ISSN 2663-127X

Vol. 7, Iss. 1 (2026), pp 318 – 341, August 29, 2026. www.reviewedjournals.com, ©Reviewed Journals

CHANGE MANAGEMENT PRACTICES AND ADOPTION OF ELECTRIC AUTOMOBILES IN NAIROBI CITY COUNTY, KENYA

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Accepted: August 12, 2026

DOI: https://doi.org/10.61426/business.v7i1.566

ABSTRACT

The adoption of electric automobiles marks the significant step made by Kenya towards sustainable transport. Electric vehicles will help decrease reliance on fossil fuel and enhance air quality in cities. However, in spite of the increasing interest in electric vehicles, their adoption has been very slow particularly in Nairobi City County where problems connected to traffic jams and air contamination arise. High price of vehicles, unavailability of supportive infrastructure, low level of technology expertise and reluctance to adopt new technologies are some of the hindrances. Despite the mentioned influences, not much research concerning the role of change management practices in electric vehicle adoption has been conducted. Consequently, the purpose of the paper was to analyze the role of change management practices in electric vehicle adoption in Nairobi City County in Kenya. Specifically, the following factors influencing the electric vehicle adoption were analyzed: communication strategies, technological training, resistance management, and strategic partnerships. The research was based on Diffusion of Innovations Theory, Technology Acceptance Model, Lewin Change Management Model, and Stakeholder Theory. Descriptive-explanatory research design was used and the target group of the research was 2250 people. In conducting the study, stratified random sampling was used, and the sample consisted of 411 participants. Primary data were obtained through semi-structured questionnaires and subjected to descriptive statistics, Pearson correlation analysis, and multiple regression analysis using SPSS Version 26. It was determined that communication strategies, technology training, resistance management, and strategic partnerships had significant positive impacts on electric vehicle adoption. It was found that communication strategies were the most important factor impacting the process of adoption, followed by technology training, partnerships, and resistance management. It was established that enhancing good communication, technology training, resistance management, and strategic partnerships was necessary to increase the level of electric vehicle adoption in Nairobi City County. Moreover, it was recommended that integrated communication systems be developed, continuous technology training should be institutionalized, strategic partnerships be established, and methods of eliminating resistance and involving citizens should be improved.

Keywords: *Change Management Practices; Electric Vehicle Adoption; Communication Strategies; Technological Training; Resistance Management; Strategic Partnerships.*

CITATION: Ibrahim, F. O., & [2] Njuguna, R. K. (2026). Change management practices and adoption of electric automobiles in Nairobi City County, Kenya. *Reviewed Journal International of Business Management*, 7 (1), 318 – 341.

INTRODUCTION

Electric vehicles are considered an approach towards sustainable transport in order to reduce emissions associated with climate change, fossil fuel dependency, and pollution generated by transport systems on a global scale. In contrast to regular vehicles that depend on fossil fuel, electric cars depend on electric propulsion and batteries that reduce the carbon emissions of our transport systems (Rezvani et al., 2021). The evolution in the transport industry has taken place due to climate change, technological development, urbanization, and energy efficiency, among others (Corradi et al., 2023). The emerging technologies in electric vehicles have led to numerous advantages in the area of environmental sustainability and energy transfer needed.

Globally, different methods have been used by countries to enhance adoption of electric cars using change management techniques which help in making the switch from regular cars to electric mobility. Various countries including Norway, China, the United States, and others have increasingly relied on the integration of policy incentives, consumer education initiatives, development of charging infrastructure, technological development, and collaborations with various stakeholders to make adoption of electric cars faster (Rezvani et al., 2021). Communication is critical in this process in increasing knowledge of consumers regarding benefits, costs, operation, environmental aspects, and the uncertainties associated with use of novel technologies (Almansour, 2022). Access and availability of charging infrastructure play an essential part in enhancing adoption of electric automobiles due to the fact that consumers need to be assured of availability of appropriate charging stations for their mobility needs (He et al., 2022). Consumers' adoption of innovative technologies is further influenced by their knowledge about the usefulness and ease of using new technologies (Davis et al., 2024). Strategic collaboration by automobile firms, governments, technology firms, energy firms, and other stakeholders helps organizations integrate complementary resources and capabilities to make technological transitions successful (Kukkamalla et al., 2021).These global experiences demonstrate that successful electric automobile adoption depends not merely on vehicle availability but also on effective communication, technological capacity, supportive infrastructure, resistance management, and coordinated stakeholder participation.

Across Africa, many countries have embraced electric mobility as part of broader sustainable transport initiatives intended to reduce dependence on imported petroleum products, address urban air pollution, and promote environmentally sustainable transportation. This transition has been increasingly made through the involvement of electric cars, motorcycles, buses, charging stations, renewable energy systems, and other interventions intended to create the emerging electric-mobility systems in various regions in Africa (Ayetor et al., 2023). However, electric vehicles are yet to be widely adopted in most African countries due to the high cost of acquiring them, inadequate charging stations, poor technical skills, and inefficiencies in the transport and energy systems (Gicha et al., 2024). Electric mobility will also be affected by consumer acceptance of technology where potential adopters of the technology have limited experience of use of such technological advancements and the associated charging methods (Ju & Kim, 2022). Moreover, creating the electric-mobility system requires the effort and contributions from various parties including governments, private investors, automobile manufacturing companies, energy providers, infrastructure development firms, and many others due to the fact that one organization alone does not possess the capabilities and financial muscles to make the transition (Kukkamalla et al., 2021). These technological, infrastructural, financial, behavioural, and institutional constraints have slowed the transition towards electric mobility and contributed to differences in electric automobile adoption across African markets.

Kenya has similarly undertaken initiatives aimed at promoting electric mobility as part of broader efforts to establish environmentally sustainable transport systems, reduce dependence on fossil fuels, and exploit opportunities associated with cleaner energy technologies. The country's expanding electric-mobility sector has witnessed increasing involvement in electric cars, motorcycles, buses, charging technologies, and related

mobility services, although the transition remains at an emerging stage (Gicha et al., 2024). Electricity provision and adequate charging facilities become significant due to the increased likelihood of electric car adoption in places with easy and practical access that is sufficient to cater for daily mobility needs (He et al., 2022). The awareness among consumers is significant due to inadequate or incomplete information about cost efficiency, the environmental benefits of electric vehicles, charging, maintenance, and performance (Almansour, 2022). Professionalism is equally crucial since the transition process requires individuals well-versed in operating electric cars, batteries, diagnosis and maintenance of electric cars and charging infrastructure (Alkhamaiesh & Cavanaugh, 2024). Moreover, electric vehicles face possible resistance due to consumer fears about technological reliability, cost implications, vehicle mileage, and disparities between electric and standard cars (MacInnis et al., 2023). In summary, Kenya needs not only to provide electric cars and charging infrastructure but also proper communication, technology, resistance management, and stakeholder collaboration.

Nairobi City County presents a unique context for examining electric automobile adoption because it is Kenya's principal economic and commercial centre and has a large concentration of vehicles, commuters, transport operators, businesses, and emerging electric-mobility enterprises. The expansion of electric mobility in Sub-Saharan African cities provides opportunities to address transport-related environmental pressures while supporting the transition towards cleaner transportation technologies (Gicha et al., 2024). Nairobi has become a vital area for electric vehicles, bikes, buses, charger stations, and other initiatives in mobility, which has made this county relevant for researