin (2023)	Benefits of electric vehicle adoption	Firms would prefer EVs to fuel-propelled vehicles because of the perception that they do not have tailpipe emissions. The future paths of EVA benefits attributed to climate change belief strongly correlate with EV adoption patterns.	A conceptual gap exists since the study focused on the benefits of EV adoption from a nature conservation perspective and, out of oversight, missed critical aspects such as EV longevity, service costs, power	The current study acknowledges the role of nature and examines the influence of perceived benefits beyond the environmental management context.

				outputs, and fuel efficiency.	
	Setiawan et al. (2022)	Investigating policies on increasing the adoption of electric vehicles in Indonesia	The authors established that tax reduction measures increased EV adoption while charging price incentives did not affect uptake. However, improvements in EV quality parameters were shown to have a greater impact than any economic strategies included in the study.	A population research gap exists. The main research gap relates to the geographical scope of the study. This study focused on Indonesian cities, implying that the findings may only apply to some local settings.	The study pays attention to the Kenyan government's policies on EVs. Also, the focus shifts to Kenya's capital city and how government policies influence the adoption of EVs.
Fleet Manager's Personal Characteristics	Lashari et al. (2021)	Consumers' Intention to Purchase Electric Vehicles: Influences of User Attitude and Perception	The study found that highly educated individuals were more environmentally conscious and would most likely purchase the EV to avoid carbon emissions. Also, households with high family incomes could afford the relatively costly EVs compared to humble family backgrounds.	Contextual gap - The study paid attention to the educational level and income differentials in South Korea. Conceptual gap- The study failed to establish how other factors like age, gender, tastes, and preferences would influence EV adoption.	The current study will bring in the influence of personal attributes such as age, gender, and user tastes and establish how these factors influence EV adoption in Kenya.
	Javid & Nejat (2017)	A comprehensive model of regional electric vehicle adoption and penetration	The authors found that the strongest EVA predictors were attitudinal attributes and economic and environmental perceptions of EV adoption. An individual concern about the EV technology impacted negatively on the prospective consumer's intentions to purchase EVs	Both contextual and conceptual gaps exist because the study was conducted in Delaware Valley in California and overlooked pertinent attributes like gender and generational differences. Thus, the findings may not be aligned with the EV adoption in Kenya.	The study examines people from different generations and genders and how these attributes inform their decision to accept or refuse EVs.
Dependent Variable					
Electric vehicle adoption	Lewis (2021)	This is where electric vehicle adoption is headed between 2022 and 2025	The researchers found that as of 2021, the global EVA rate had reached the 52% hit mark of consumers wanting to purchase EVs.	A contextual gap exists because the study revolves around adoption rates and shares on global EV adoption up to 2025 hence the need to study the rate at which EVs are adopted locally.	The present study will focus on the EV adoption rates among public transport companies in Kenya.
	Kopestin sky (2022)	Electric Car Statistics In The US And Abroad	The author established that the EVA rate in the US was 42% in 2021, and each state registered an average year-on-year increase of about 32%. Canada had a 4.6% annual increment in EV registrations following the introduction of zero-emission EVs.	Contextual gap- The study is directly related to the rate at which EVs are adopted in Canada and the US. However, its setting differs; hence the need to establish whether the EVA rate cited therein significantly reflects EV adoption in the Kenyan setting.	The study identifies the determinants of EV adoption and examines the four determinants: perceived barriers, perceived benefits, and personal characteristics of fleet managers.

2.5 Conceptual Framework



Source: Researcher (2023)

Figure 2.1 Conceptual framework

2.6 Operationalization of Study Variables

The table below operationalizes the dependent and independent variables for the study.

Table 2.2 Operationalization of Variables

Objective	Variable	Indicators	Types of data analysis	Tools of analysis	Supporting Literature
To examine the factors influencing the electric vehicle adoption by public transport companies in Nairobi City County.	Electric Vehicle Adoption	<ul style="list-style-type: none"> Rate of EV adoption Level of EV operational knowledge Number of EV awareness sessions Number of EV purchases 	<p>Descriptive</p> <p>Inferential</p>	<ul style="list-style-type: none"> Means Standard deviations Percentiles Pearson correlation 	<p>Kopestinsky (2022)</p> <p>Lewis (2021)</p>

To establish the influence of perceived barriers on electric vehicle adoption by public transport companies in Nairobi City County.	Perceived Barriers to EV adoption	<ul style="list-style-type: none"> • Purchase price of Electric Vehicles • No. of available charging stations • Recharging time for Electric Vehicles • High EV importation tax • Importation of second-hand cars 	Descriptive Inferential	<ul style="list-style-type: none"> - Means - Standard deviations - Percentiles - Pearson correlation 	Sriram et al. (2022) Sovacool et al. (2022)
To determine the influence of perceived benefits on electric vehicle adoption by public transport companies in Nairobi City County.	Perceived Benefits of EV adoption	<ul style="list-style-type: none"> • Fuel efficiency • Power output • Service cost • Government incentives/subsidy • Longevity of EVs 	Descriptive Inferential	<ul style="list-style-type: none"> - Means - Standard deviations - Percentiles - Pearson correlation 	Featherman et al. (2021) Setiawan et al. (2022)
To examine the influence of fleet managers' personal characteristics on electric vehicle adoption by public transport companies in Nairobi City County.	Fleet Manager's Personal Characteristics	<ul style="list-style-type: none"> • Age • Gender • Education level • Tastes/Preferences 	Descriptive Inferential	<ul style="list-style-type: none"> - Means - Standard deviations - Percentiles - Pearson correlation 	Javid & Nejat (2017) Lashari et al. (2021)

Source: Researcher (2024)

2.7 Chapter Summary

This section provided the major findings and research gaps of previous studies. It also provides the focus of the current study in filling the methodological, conceptual, contextual, and population gaps. The current study in Nairobi City County identifies these gaps and attempts to fill them by applying the Kenyan context. Also, the empirical studies support the problem statement and study objectives.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter focuses on the methodology that was utilized to successfully conduct a research study on the determinants of EVA by public transport companies in Nairobi City County, Kenya. Chapter three discusses the study's population and sampling techniques. Data collection and analysis methods form part of this section. Also, aspects of research quality and ethical consideration are discussed.

3.2 Research philosophy

According to Creswell (2021), research philosophy refers to the approach and belief to do data collection, analysis, and usage. There are two philosophies used in research, that is, positivism and interpretivism. On the one hand, interpretivism originated from the perceived inadequacies of the positivist research philosophy to close the gaps in social science. Interpretivists observe reality as a subjective phenomenon shaped by the researcher's perceptions and use relatively small samples. This philosophy aligns with the process of researching to gain meaningful insights about the research problem, generate theories, and solve societal problems. On the other hand, the philosophy of positivism came from natural sciences. Positivists focus on the scientific testing of hypotheses to find logical proof derived from statistical analysis. In positivism, researchers observe reality objectively and use large samples to produce quantitative, objective, and precise data (Collis & Hussey, 2014).

For this reason, the study adopts positivist research because it is best for quantitative analysis to establish the relationship between variables. The positivist approach to research is objective and supports the quantitative methods the current study uses. The researcher gained an in-depth understanding of the research, interpret the study findings, and provide solutions to global emissions and skyrocketing fuel prices. As such, the positivist philosophy fulfills the study's purpose in examining the factors influencing EVs adoption by public transport companies. Therefore, the positivism school of thought informed the research design discussed below.

3.3 Research design

This study adopted a descriptive research design. With the descriptive design, the researcher describes the factors influencing the public transport companies to adopt EVs in Kenya's Nairobi City County. According to Kothari (2013), the descriptive survey design is suitable when the

proposed study aims to explain categories, trends, frequencies, and characteristics of the aspects being studied. Descriptive research design answers the how, when, where, and what questions.

3.4 Population

The study population included the public transport companies operating in Nairobi City County. Data from NTSA (2022) show that there are 405 public transport companies operating in Nairobi City County. This study targeted all 405 EVs and non-EVs adopted public transport companies as shown in Table 3.1 below.

Table 3.1 Target Population

Cluster	Population
EVs adopted public transport companies	8
Non-EVs adopted public transport companies	397
Total	405

Source: NTSA (2022)

3.5 Sample design

Since it was not viable to study all 405 companies, the study adopted a simple random sampling approach to pick the respondents from non-adopted EV companies. Sharma (2017) validates simple random sampling as a method that eliminates biases and confounding effects in the sample population and selects a prototypical sample. Of the 397 non-EVs adopted public transport companies, the researcher selected 79, which represents 20% of the target population. A census of all the 8 EVs adopted by public transport companies was added to the sample population. According to Kothari (2013), a representative sample should be at least 10% of the target population.

For every transport company, the study targeted one operational staff member and one fleet manager as respondents. Therefore, the total sample size was 174 employees comprising 87 fleet managers and 87 operational staff members. Table 3.2 shows the summary of the sample population.

Table 3.2 Sample size

Cluster	Population	Sample (20%); Census (100%)	No. of respondents	Sample size
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EVs adopted public transport companies	8	8	2	16
Non-EVs adopted public transport companies	397	79	2	158
Total	405			174

Source: Researcher (2023)

3.6 Data collection methods

The researcher used self-administered drop-and-pick questionnaires to collect data and minimize non-responsiveness. The questionnaires had three sections: A is the Demographic Profile of the Respondents, B is the Determinants of Electric Vehicle Adoption, and C is the Adoption of Electric Vehicles. Questionnaires were considered since they allowed the researchers to collect comprehensive data on intangibles such as respondents' ideas, beliefs, attitudes, and feelings. Kothari (2013) argues that questionnaires are time-saving since they allow the researchers to gather data within a short timeframe when compared to interviews. Thus, the questionnaires collected information from all the participants. Closed-ended questionnaires were issued to allow respondents the freedom to respond to the queries and ease the researcher's analysis of the responses.

3.7 Data analysis

The collected data was sorted, organized, and coded before being keyed into the computer for analysis. The study adopted both inferential and descriptive statistics. Descriptive statistics involved the calculation of means and standard deviation. Inferential statistics formed the basis for regression and correlation analyses. Particularly, the Pearson correlation was used to establish the relationship between the variables. Whereas the electric vehicle adoption (EVA), the dependent variable, is represented by (Y), determinants of EVA, the independent variable, is represented by (X). Therefore, perceived barriers to EV adoption, perceived benefits of EVs adoption, and fleet manager's personal characteristics are represented by X_1 , X_2 , and X_3 , respectively. This ordinal regression model informed inferential statistics:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon ; \text{ where;}$$

Y = electric vehicle adoption

X_1 = perceived barriers to EV adoption

X_2 = perceived benefits of EV adoption

X_3 = fleet manager's personal characteristics

β_0 = constant

$\beta_1, \beta_2, \beta_3$ = Beta Coefficients

ε = the error term

The researcher carried out diagnostic tests to confirm that the assumptions of regression are not violated. As such, the normality, multicollinearity, and homoscedasticity tests for independent variables were conducted.

Normality test is a statistical concept for establishing if a data set follows the normal distribution (Field & Wilcox, 2017). The researcher used a normal probability plot to determine the normality of independent variables. Should the plot diagram fail to form the anticipated bell shape, there would be a violation of normality. As such, the researcher may use an alternate statement instead of a null hypothesis to show that the data set does not follow a normal distribution.

Multicollinearity is the assumption that independent variables are in correlation and need testing to establish their independence (Field & Wilcox, 2017). The researcher conducted a multicollinearity test to determine if the tolerance levels of the independent variables are more than 0.1 and the Variance Inflation Factor (VIF) is less than 10. Field and Wilcox (2017) state that a multicollinearity problem emerges when tolerance levels are below 0.1 and VIF above 10. The researcher will focus on the VIF values and bring them to moderate levels.

Homoscedasticity tests establish the similarity in the error term across all independent variables using a scatterplot. Field and Wilcox (2017) recommend checking the other regression assumptions should a homoscedastic violation occur. The researcher may drop or add variables or modify the model formula to address the violation of homoscedasticity.

3.8 Research quality

The research is said to be of good quality if it provides ethically sound and robust evidence that informs policy-making in the study area. This study conforms to the principles of accountability, transparency, verifiability, and professionalism to ensure that the data sources and study findings

stand up to scrutiny. To maintain the research quality, the researcher conducted the piloting of instruments and establish their reliability and validity (Ary et al., 2018; Coe et al., 2021).

3.8.1 Piloting of Research Instruments

Piloting refers to the process of administering a mini-study to establish the soundness of the research instruments. While piloting may not guarantee success, it betters the study findings. According to Kothari (2013), piloting the research instruments allows researchers to assess the potential for success of the research instruments. The process allows the researchers to establish the efficacy of the sampling, instrumentation, and data collection procedures and to make improvements where gaps are noted. Ary et al. (2018) report that piloting is essential since it helps the researcher establish whether the questions are clear to the respondents and if there is any need for modifications.

The piloting of research instruments was done in Kisumu County because it has a city setting with similar characteristics to the study site. According to Kothari (2013), 10% of the sample size is a good proportion to pilot the research instruments. The piloting, therefore, involved 18 (10.3%) respondents: 9 fleet managers and 9 operational staff members. The 18 respondents were sampled purposively from the public transport companies in Kisumu County.

3.8.2 Validity of Research Instruments

The research instrument must be validated to ensure it aligns with the study objectives. According to Chan and Lay (2018), validity measures the soundness of the content by establishing whether what is being asked in the research instruments is the researcher's intent. In this case, content validity was used to establish the alignment of the research questions with the purpose and objectives of the study. The study used Lawshe's model to establish a content validity ratio for each instrument. The formula is: Content Validity Ratio = $\frac{[N_e - (\frac{N}{2})]}{\frac{N}{2}}$

$$\text{Content Validity Ratio} = \frac{[N_e - (\frac{N}{2})]}{\frac{N}{2}}$$

Where N_e is the number of essentials for each item and N is the number of experts. The values obtained range from -1 which implies a perfect disagreement to +1 which suggests perfect agreement for every question. Values above 0 indicate that more than half of the experts agree that the research instruments effectively measure the desired content (Chan & Lay, 2018). The experts for the analysis was the researcher and two assistant researchers, with the supervisor being the moderator.

3.8.3 Reliability of Research Instruments

The reliability of research instruments was measured using the internal consistency method. The approach measures the degree of agreement between the responses given by the respondents in the pilot study. According to Rose and Johnson (2020), the approach involves using one or a selected set of data to measure the degree to which the responses are consistent. A high level of similarity in the pattern of responses implies that the research instruments are sound, while a variation suggests the need to modify the sets of questions to foster common interpretation by the research participants. Additionally, the reliability was measured using Cronbach's Alpha, a framework to establish the consistency and correlations of the findings from the pilot study. Orodho (2017) states that a research instrument must attain an Alpha exceeding 0.7 to be considered reliable.

The researcher established data reliability for the study using Cronbach's coefficient alpha. Table 3.3 summarizes the reliability test results.

Table 3.3: Reliability Statistics

Reliability Statistics		
Variable	Cronbach's Alpha Based on Standardized Items	Number of Items
Adoption of Electric Vehicles	.704	8
Perceived Barriers to EV adoption	.942	8
Perceived Benefits of EV adoption	.912	8
Fleet managers' personal characteristics	.872	8

Source: Survey Data (2024)

The results from table 3.3 above depict the Cronbach's alpha coefficient greater than 0.7. Hence the research instruments met the reliability threshold for use in the study.

3.9 Ethical Considerations

The principles of confidentiality, anonymity, informed consent, and voluntary participation, guided the researcher during data collection. The researcher got consent from the targeted respondents. According to Quinlan et al. (2019), researchers must inform the targeted population about the need for the research, the possible benefits and risks, and the timing. This information

allows them to agree or disagree to participate in the research. The study aligned with the principle of confidentiality to ensure that the data collected is secured from unauthorized access while also protecting the identity of the respondents (Coe et al., 2021). Thus, the researcher reassured the respondents of not disclosing their identity. The researcher also secured the collected data from unauthorized access until the findings are generated and published.

3.10 Chapter Summary

Chapter three presents the research methods used in the study. It details the research design and target population with a sampling frame, techniques, and size. This section also highlighted the data collection and analysis processes, ethical considerations, and validity and reliability of research instruments.



CHAPTER FOUR: PRESENTATION OF RESEARCH FINDINGS

4.1 Introduction

This chapter presents the study findings on the factors influencing the electric vehicle adoption by public transport companies. The chapter presents the study findings in line with the study objectives. The study examined the factors influencing the electric vehicle adoption by public transport companies in Nairobi City County. Chapter four is organized as follows: response rate, demographic data analysis, testing data reliability, and analysis of descriptive and inferential statistics.

4.2 Response Rate

The questionnaires were used to gather information from the targeted 174 respondents in 87 public transport companies. Two respondents (fleet manager and operational staff) from each of the 87 transport companies were sampled. Of the 174 respondents targeted to fill out the questionnaires, only 16 did not return as shown in Table 4.1 below. The response rate was therefore 90.8%. This was a high return rate for an in-depth analysis as recommended by Glazer et al. (2018) where at least 60.0% of the questionnaires should be filled.

Table 4.1: Response Rate

Response	Frequency	Percentage
Returned	158	90.8
Unreturned	16	9.2
Total	174	100.0

Source: Survey Data (2024)

4.3 Demographic Characteristics of the Respondents

The researcher collected the following demographic information from the respondents: gender, the age range of study participants, the role performed within the public transport company, the number of years worked, and the highest education level. This section describes the relationship between the various demographic characteristics and electric vehicle adoption by public transport companies in Nairobi County.

4.3.1 Distribution of Respondents by Gender

The study sought to find out the gender of all the respondents who took part in the research. The study's findings on the distribution of respondents by gender are shown in Table 4.2.

Table 4.2: Distribution of Respondents by Gender

Gender	Frequency	Percentage
Male	111	70.3
Female	47	29.7
Total	158	100.0

Source: Survey Data (2024)

The results show that 111 (70.3%) of the respondents were male while 47(29.7%) were female. This indicates that the male respondents dominate the positions of fleet managers and operational staff members in the public transport companies in Nairobi City County.

4.3.2 Distribution of Respondents by Age

The study asked the respondents the age brackets within which they fell, and the findings are summarized in Table 4.3 below.

Table 4.3: Distribution of Respondents by Age

Respondent's Age	Frequency	Percentage
20-29 years	21	13.1
30-44 years	104	65.8
45-59 years	19	12.3
60 and above	14	8.8
Total	158	100.0

Source: Survey Data (2024)

The age group with the largest representation among respondents, at 65.8%, was 30-44 years, while the age group with the lowest representation, at 8.8%, was 60 years and above. The results show that fleet managers and operational staff members in the public transport companies are a mix of young, mature, and experienced personnel.

4.3.3 Distribution of Respondents by Education Level

The study asked the respondents working at the public transport companies in Nairobi County about their highest level of education. Table 4.4 shows the findings.

Table 4.4: Distribution of Respondents by Education Level

Education Level	Frequency	Percentage
Basic (primary or high school graduate)	50	31.7
Certificate or Diploma	49	31.0
Bachelor or Undergraduate	40	25.3
Postgraduate	19	12.0
Total	158	100.0

Source: Survey Data (2024)

The finding shows that 68.3% of the respondents had attained at least a certificate or diploma level training while 31.7% had basic education level. The study findings indicate that there is varied attainment of education among the fleet managers and their operational staff in public transport companies in Nairobi County.

4.3.4 Respondents' Roles in Public Transport Companies

The respondents were asked about the positions that they held in the public transport companies in Nairobi County and their responses were as shown in Table 4.5.

Table 4.5: Respondents' Roles in Public Transport Companies

Position	Frequency	Percentage
Fleet Managers	79	50.0
Operational Staff members	79	50.0
Total	158	100.0

Source: Survey Data (2024)

The results showed that an equal number of the respondents comprised the fleet managers and their operational staff. The findings indicate that both the fleet managers and their staff play a critical role in the adoption of EVs public transport companies, hence the need for their balanced representation.

4.3.5 Duration of Service

The study also sought to find out the respondents’ number of years worked in the public transport sector. The summary of the distribution in ranges of years is exhibited in Table 4.6 below.

Table 4.6: Number of Years Worked

Duration of Service	Frequency	Percentage
Less than 3 years	39	24.7
3-5 years	76	48.1
6-10 years	23	14.5
More than 10 years	20	12.7
Total	158	100.0

Source: Survey Data (2024)

According to the findings, 75.3% of respondents had worked in public transport companies for three years or more, whereas 24.7% of respondents had been there for less than 3 years. Given that service duration is a measure of the fleet managers and operational staff's experience in public transport companies, three quarters of the respondents offered more detailed information about the adoption of EVs with precision. The influence of perceived barriers, perceived benefits, and fleet managers’ personal characteristics on the adoption of EVs by public transport companies in Nairobi City County was thus understood by staff members with greater experience.

4.4 Descriptive Statistics

This section analyzes data descriptively based on the study variables.

4.4.1 Perceived Barriers to Electric Vehicle Adoption

In the study, perceived barriers to EV adoption was measured based on purchase price of Electric Vehicles, number of available charging stations, recharging time for Electric Vehicles, EV importation tax, and importation of second-hand cars. The study asked the respondents about how

much more their company would pay if there was an EV with the same functionality as a fuel-powered vehicle. The response is summarized in Table 4.7.

Table 4.7: Frequency of EV Purchase Price by Public Transport Companies

Frequency of reviews	Frequency	Percentage
Will not pay a higher price	80	50.6
Not more than 5-10%	38	24.0
Not more than 10-20%	20	12.7
Not more than 20-30%	11	7.0
Not more than 30-40%	9	5.7
Total	158	100.0

Source: Survey Data (2024)

Half (50.6%) of the public transport companies would not pay a higher price on an EV with the same functionality as the fuel-powered vehicle according to Table 4.7's results, while 49.4% were willing to pay between 10% and 40%.

To analyze the descriptive statistics on perceived barriers to EV by public transport companies in Nairobi County, respondents were asked to rate how they agreed with the following statements as summarized in Table 4.8 below.

Table 4.8: Responses on Perceived Barriers to EV adoption

Statement	Mean	SD
The high purchase price of EVs reduces their adoption by public transport companies in Kenya.	4.35	0.551
If there is an EV with the same functionality as a fuel-powered vehicle, I am willing to pay more for it.	4.11	0.558
The limited number of charging stations limits the adoption of EVs by public transport companies	4.50	0.504

The driving distance between EV charging stations prevents public transport companies from purchasing and using EVs	4.32	0.506
The long recharging time for electric vehicles affects the public transport operations in the Nairobi	3.93	1.012
Recharging time for EVs in Nairobi City is sufficient for public transport companies to make a complete one-way travel or trip	3.81	1.172
A high importation tax on EVs discourages public transport companies to purchase and use electric vehicles	4.86	0.352
The adoption rate of electric vehicles is low because of the cheap and readily available second-hand vehicles	4.41	0.913
Aggregate	4.29	0.696

Source: Survey Data (2024)

More than half (57.9%) of the respondents agreed that the high purchase price of EVs reduced the adoption by public transport companies according to the descriptive analysis of perceived barriers to EV (M=4.35, SD=0.551). Furthermore, 64.9% of respondents concurred that if there was an EV with the same functionality as a fuel-powered vehicle, they would pay more for it. The driving distance between EV charging stations prevents public transport companies from purchasing and using EVs [M=4.32, SD=0.506].

As agreed upon by half of the respondents, the analysis also demonstrated that the limited number of charging stations limits the adoption of EVs by public transport companies. A significant number of public transport companies supported the statement that recharging time for EVs in Nairobi City was sufficient for their firms to make a complete one-way travel or trip as evidenced by the 36.8% of the respondents working the public transport sector. A high importation tax on EVs discouraged public transport companies to purchase and use electric vehicles, as strongly supported by 85.7% of the respondents. According to 59.4% of the fleet managers and their operational staff, the adoption rate of EV remain low because of the cheap and readily available second-hand vehicles (M=4.86, SD=0.352).

With an aggregate mean of 4.29 and a standard deviation of 0.696, it is evident that a significant number of the respondents agreed with the majority of the statements. It follows that perceived barriers stand in the path of the public transport companies to adopt and use EV technology in Kenya’s capital, Nairobi.

4.4.2 Perceived Benefits of Electric Vehicle Adoption

The study used fuel efficiency, power output, service cost, government incentives or subsidy, and longevity of EVs as indicators for perceived benefits of EV adoption. The responses for descriptive statistics are summarized in Table 4.9.

Table 4.9 Responses on Perceived Benefits of EV Adoption

Statement	Mean	SD
Electric cars are more efficient than fuel-powered vehicles	4.40	.495
The adoption of electric vehicles has reduced the use of fossil fuels	4.56	.500
Electric vehicles use less energy to power their wheels compared to the fuel-powered vehicles	4.12	.331
Government subsidies and incentives impact the adoption of electric vehicles by public transport companies in Nairobi County	4.30	.462
The operational costs of electric vehicles discourage public transport companies to use EVs	2.27	1.034
Public transport companies do not adopt EVs because of the perceived barrier associated with service costs	2.79	1.509
The perception that EVs have a relatively short lifespan limits their adoption by public transport companies	4.49	.503
Transport companies feel the driving range of electric vehicles is not sufficient to guarantee travelling on a single charge	2.01	.925
Aggregate	0.720	3.620

Source: Survey Data (2024)

Electric cars are more efficient than fuel-powered vehicles as agreed by 59.6% of the respondents [M=4.4, SD=0.495]. According to the findings, 55.7% of respondents strongly agreed that the adoption of electric vehicles has reduced the use of fossil fuels (M=4.56, SD=0.500). Still, 87.7% of respondents thought EVs used less energy to power their wheels compared to the fuel-powered vehicles. A total of 27.1% strongly disagreed that the operational costs of electric vehicles discouraged public transport companies to use EVs. However, 45.5% of the respondents in public transport companies fully agreed that they did not adopt EVs because of the perceived barrier associated with service costs. While 51.4% of the respondents agreed to the statement, “the perception that EVs have a relatively short lifespan limits their adoption by public transport companies”, the same number of respondents disagreed that the EVs driving range was not sufficient to guarantee travelling on a single charge.

The results in Table 4.11 yielded a standard deviation of 0.720 and an average mean of 3.62. This shows that, overall, responses to all of the statements tended to be neutral, although some respondents strongly agreed and disagreed with particular statements. The standard deviation of 0.72, which was slightly above the average, showed that there were some variations in the responses to the different statements.

4.4.3 Fleet Managers’ Personal Characteristics

To measure the fleet managers’ personal characteristics, the study participants were requested to indicate their level of agreement regarding age, gender, education level, and tastes or preferences. The findings are summarized in Table 4.10 below.

Table 4.10: Responses on Fleet Managers’ Personal Characteristics

Statement	Mean	SD
Age affects the adoption of electric vehicles	3.89	.748
Young fleet managers are likely to influence their companies to purchase electric vehicles as compared to the their older counterparts	4.64	.483
Gender influences the adoption of electric vehicles	3.36	.993

Male fleet managers are more likely to influence their companies to purchase electric vehicles than women	2.30	.981
The education level of fleet managers influences the adoption of electric vehicles by public transport companies	2.33	.631
Fleet managers with higher education are more environmentally aware of EV benefits than their basic education counterparts	2.05	.692
Fleet managers' tastes affect the adoption of EVs in the public transportation sector	1.70	.801
If a fleet manager has a preference for electric vehicles, he or she is likely to persuade the company to embrace their usage	4.51	.504
Aggregate	3.10	0.729

Source: Survey Data (2024)

From Table 4.10 above, 54.4% of respondents agreed that an individual's age of fleet managers and their operational staff affects the adoption of electric vehicles (M=3.89, SD=0.748). More than half (51.4%) agreed that gender plays a role in EV adoption [M=3.36, SD = 0.993]. Additionally, 64.3% strongly agreed [M=4.64, SD=0.483] that young fleet managers were likely to influence their companies to purchase electric vehicles as compared to their older counterparts while 40.4% disagreed that male fleet managers are more likely to influence their companies to purchase electric vehicles than women [M=2.30, SD=0.981]. Furthermore, 47.4% of respondents disagreed that fleet managers' tastes affect the adoption of EVs in the public transportation, and 50.0% disagreed that the education level of fleet managers influences the adoption of EVs by public transport companies [M=2.33, SD=0.61]. A significant number of respondents (50.9%) strongly agreed that fleet managers who preferred EVs were likely to persuade their transport companies to embrace their usage (M=4.51, SD=0.504).

Additionally, the descriptive analysis produced a standard deviation of 0.729 and an aggregate mean of 3.10. These findings suggest that there were no significant differences in the responses regarding fleet managers' personal characteristics, as indicated by the Standard Deviation.

4.4.4 Adoption of Electric Vehicles

To analyze the adoption of electric vehicles, the researcher measured the dependent variable based on the rate of EV adoption, level of EV operational knowledge, number of EV awareness sessions, and number of EV purchases. Respondents were requested to rate how they agreed with the following statements based on the adoption of electric vehicles. The results are displayed in Table 4.11.

Table 4.11 Responses on Adoption of Electric Vehicles

Statement	Mean	SD
The rate of EV adoption by my transport company is growing	4.21	.647
My company continues to purchase and register electric vehicles	1.83	.798
The level of operational knowledge by fleet managers of public transport firms is sufficient for the use of electric vehicles	1.61	.597
A significant number of public transport drivers are aware of how an electric operates	1.21	.562
The company conducts a significant number of EV awareness sessions	4.00	.802
Our drivers and staff have attended adequate training sessions on electric vehicles	4.70	.462
My company has never purchased any electric vehicles since their invention	3.88	.964
The transport company I work for has adequate number of electric vehicles in use	2.05	.789
Aggregate	2.94	.703

Source: Survey Data (2024)

Findings from Table 4.11 showed that 87.7% of the respondents disagreed and strongly opposed the statement that the rate of EV adoption by their transport companies was growing [M=4.21, SD=0.647]. Concerning the notion that public transport companies continue to purchase and register electric vehicles, half of the respondents disagreed [M=1.83, SD=0.798]. Similarly, 50% of the respondents disagreed that the level of operational knowledge by fleet managers of public transport companies was sufficient for the use of EVs. Additionally, 85.7% of the respondents strongly disagreed that a significant number of public transport drivers were aware of how an EV operates [M=1.21, SD=0.562]. Also, 70.2% agreed that their companies conducted significant number awareness sessions related to EVs [M=4.00, SD=0.802] and the same number of respondents were of the same mind that the drivers and staff had attended adequate training sessions on EVs [M=4.70, SD=0.462]. A significant 57.9% of the respondents agreed that public transport companies has not purchased EVs since their invention [M=3.88, SD=0.964]. To further support the need for EV adoption, 63.2% of the respondents strongly disagreed that transport companies had adequate electric vehicles in use [M=2.05, SD=0.789].

A combined mean and standard deviation of 2.94 and 0.703, respectively, were also produced by the results. According to these values, the average responses indicated that the rate of EV adoption by public transport companies remained low with a significant number of respondents agreeing and disagreeing to the statements.

4.5 Inferential Statistics

Inferential statistics formed the basis for correlation analysis. The Pearson correlation was used to establish the relationship between the dependent variable (electric vehicle adoption) and independent variables (perceived barriers to EV adoption, perceived benefits of EV adoption, and fleet managers' personal characteristics).

4.5.1 Correlation Analysis

The study employed Pearson correlation analysis to investigate the degree of the linear relationship between the dependent and independent variables. Table 4.12 below illustrates the results.

Table 4.12 Pearson Correlation Analysis

		Perceived Barriers to EV adoption	Perceived Benefits of EV adoption	Fleet managers' personal characteristics	Electric Vehicle Adoption
Perceived Barriers to EV adoption	Pearson	1	.884**	.978**	-.959**
	Correlation				
	Sig. (2-tailed)		.000	.000	.000
	N	158	158	158	158
Perceived Benefits of EV adoption	Pearson	.884**	1	.897**	.954**
	Correlation				
	Sig. (2-tailed)	.000		.000	.000
	N	158	158	158	158
Fleet managers' personal characteristics	Pearson	.978**	.897**	1	.976**
	Correlation				
	Sig. (2-tailed)	.000	.000		.000
	N	158	158	158	158
Electric Vehicle Adoption	Pearson	-.959**	.954**	.976**	1
	Correlation				
	Sig. (2-tailed)	.000	.000	.000	
	N	158	158	158	158

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

Source: Survey Data (2024)

Table 4.12 above shows that there exists a negative relationship ($r=-0.959$, $p=0.000$) between perceived barriers and electric vehicle adoption by public transport companies. Perceived benefits and fleet managers' personal characteristics showed a positive relationship with electric vehicle adoption.

4.5.2 Diagnostic Tests

Diagnostic tests were carried out to assess if the data met the assumption of regression. The researcher performed normality, multicollinearity, and homoscedasticity tests to explore the study variables. Each of these diagnostic tests is explained below. The normality test showed a normal distribution of independent variables in the regression model. The P-P plot below indicates the normal distribution.

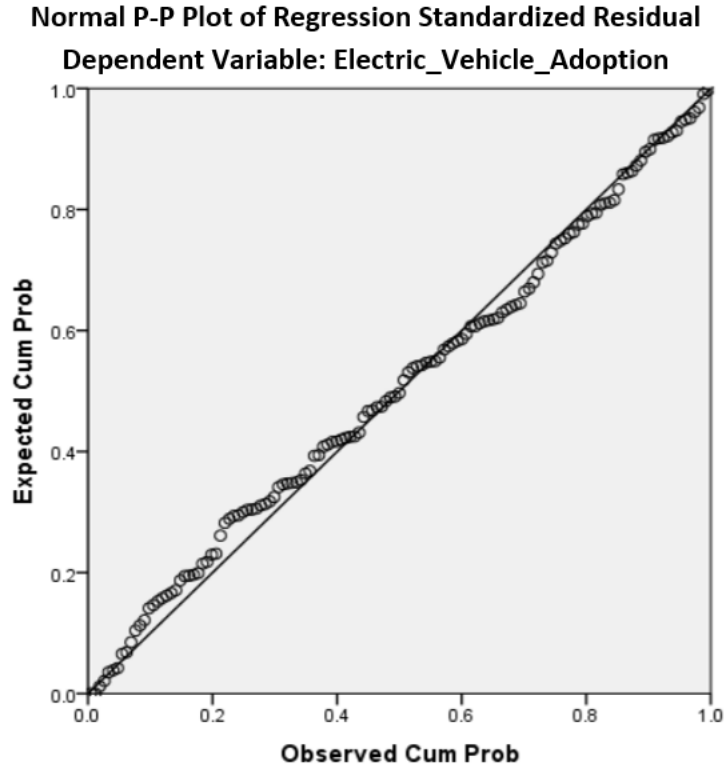


Figure 4.1 P-P plot for normality test
Source: Survey Data (2024)

Table 4.13 Multicollinearity Tests

The multicollinearity tests for the independent variables are shown in Table 4.14 below.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.014	.169		.084	.933		
Perceived Barriers to EV adoption	.086	.071	.100	1.223	.223	.267	3.743
Perceived Benefits of EV adoption	.282	.099	.297	2.850	.005	.164	6.082
Fleet managers' personal characteristics	.234	.094	.202	2.489	.014	.271	3.693

a. Dependent Variable: Electric_Vehicle_Adoption

Source: Survey Data (2024)

Table 4.13 above indicates that perceived barriers to EV adoption, perceived benefits of EV adoption, and fleet managers' personal characteristics have tolerance levels greater than 0.1 and VIF of less than 10 indicating that the assumptions were met. According to Field and Wilcox (2017), VIF values of more than 10 and tolerance values below 0.1 indicate a violation of multicollinearity.

Homoscedasticity tests established the similarity in the error term across all independent variables using a scatterplot. The data is homoscedastic, as seen by the scatter plot of the residuals below, proving that the assumptions were upheld.

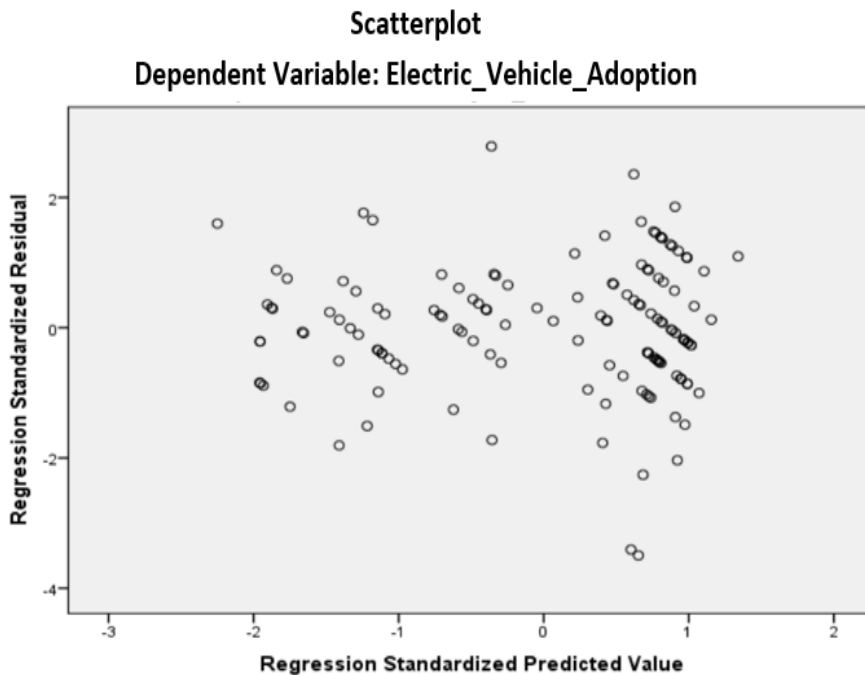


Figure 4.2 Scatter plot for homoscedasticity test
Source: Survey Data (2024)

4.5.3 Multiple Linear Regression Analysis

The researcher performed multiple regression analyses to establish how the predictor variables influenced electric vehicle adoption. Average scores of determinants of EV adoption were used as the independent variables while mean scores of electric vehicle adoption were used as the dependent variable. The following null hypotheses were tested using the regression model:

H_{01} : Perceived barriers to EV adoption is not a statistically significant predictor of electric vehicle adoption by public transport companies in Nairobi City County, Kenya.

H₀₂: Perceived benefits of EV adoption is not a statistically significant predictor of electric vehicle adoption by public transport companies in Nairobi City County, Kenya.

H₀₃: Fleet managers' personal characteristics is not a statistically significant predictor of electric vehicle adoption by public transport companies in Nairobi City County, Kenya.

Table 4.14 below shows the results of multiple regression analysis which examined the impact of perceived barriers to EV adoption, perceived benefits of EV adoption, and fleet managers' personal characteristics on electric vehicle adoption by public transport companies.

Table 4.14 Model Summary

Model Summary									
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	Change Statistics			
						F Change	df1	df2	Sig. F Change
1	.991 ^a	.983	.981	.071	.983	742.950	4	52	.000

a. Predictors: (Constant), perceived barriers, perceived benefits, fleet managers' personal characteristics

Source: Survey Data (2024)

The results from Table 4.14 show that the coefficient of correlation R was 0.991. The study therefore concluded that the determinants of EV adoption had a statistically significant influence on the electric vehicle adoption by public transport companies as confirmed by a p-value of 0.000 < 0.05. The adjusted R square, R²=0.981 indicates that 98.1% change in electric vehicle adoption is explained by the variables in the model under this study, that is, perceived barriers to EV adoption, perceived benefits of EV adoption, and fleet managers' personal characteristics. The remaining 1.9% can be explained by other factors that have not been accounted for in this study.

Table 4.15 Analysis of Variance (ANOVA)

ANOVA ^a						
Model		Sum of Squares	Df	Mean Square	F	Sig.
1	Regression	56.543	4	14.136	1028.178	.000 ^b
	Residual	3.806	220	.017		
	Total	60.349	224	14.153		

a. Dependent Variable: Electric Vehicle Adoption

b. Predictors: (Constant), perceived barriers, perceived benefits, fleet managers' personal characteristics

Source: Survey Data (2024)

Table 4.15 indicates that the regression model is statistically significant. This implies that perceived barriers, perceived benefits, and fleet managers' personal characteristics have a combined influence on the electric vehicle adoption ($F= 1028.178, p= 0.000$). This shows that the model is a good fit for predicting the factors influencing EV adoption by public transport companies in Nairobi City County. Since the p-value of 0.000 is less than 0.05 (the acceptable critical value) the model is confirmed as statistically significant to explain the factors influencing the adoption of EVs.

The study further used regression coefficients to determine the effect of determinants of EV adoption on electric vehicle adoption by public transport companies. The coefficients of regressions are shown in Table 4.16.

Table 4.16 Coefficients of Regression Model

Regression Coefficients						
Model		Unstandardized Coefficients		Standardized Coefficients		
		B	Std. Error	Beta	t	Sig.
1	(Constant)	-.041	.127		-.327	.745
	Perceived Barriers	.377	.074	.451	5.098	.000
	Perceived Benefits	.240	.064	.262	3.771	.000
	Fleet managers' personal characteristics	.265	.128	.253	2.064	.044

a. Dependent Variable: Electric Vehicle Adoption

Source: Survey Data (2024)

Table 4.18 Summary of Hypotheses Testing

Hypothesis	Coefficient	P value	Results	Remarks
H ₀₁ : Perceived barriers to EV adoption is not a statistically significant predictor of electric	0.377	0.000	Significant	Reject H ₀₁

vehicle adoption by public transport companies in Nairobi City County, Kenya.

H ₀₂ : Perceived benefits of EV adoption is not a statistically significant predictor of electric vehicle adoption by public transport companies in Nairobi City County, Kenya.	0.240	0.000	Significant	Reject H ₀₂
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H ₀₃ : Fleet managers' personal characteristics is not a statistically significant predictor of electric vehicle adoption by public transport companies in Nairobi City County, Kenya.	0.265	0.044	Significant	Reject H ₀₃
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Source: Survey Data (2024)

Tables 4.16 and 4.17 illustrate the summary of the hypotheses and the coefficients of perceived barriers, perceived benefits, and fleet managers' personal characteristics as predictors of electric vehicle adoption. The analysis above shows that perceived barriers ($\beta = 0.377$, $p = 0.000$), perceived benefits ($\beta = 0.240$, $p = 0.000$), and fleet managers' personal characteristics ($\beta = 0.265$, $p = 0.044$) are significant predictors of electric vehicle adoption.

The coefficient of regression in Table 4.14 informed the equation below.

$Y = -.041 + 0.377X_1 + 0.24X_2 + 0.265X_3$, where; Y = Electric Vehicle Adoption, X₁ = Perceived Barriers to EV adoption, X₂ = Perceived Benefits of EV adoption, and X₃ = Fleet Managers' Personal Characteristics

4.6 Chapter Summary

The chapter has summarized the findings of this study. It has presented the responses on the influence of perceived barriers, perceived benefits, and fleet managers' personal characteristics on electric vehicle adoption by public transport companies. This chapter has also presented data in tables. The next chapter further discusses the results by tying the study findings to the literature review.

CHAPTER FIVE: SUMMARY, DISCUSSION, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study findings on the influence of perceived barriers, perceived benefits, and fleet managers' characteristics on electric vehicle adoption by public transport companies in Nairobi City County. Chapter Five also provides recommendations and conclusions based on the research findings. This chapter further suggests future research on the topic of study.

5.2 Summary of the Findings

The study sought to establish the factors influencing electric vehicle adoption by public transport companies. This study specifically examined the influence of perceived barriers, perceived benefits, and fleet managers' characteristics on electric vehicle adoption by public transport companies in Nairobi City County. The summary of the findings is presented in line with the research objectives as follows:

The first objective of the study was to identify the perceived barriers to electric vehicle adoption by public transport companies in Nairobi City County. A Pearson correlation analysis indicated a negative relationship between perceived barriers and electric vehicle adoption by public transport companies. Regression analysis demonstrated that perceived barriers was a significant predictor of electric vehicle adoption.

The second objective was to determine the influence of perceived benefits on electric vehicle adoption by public transport companies in Nairobi City County. A Pearson correlation analysis indicated that perceived benefits had a strong positive positive and statistically significant relationship with electric vehicle adoption. Regression analysis demonstrated that perceived benefits was a statistically significant predictor of EV adoption.

The third objective was to examine the influence of fleet managers' personal characteristics on electric vehicle adoption by public transport companies in Nairobi City County. Fleet managers' personal characteristics had a very strong positive relationship with the EV adoption. Regression analysis confirmed that fleet managers' personal characteristics was also a statistically significant predictor of EV adoption.

5.3 Discussion of Findings

This section presents the study results. It discusses the findings by making a comparison to the literature reviewed in Chapter Two. As such, the researcher ties the study findings to the literature review.

5.3.1 Perceived Barriers to Electric Vehicle Adoption

The study results established that perceived barriers was a significant predictor of electric vehicle adoption and had a negative relationship. The results of this study are consistent with Galuszka et al. (2021) in Dar es Salaam, Kigali, Kisumu, and Nairobi. The researchers established that despite increasing legislation in these countries, a set of financial and technical impediments continues to slow down the EV adoption rate. Some of the EV adoption barriers according to Galuszka and other researchers include costly initial automobile and infrastructure investment costs and a perceived lack of competition with fossil-fuel cars.

Another study that aligns with this research finding include Sovacool et al. (2022) who determined the barriers imposed by three innovations: autonomous autos, electric transportation, and ridesharing and bike sharing in four African cities: Johannesburg (South Africa), Kigali (Rwanda), Lagos (Nigeria), and Nairobi (Kenya). Sovacool and other researchers deduced that barriers to EV adoption are significant negative influencers to EVA.

The research findings also mirror Kumar and Alok (2020), Archsmith et al. (2022), and Muigua (2022) studies. The researchers evaluated the challenges and prospects connected to the transition from fuel-powered cars to clean energy-powered vehicles. They unanimously agreed that barriers to EV adoption slow down the rate at which transport companies accept and use EVs.

5.3.2 Perceived Benefits of Electric Vehicle Adoption

Perceived benefits had a strong positive and statistically significant relationship with electric vehicle adoption. The findings align with Muigua (2022) results that perceived benefits strongly increased the adoption rate of EVs because of transition from fossil fuel-based transport to clean energy vehicles. The findings also corroborate Simpkins (2023) conclusions that perceived benefits increased the rate of EV adoption by transport companies because of the environmental gains attributed to the wide acceptance of EVs.

Featherman (2021) also supports the results that perceived benefits have a direct bearing on the rate at which EVs are adopted because these factors offer a competitive advantage in the use and acceptance of EVs technology in relation to fuel efficiency, power output, service cost, incentives and subsidies, and longevity of EVs. These findings further corroborate the assertions made by Setiawan et al. (2022) who did a study to determine the efficacy of strategies encouraging EV adoption in Indonesia. The study found that tax reduction measures increased EV adoption. The research indicated that a tax on gasoline vehicles without a subsidy from manufacturers would reduce their numbers on the road. Wang et al. (2018) studies and Srivastava et al. (2022) findings accord with the study results that financial incentive policy influences EVs adoption intentions.

5.3.3 Fleet Managers' Personal Characteristics

Fleet managers' personal characteristics had a very strong positive relationship with the EV adoption. These findings are consistent with Lashari et al. (2021) and Javid and Nejat (2017). The researchers concluded that the management plays a central role in the acceptance and use of EV technology at their transport and logistic firms. Fleet managers are the key decision makers and hence their personal characteristics is an integral EVA determinant. Lashari et al.'s (2021) study findings revealed that personal characters of the fleet managers affect the management decision to adopt EVs. As such, highly educated operational staff in transport companies and their fleet managers were more environmentally conscious and would most likely purchase the EV to avoid carbon emissions. Javid and Nevat (2017) study supports the study findings that attitudinal attributes and economic and environmental perceptions of EV adoption are greater EVA influencers.

5.4 Recommendations

There is a need to acknowledge the perceived barriers to EV adoption for a faster adoption rate in Kenya. As such, the transition from conventional vehicles to EVs calls for more ambitious policy guidelines and directions in the public transport sector. The policy directions could be around emission regulations for public transport vehicles and mandate for zero-emission vehicle. However, these ambitious policy directions will only be meaningful if the government puts the necessary EV infrastructure in place to alleviate the perceived barriers to electric vehicle adoption.

The study recommends stakeholders in the public transport sector to leverage on the perceived benefits of EV adoption. There is a need for concerted efforts between public transport operators

and county and national governments in hitting the EV accelerator to increase the adoption rate. Forming alliances or joint ventures with manufacturers, technology, and grid businesses may accelerate the EV adoption rate.

The study further recommends the National Transport and Safety Authority (NTSA) to build the capacity of fleet managers in public transport companies. Since fleet managers are the main decision makers in the public transport sector, the NTSA needs to tailor appropriate capacity building programs to increase the EV adoption rate. When the fleet managers are well trained and informed about EVs, they are most likely to influence the transport firms' decision to adopt EVs.

5.5 Limitation of the Study

The research focused on the determinants of EV adoption by public transport companies in Kenya's Nairobi County. Therefore, this study cannot be generalized to private transport firms in Kenya. To address this limitation, a similar study may be undertaken on private transport companies.

5.6 Suggestions for Future Studies

This study was conducted on determinants of EV adoption by public transport companies in Kenya's capital, Nairobi. A similar study may be undertaken on private transport companies and digital taxi firms targeting uber, bolt, yego mobility, little, among others. The findings from these studies would increase the generalization of determinants of EV adoption by public and private transport firms.

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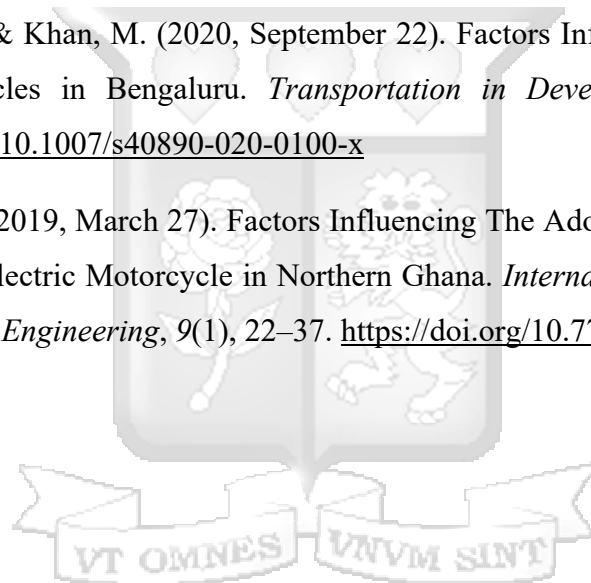
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APPENDICES

Appendix I: Consent Letter

Ford Anwar Siringi,
P.O. BOX 42391-00100,
NAIROBI.

20th August 2023.

Dear Respondent,

RE: REQUEST FOR PARTICIPATION IN RESEARCH DATA COLLECTION

I write to request your participation in my research. I am pursuing a Master of Business Administration at Strathmore University. The research dwells on the determinants of electric vehicle adoption by public transport companies in Nairobi City County, Kenya. I am humbly requesting you be part of this study because your participation and responses are the determining factors for the success of this research. As such, I will greatly appreciate your participation. The information you provide shall be treated in strict confidence and privacy. In this regard, your responses shall be utilized for academic purposes only.

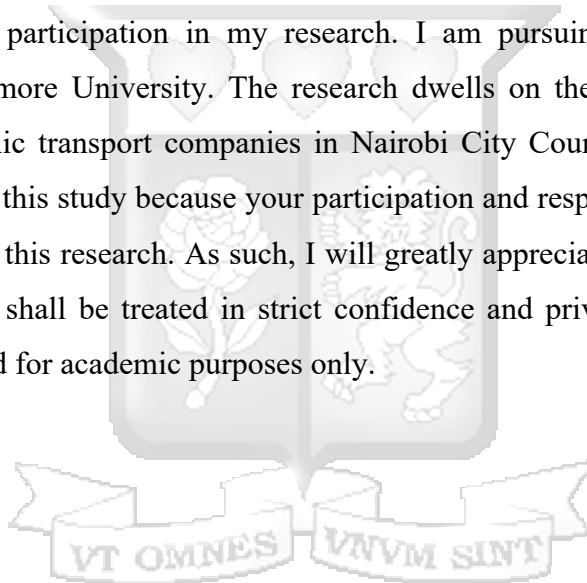
Sincerely,

.....

Ford Anwar Siringi

Cell Phone: 0715951931

E-mail: fordanwar@ymail.com



Appendix II: Research Questionnaire

Kindly respond to every question on this questionnaire by indicating a tick (✓) appropriately in the spaces provided. There is no need of writing your name or that of your company on this questionnaire.

SECTION A: DEMOGRAPHIC PROFILE OF THE RESPONDENTS

1. State your age bracket.
 - 20-29 years []
 - 30-44 years []
 - 45-59 years []
 - Above 60 years []
 - Prefer not to answer []
2. What is your gender?
 - Male [] Female [] Prefer not to answer []
3. Indicate your position in the public transport company. Tick appropriately
 - Fleet manager [] Staff member []
4. What is your highest education level?
 - Basic Level (Primary or High School Graduate) []
 - Certificate or Diploma Holder []
 - Bachelor or Undergraduate Level []
 - Postgraduate []
5. How long is your duration of service?
 - Less than 3 years [] 3 - 5 years [] 6 - 10 years [] More than 10 years []

SECTION B: DETERMINANTS OF ELECTRIC VEHICLE ADOPTION

This section of the questionnaire has three parts; one, two, and three..

Part 1: Perceived Barriers to Electric Vehicle (EV) Adoption

6. If there is an EV with more or less the same functionality as a fuel-powered vehicle, how much more is your company willing to pay for it?
 - Will not pay a higher price
 - Not more than 5-10%

- Not more than 10-20%
- Not more than 20-30%
- Not more than 30-40%

7. On a scale of 1-5, kindly rate how you agree or disagree with the following statements concerning perceived barriers to EV adoption

(Key: 5= strongly agree, 4= agree, 3= neutral, 2= disagree 1= strongly disagree)

Statement	1	2	3	4	5
The high purchase price of EVs reduces their adoption by public transport companies in Kenya.					
If there is an EV with more or less the same functionality as a fuel-powered vehicle, I am willing to pay more for it.					
The limited number of charging stations limits the adoption of EVs by public transport companies					
The driving distance between EV charging stations prevents public transport companies from purchasing and using EVs					
The long recharging time for electric vehicles affects the public transport operations in the Nairobi					
Recharging time for EVs in Nairobi City is sufficient for public transport companies to make a complete one-way travel or trip					
A high importation tax on EVs discourages public transport companies to purchase and use electric vehicles					
The adoption rate of electric vehicles is low because of the cheap and readily available second-hand vehicles					

Part 2: Perceived Benefits of Electric Vehicle (EV) Adoption

8. On a scale of 1-5, please rate how you agree or disagree with the following statements regarding the perceived benefits of EVs.

(Key: 5= strongly agree, 4= agree, 3= neutral, 2= disagree 1= strongly disagree)

Statement	1	2	3	4	5
Electric cars are more efficient than fuel-powered vehicles					
The adoption of electric vehicles has reduced the use of fossil fuels					
Electric vehicles use less energy to power their wheels compared to the fuel-powered vehicles					
Government subsidies and incentives impact the adoption of electric vehicles by public transport companies in Nairobi County					

The operational costs of electric vehicles discourage public transport companies to use EVs					
Public transport companies do not adopt EVs because of the perceived barrier associated with service costs					
The perception that EVs have a relatively short lifespan limits their adoption by public transport companies					
Transport companies feel the driving range of electric vehicles is not sufficient to guarantee travelling on a single charge					

Part 3: Fleet Manager's Personal Characteristics and EV Adoption

9. On a scale of 1-5, kindly rate how you agree or disagree with the following statements regarding the influence of fleet managers' personal characteristics on the adoption of electric vehicles.

(Key: 5= strongly agree, 4= agree, 3= neutral, 2= disagree 1= strongly disagree)

Statement	1	2	3	4	5
Age affects the adoption of electric vehicles					
Young fleet managers are likely to influence their companies to purchase electric vehicles as compared to their older counterparts					
Gender influences the adoption of electric vehicles					
Male fleet managers are more likely to influence their companies to purchase electric vehicles than women					
The education level of fleet managers influences the adoption of electric vehicles by public transport companies					
Fleet managers with higher education are more environmentally aware of EV benefits than their basic education counterparts					
Fleet managers' tastes affect the adoption of EVs in the public transportation sector					
If a fleet manager has a preference for electric vehicles, he or she is likely to persuade the company to embrace their usage					

10. Describe other ways in which the fleet manager's personal characteristics influence the electric vehicle adoption by public transport companies.....

SECTION C: ADOPTION OF ELECTRIC VEHICLES

11. Does your company currently own an electric car?

Yes [] No [] Planning to purchase it soon []

12. If your response to 11 above is NO, proceed to 14. If YES, does your company consider owning an electric vehicle an advantage over owning fuel-powered vehicles?

- Definitely
- Probably
- Possibly
- Probably Not
- Definitely Not

13. How frequent does your company use the electric vehicle(s)?

- Always []
- Very often []
- Sometimes []
- Rarely []
- Never []

14. On a scale of 1-5, kindly rate how you agree or disagree with the following statements regarding the adoption of EVs by public transport companies in Nairobi City County.

(Key: 5= strongly agree, 4= agree, 3= neutral, 2= disagree 1= strongly disagree)

Statement	1	2	3	4	5
The rate of EV adoption by my transport company is growing					
My company continues to purchase and register electric vehicles					
The level of operational knowledge by fleet managers of public transport companies is sufficient for the use of electric vehicles					
A significant number of public transport drivers are aware of how an electric operates					
The company conducts a significant number of EV awareness sessions					
Our drivers and staff have attended adequate training sessions on electric vehicles					
My organization has never purchased any electric vehicles since their invention					
The transport company has adequate electric vehicles in use					

Appendix III: List of Public Transport Companies Operating in Nairobi City County

	REGISTERED PUBLIC TRANSPORT COMPANIES OPERATING IN NAIROBI CITY COUNTY	EVs Adoption Status
1	CITY HOPPER LIMITED	YES
2	CITY STAR SHUTTLE LIMITED	YES
3	CITY TRAM SHUTTLE LTD	YES
4	CITY TRAVELLERS SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	YES
5	EAST SHUTTLE	YES
6	EMBASSAVA COOPERATIVE SAVINGS AND CREDIT SOCIETY LTD	YES
7	METROTRANS EAST AFRICA LIMITED	YES
8	SUPER METRO LIMITED	YES
9	(2009) MARUTI UNITED SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
10	12C TRANSPORT SACCO LTD	NO
11	2B TRAVELLERS SACCO LTD	NO
12	2K-NN SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED/NGORIKA LINE TRAVELLERS COMPANY LIMITED	NO
13	2KR ROUTE 105 MULTIPURPOSE COOPERATIVE SOCIETY LIMITED	NO
14	2KW SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
15	2NK SACCO SOCIETY LIMITED	NO
16	2TS SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
17	3KEN SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
18	8B SACCO SAVINGS AND CREDIT COOPERATIVE SOCIETY LTD	NO
19	AJAWAAB TRANS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
20	AKILLA TRANSPORTERS COMPANY LIMITED	NO
21	ALDANA TRAVELLERS SACCO	NO
22	ALSOPS TRAVELLERS SERVICE LTD	NO
23	ARRIVA COACH LTD	NO
24	ASTRABELL LIMITED	NO
25	BABA DOGO 25 TRAVELLERS SACCO	NO
26	BAHAMA SITA TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
27	BAKAKI 101 TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
28	BANANA HILL MATATU SACCO LTD	NO
29	BEADS SHUTTLE LIMITED	NO
30	BENJO(K) LTD	NO
31	BLISS AND PRINCE COMPANY LIMITED	NO
32	BLUELINE SAFARIS SHUTTLE	NO
33	BLUEMARKS SHUTTLES SACCO LTD.	NO
34	BOMET TRANSPORT SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
35	BOMET TRAVELLERS SACCO	NO
36	BUNGOMA TRANSPORTERS SACCO LTD	NO
37	BURETI EXPRESS SACCO LTD	NO
38	BURNT FOREST TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
39	BURUBURU 58 TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
40	CBET SACCO	NO
41	CENTRAL LINE SAVINGS & CREDIT CO-OPERATIVE SOCIETY LIMITED	NO

42	CHAMBERLINE SERVICES LIMITED	NO
43	CHANIA EXECUTIVE COOL LTD	NO
44	CHANIA GENESIS LTD	NO
45	CHANIA KIBWEZI TRAVELLERS SACCO LTD	NO
46	CHANIA TRAVELLERS SACCO	NO
47	CHEETAH TRAVELLERS SAVINGS AND CREDIT COOPERATIVE SOCIETY	NO
48	CLASSIC LUXURY SHUTTLE LIMITED	NO
49	CLASSIC PELICAN SACCO LIMITED	NO
50	CLASSIC SHUTTLE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
51	CLIMAX COACHES LIMITED	NO
52	COAST BUS (MOMBASA)LIMITED	NO
53	COMFORT SAFARIS SACCO	NO
54	COMLINES SACCO LIMITED	NO
55	COMPLIANT MANAGEMENT COMPANY LIMITED	NO
56	COSY TRAVELLERS LTD	NO
57	CROSSLAND TRAVELLERS LIMITED	NO
58	CROWN BUS SERVICE LTD	NO
59	DABUMATO COMMUTER SERVICE SAVINGS & CREDIT CO-OPERATIVE SOCIETY LTD	NO
60	DAIMA CONNECTIONS LTD	NO
61	DAKIKI MATATU OWNERS SACCO	NO
62	DANDORA USAFIRI TRAVELLERS SACCO	NO
63	DATIMA TRAVELLERS TRANSPORT SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
64	DIX-HULT MATATU OWNER SACCO	NO
65	EASTERN BYPASS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
66	EASTERN BYPASS TRAVELLERS COMPANY LIMITED	NO
67	EASTLANDS EAGLES LIMITED	NO
68	EASTLEIGH ROUTE SACCO	NO
69	EASY COACH LTD	NO
70	ECOSA TRAVELLERS SACCO	NO
71	EGESA SHUTTLE SACCO	NO
72	ELDO-MET SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
73	ELDORET CROSS ROAD INVESTMENT CO-OPERATIVE SOCIETY LIMITED	NO
74	ELDORET EXPRESS LIMITED	NO
75	ELDORET SHUTTLE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
76	ELDORET VICTORY SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
77	ELEVENTH HOUR TRANSPORT SACCO	NO
78	EMUKI COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
79	ERUKI COMMUTER SERVICE LIMITED	NO
80	ESTATES CONNECTION LIMITED	NO
81	EVERBEST	NO
82	EXPRESS CONNECTIONS LTD	NO
83	FAMWENA ANKUMA SACCO LTD	NO
84	FARASI TRAVELLERS SACCO LTD	NO
85	FASTRACK UNITED AND CREDIT COOPERATIVE SOCIETY	NO

86	FIG KOMBA	NO
87	FINLAY LINE COOP SACCO LTD	NO
88	FIVE FRIENDS INVESTMENT COMPANY LTD	NO
89	FIVE STAR SERVICES SACCO	NO
90	FORWARD TRAVELLERS SACCO LTD	NO
91	FOUR NT COOPERATIVE SAVING AND CREDIT SOCIETY LTD	NO
92	FOURTY FOUR SACCO	NO
93	FRANCO RIRUMA TRAVELLERS SACCO LTD	NO
94	FREESTYLE CONNECTION LTD	NO
95	G.M.T SACCO LTD	NO
96	GANAKI MULTI PURPOSE COOP SOCIETY	NO
97	GARISSA COACH LIMITED	NO
98	GATANGA TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
99	GATUNDU TRAVELLERS SACCO	NO
100	GESARATE TRADE LINKS COMPANY LTD	NO
101	GINYALI COOPERATIVE SAVINGS & CREDIT SOCIETY LTD	NO
102	GITHIGA TRAVELLERS SACCO	NO
103	GITHURAI 45 SACCO	NO
104	GREAT NYANZA TRAVELLERS SACCO	NO
105	GREATRIFT EXPRESS SHUTTLE SERVICES LIMITED	NO
106	GREENLINE COMPANY LIMITED	NO
107	GUTON KENYA ENTERPRICES LIMITED	NO
108	HANNOVER COMMERCIAL ENTERPRISES LTD	NO
109	HIGHRISE KIBERA SACCO	NO
110	HIMOSA TRAVELLERS SACCO	NO
111	HOME SACCO	NO
112	HURUMA 46 SAVINGS AND CREDIT CO-OP SOCIETY LTD	NO
113	HURUMA MATATU SACCO SOCIETY LIMITED	NO
114	HURUMA MINI-BUS SACCO LTD	NO
115	IMPACT SHUTTLE LIMITED	NO
116	INAGI TRAVELLERS SACCO LTD	NO
117	INANA SEVEN SEATERS SHUTTLE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
118	INDIMA (NJE) SACCO	NO
119	INTER COUNTIES TRAVELLERS SACCO	NO
120	INTER COUNTY EXPRESS LTD	NO
121	INTER-COUNTY TRAVELLERS SACCO	NO
122	ISIME MATATU OPERATORS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY	NO
123	ITHANGA TRAVELLERS SACCO	NO
124	JESMAT TRAVELLERS CO-OPRATIVE	NO
125	JONSAGA FLATS SACCO	NO
126	K64 SAVING AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
127	KADANA TRAVELLERS INVESTMENTS COMPANY LIMITED	NO
128	KAKA TRAVELLERS SACCO LIMITED	NO
129	KAM TRANSPORTERS SACCO LTD	NO

130	KAMANA SAVINGS AND CREDIT COOPERATIVE SOCIETY LTD	NO
131	KAMUKI TRAVELLERS SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
132	KAMUNA SACCO LIMITED	NO
133	KANGAROO SHUTTLE SERVICES LIMITED	NO
134	KANGEMA TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
135	KANGEMI MATATU OWNERS SACCO	NO
136	KANI TRANSPORT SACCO SAVINGS AND CREDIT SOCIETY LIMITED	NO
137	KARIOBANGI MATATU OWNERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
138	KAROMBU TRAVELLERS SACCO LTD	NO
139	KARURI COMMUTERS SERVICES SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
140	KASBOWA SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
141	KASESE TRAVELLERS LIMITED	NO
142	KAWANGWARE MATATU SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
143	KAYO-LINE GROUP COMPANY LIMITED.	NO
144	KAZANA TRAVELLERS SERVICES LIMITED	NO
145	KENYA BUS SERVICE MANAGEMENT LIMITED	NO
146	KETNNO SAVINGS & CREDIT COOPERATIVE SOCIETY LTD	NO
147	KIAMBU MARAFIKI SACCO LTD	NO
148	KIBERA MATATU OWNERS COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
149	KIGUMO TRAVELLERS CO-OPERATIVE SAVINGS & CREDIT SOCIETY LIMITED	NO
150	KIJABE LINE SACCO	NO
151	KILELE SHUTTLES LIMITED	NO
152	KILGORIS KLASSIC SACCO LTD	NO
153	KILIMAMBOGO TRAVELLERS SACCO	NO
154	KILLETON COMMUTERS SERVICES SAVINGS AND CREDIT COOPERATIVE LTD	NO
155	KIMMA SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
156	KINATHI SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
157	KINATWA CO-OPERATIVE SACCO SOCIETY LIMITED	NO
158	KINYANA TRAVELLERS SACCO	NO
159	KIRAGI TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
160	KISUMU CLASSIC CO. LIMITED	NO
161	KITALE SHUTTLE COMPANY LIMITED	NO
162	KITENGELA MINIBUS SACCO(KIMISA)	NO
163	KIU INVESTMENT SACCO	NO
164	KIWALIRU SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
165	KIWANJA LINE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
166	KIZALI TRAVELLERS LIMITED	NO
167	KNRT SAVINGS & CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
168	KOBUJOI SHUTTLE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
169	KOLLEN TRAVELLERS SACCO LTD.	NO
170	KSMT SACCO LTD	NO
171	KUKENA SACCO SOCIETY LIMITED	NO
172	LAKENYA TRANSPORT SACCO LTD	NO
173	LANKANA SACCO SOCIETY LIMITED	NO

174	LATEMA 22 TRAVELLERS SACCO	NO
175	LIKAMBU MATATU SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
176	LIKANA ROUTE 114/115 MATATU CO-OPERATIVE SOCIETY LTD	NO
177	LINA SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
178	LINGANA SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
179	LIRA LINE SACCO SOCIETY LTD	NO
180	LOPHA MULTIPURPOSE CO-OPERATIVE SOCIETY	NO
181	LOWLANDS TRAVELLERS	NO
182	LUCKY BABA DOGO TRAVELLERS SACCO LTD	NO
183	LUCKY TRANSPORTERS COMPANY	NO
184	LUMINOUS SHUTTLES LIMITED	NO
185	LUXURY SHUTTLES & TRAVELLERS LTD	NO
186	MACHAKOS PUBLIC TRANSPORTERS SACCO SOCIETY LTD	NO
187	MADIWA MATATU OWNERS SACCO	NO
188	MAKANA SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
189	MAKATA SACCO	NO
190	MAKOS SACCO	NO
191	MAKUENI TRANSPORTERS SACCO	NO
192	MAKUYU TRAVELLERS SACOO LTD	NO
193	MAMIKA SACCO LIMITED	NO
194	MANATWA SACCO	NO
195	MANCHESTER TRAVELLERS COACH LTD	NO
196	MANGA NISSAN TEAM SACCO LTD	NO
197	MANGU LINE SACCO	NO
198	MANMO SACCO	NO
199	MARIMBA TRAVELLERS SACCO	NO
200	MASABA LINE SERVICES SACCO LTD	NO
201	MASH EAST AFRICA LIMITED	NO
202	MAT TWO FRIENDS LTD	NO
203	MATAARA TRAVELLERS SACCO	NO
204	MATHOME WATERGATE LIMITED	NO
205	MATUNDA(FRUITS) BUS SERVICES	NO
206	MAVEROUS SHUTTLE LIMITED	NO
207	MBUKINYA SUCCESS (K) LTD	NO
208	MEGARIDER MANAGEMENT LIMITED	NO
209	MEISO NISSAN OPERATORS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
210	MEKINA MATATU SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
211	MENYA SERVICES SACCO LIMITED	NO
212	MERU NISSAN OPERATORS COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
213	MITUNGUU NISSAN SAVINGS & CREDIT COOPERATIVE SOCIETY LTD	NO
214	MIZIZI INVESTMENT TEAM SACCO LTD	NO
215	MNC SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
216	MNGN SACCO LTD	NO
217	MNK SACCO SOCIETY LTD	NO

218	MODERN COAST EXPRESS LIMITED	NO
219	MOGOTIO SERVICES LIMITED	NO
220	MOLINE SAFARIS LIMITED	NO
221	MOLO CLASSIC SACCO SOCIETY LTD	NO
222	MOLO GROUP SERVICES SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
223	MOLOLINE SERVICES LIMITED	NO
224	MOONLIGHT COACH COMPANY LTD	NO
225	MOYALE RAHA TRANSPORTERS COMPANY LIMITED	NO
226	MSAFARA SACCO SOCIETY LTD	NO
227	MTN SACCO LTD	NO
228	MUIGANA SACCO	NO
229	MUKANYEKI SHUTTLES COMPANY LIMITED	NO
230	MUNA SUPREME SHUTTLE	NO
231	MURANG'A SHUTTLE SERVICES LIMITED	NO
232	MWAKAMO TRADING CO LIMITED	NO
233	MWAKI TRAVELLERS SACCO SOCIETY LTD	NO
234	MWAMBA TRAVELLERS SACCO	NO
235	MWIKI PSV SACCO	NO
236	MWIKI SUPER SHUTTLE MANAGEMENT COMPANY LIMITED	NO
237	MWIKINA NISSAN SAVING AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
238	MWINGI TRAVELLERS	NO
239	MWIRONA SACCO LTD	NO
240	M-YOUNG TRAVELLERS SACCO	NO
241	NABOKA TRAVELLERS SACCO	NO
242	NAEKANA ROUTE 134 CO-OPERATIVE SAVINGS & CREDIT SOCIETY LTD	NO
243	NAGIRU 145 SACCO	NO
244	NAIROBI FRIENDS TRAVELLERS SOCIETY	NO
245	NAIROBI KIRU LINE SERVICES LTD	NO
246	NAIROBI NAKURU KIKUYU SHUTTLE LIMITED	NO
247	NAIROBI PRESTIGE BUS SHUTTLE LTD	NO
248	NAIROBI SHUTTLE LTD	NO
249	NAIROBI-WESTERN-CLASSIC SACCO	NO
250	NAIVASHA SOUTH LAKE CO-OPERATIVE SAVING AND CREDIT SOCIETY LTD	NO
251	NAIVASHA TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
252	NAKAM SACCO SOCIETY LIMITED	NO
253	NAKAMATA SAVINGS AND CREDIT COOPERATIVE SOCIETY LTD	NO
254	NAKASKI TRANSPORT SAVINGS CREDIT SACCO LTD	NO
255	NAKATHI TRAVELLERS SACCO LIMITED	NO
256	NAKILI SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
257	NAKIMU CLASSIC	NO
258	NAKIMU CLASSIC TRAVELLERS SACCO	NO
259	NAKINDUKA MATATU SACCO	NO
260	NAKINI COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
261	NAKISA SACCO SOCIETY LTD	NO

262	NAKONN SACCO LTD	NO
263	NAKURU PRECIOUS SERVICES /VICTORIA TRANSPORT SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED)	NO
264	NAKWE TRAVELLERS SACCO SOCIETY LTD	NO
265	NAMAKI	NO
266	NAMASCCO SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
267	NAMOKI TRAVELLERS SAVING AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
268	NAMUGA COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
269	NAMUKIKA COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
270	NANAISIO SHUTTLE SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
271	NANGKIS MATATU SACCO	NO
272	NAROK LINE SERVICE	NO
273	NARUGI DEVELOPMENT SACCO LTD	NO
274	NARUNYA SACCO SOCIETY	NO
275	NASAMKI SACCO	NO
276	NAWAKU SACCO	NO
277	NAWASUKU SACCO	NO
278	NAZIGI SACCO	NO
279	NEEMA TRAVELLERS AGENCY LTD	NO
280	NENO SACCO SOCIETY LTD	NO
281	NEW CLASSIC TRAVELLERS SACCO LIMITED	NO
282	NEW LOWLANDS TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
283	NEW NAIROBI-NAIVASHA UNITED SERVICES LIMITED	NO
284	NG'ARUA LINE COOPERATIVE SAVINGS AND CREDIT SOCIETY	NO
285	NGOKANA SACCO SOCIETY LIMITED	NO
286	NGONG TRAVELLERS SACCO	NO
287	NGUMO-LINE SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
288	NGUSO TRAVELLERS SACCO	NO
289	NJORO LINE SERVICES LIMITED	NO
290	NJOROLINE OPERATORS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
291	NKIKAN SACCO SOCIETY LIMITED	NO
292	NMOA SACCO SOCIETY LIMITED	NO
293	NORTHERN E. COACH TRAVELLERS SACCO LTD	NO
294	NORTHWAYS SERVICES SACCO LIMITED	NO
295	NTK TRAVEL SERVICES MULTIPURPOSE SACCO	NO
296	NUCLEUR INVESTMENTS LTD	NO
297	NUNGUNI EXPRESS TRAVELLERS SACCO	NO
298	NYAKATI MATATU INVESTORS SACCO SOCIETY LIMITED	NO
299	NYAMAKIMALINE SERVICES LIMITED	NO
300	NYANZA SHUTTLE & EWINGS COACHES SACCO LTD	NO
301	NYAWINDA SAVINGS & CREDIT CO-OPERATIVE SOCIETY LTD	NO
302	NYENA CO-OPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
303	NYENYA CO-OPERATIVE SAVINGS & CREDIT SOCIETY LTD	NO
304	NYERI SHUTTLE LIMITED	NO
305	OBAMANA TRAVELLERS SACCO	NO

306	OLENGURUONE NISSAN SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
307	OL'KALOU LINER SACCO SOCIETY LIMITED	NO
308	ONGATA LINE TRANSPORTERS	NO
309	ONGATA RONGAI BUS SERVICES	NO
310	OROKISE SACCO LTD	NO
311	OUTER CIRCLE SACCO	NO
312	OUTREACH TRAVEL	NO
313	PAGAMWA TULAGA LIMITED	NO
314	PAKIN ALICIA SACCO SOCIETY LTD	NO
315	PEJA TRAVELLERS LIMITED	NO
316	PEJO TECH COMPANY LTD	NO
317	PINPOINT SOLUTION (K) LTD	NO
318	PRIME TRANCITY LIMITED	NO
319	QUARSER SHUTTLE	NO
320	QUE SERVICES SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
321	RAHA EXPRESS LTD	NO
322	RASASI INVSETMENT LIMITED	NO
323	REMBO SHUTTLE SAVINGS AND CREDIT SACCO LTD	NO
324	RENGCOM COMMUNICATIONS LTD	NO
325	ROG TRAVELLERS SAVINGS AND CREDIT COOPERATIVE SOCIETY LTD	NO
326	RONGAILINE SACCO	NO
327	RONGAO SAVING AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
328	RONGO PUBLIC TRANSPORT SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
329	ROYAL RIFT SHUTTLE SERVICES	NO
330	ROYAL SWIFT EXPRESS LTD	NO
331	RUKAGINA 44 SACCO	NO
332	RUKINE TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
333	RUNA TRAVELLERS SACCO	NO
334	RUNKA SERVICES COOPERATIVE SAVINGS AND CREDIT SOCIETY LTD	NO
335	RWAKEN INVESTMENTS LIMITED	NO
336	SABATIA SAFARIS SACCO	NO
337	SAFARI LUXURY SHUTTLES LIMITED	NO
338	SASALINE CLASSIC SHUTTLE LIMITED	NO
339	SATIMA SACCO SOCIETY LTD	NO
340	SEMA STAGE MINIBUS OWNER SACCO	NO
341	SEMAKA COOPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
342	SERIAN SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
343	SHABAB MATATU OPERATORS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
344	SILKER AGENCIES LTD	NO
345	SIMBA TRANSPORT SERVICES EAST AFRICA LTD.	NO
346	SIRARE LINE SACCO LTD	NO
347	SISIBO LUXURY SHUTTLE LIMITED	NO
348	SIXTY FOUR TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
349	SMART HIGHWAYS SACCO LTD	NO

350	SNOWBALL SACCO SOCIETY LTD	NO
351	SOLAI LINE SAVINGS AND CREDIT COOP SOCIETY LIMITED	NO
352	SONY TRADING COMPANY LIMITED	NO
353	SOUTH B MATATU OWNERS SACCO SOCIETY LTD	NO
354	SOUTH B TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
355	SOUTH RIFT TRANSPORT SAVING AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
356	SPANISH COACH EXPRESS LIMITED	NO
357	ST. MARYS TRANSPORT SACCO SOCIETY	NO
358	STAHITO COMMUTER SERVICES CO.LIMITED	NO
359	STARBUS COMPANY (K) LTD	NO
360	STARWAYS EXPRESS LTD	NO
361	SUPER HIGHWAY 45 SACCO SOCIETY LTD	NO
362	SUPER PREMIUM SAVINGS AND CREDIT COO-PERATIVE SOCIETY LTD	NO
363	SUPERCOACH SAFARI SACCO SOCIETY LIMITED	NO
364	SUPREME SHUTTLE LIMITED	NO
365	TAHIR SHEIKH SAID TRANSPORTERS LIMITED	NO
366	TAHMEED COACH LIMITED	NO
367	TAWALA UTAWALA SACCO	NO
368	TEACHERS TRANSPORTERS AND AGENCY LIMITED	NO
369	TEAM FERGIE TRANSPORTERS	NO
370	TELAVIV TRANSPORTERS LIMITED	NO
371	THE GUARDIAN COACH CO.LTD	NO
372	THIKA FALLS SACCO LTD	NO
373	THIKA ROAD TRANSPORTERS SACCO LTD	NO
374	THIKA TRAVELLERS CHOICE SACCO	NO
375	THOMAT SAVINGS AND CREDIT COPPERATIVE SOCIETY LIMITED	NO
376	TRANSAFARIS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
377	TRANSLINE CLASSIC LTD	NO
378	TRANSLINE SACCO LTD	NO
379	TRANSNOMICS COMPANY LIMITED	NO
380	TRANSWEST TRAVELLERS CO-OPERATIVE SAVINGS AND CREDIT SOCIETY LIMITED	NO
381	TRAVEL MART LIMITED	NO
382	TRINITY TRANSPORTERS AND LOGISTICS LIMITED	NO
383	TRIPLE S SERVICES COMPANY LIMITED	NO
384	TUJIJENGE COUNTRY BUS SACCO	NO
385	TUNYAI MATIRI TRANSPORT RURAL SAVINGS AND CREDIT COOPERATIVE SOCIETY LIMITED	NO
386	TWENTY MINIBUS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LIMITED	NO
387	TWINS CROSSROADS TRAVELLERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY	NO
388	UGWE BUS SERVICES LIMITED	NO
389	UMOINNER SACCO LTD	NO
390	UMOJA INNERCORE TENA MATATU OWNERS SAVINGS AND CREDIT CO-OPERATIVE SOCIETY LTD	NO
391	UMOWA SACCO	NO
392	UNGWANA SUCCESS SACCO	NO
393	UNIFIED INTERNATIONAL LIMITED.	NO

394	UTAWALA BY-PASS TRAVELLERS SACCO	NO
395	WAKADEBA SACCO	NO
396	WAKIMALI TRAVELLERS CO. LTD	NO
397	WALOKANA	NO
398	WAMASAA TRAVELLERS LIMITED	NO
399	WAPI WAPI THE CRAB SERVICES LIMITED	NO
400	WASAFIRI TRAVELLERS SACCO LTD	NO
401	WENYA SAFARI LTD	NO
402	WEST MADARAKA ROUTE 14 COOPERATIVE SACCO.	NO
403	WESTERN CROSS EXPRESS COMPANY LIMITED	NO
404	ZIOLINE SERVICES SACCO LTD	NO
405	ZURI GENESIS COMPANY LIMITED	NO

Source: National Transport and Safety Authority of Kenya, NTSA (2022)



Appendix IV: Strathmore University Institution Board License



25th January 2024

Mr Siringi Ford,
Ford.Anwar@strathmore.edu

Dear Mr Siringi,

RE: Determinants of Electric Vehicle Adoption by Public Transport Companies in Nairobi City County, Kenya

This is to inform you that SU-ISERC has reviewed and **approved** your above **SU-masters** research proposal. Your application reference number is **SU-ISERC1954/24**. The approval period is from **25th January 2024 to 24th January 2025**.

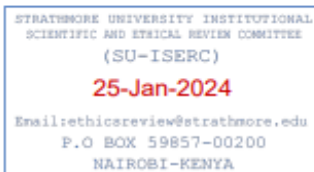
This approval is subject to compliance with the following requirements:

- i. Only approved documents including (informed consents, study instruments, MTA) will be used.
- ii. All changes including (amendments, deviations, and violations) are submitted for review and approval by SU-ISERC.
- iii. Death and life-threatening problems and serious adverse events or unexpected adverse events whether related or unrelated to the study must be reported to SU-ISERC within 72 hours of notification.
- iv. Any changes anticipated or otherwise that may increase the risks or affected safety or welfare of study participants and others or affect the integrity of the research must be reported to SU-ISERC within 72 hours.
- v. Clearance for the export of biological specimens must be obtained from relevant institutions.
- vi. Submission of a request for renewal of approval at least 60 days prior to the expiry of the approval period. Attach a comprehensive progress report to support the renewal.
- vii. Submission of an executive summary report within 90 days of completion of the study to SU-ISERC.

Before commencing your study, you will be expected to obtain a research license from National Commission for Science, Technology, and Innovation (NACOSTI) <https://research-portal.nacosti.go.ke/> and obtain other clearances needed.

Yours sincerely,

Mr Ambrose Rachier,
Chairperson; SU-ISERC



Appendix V: NACOSTI License

Republic of Kenya
NATIONAL COMMISSION FOR
SCIENCE, TECHNOLOGY & INNOVATION

Ref No: **662929**

RESEARCH LICENSE



This is to Certify that Mr. Ford Anwar Anwar of Strathmore University, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Nairobi on the topic: DETERMINANTS OF ELECTRIC VEHICLE ADOPTION BY PUBLIC TRANSPORT COMPANIES IN NAIROBI CITY COUNTY, KENYA for the period ending : 06/February/2025.

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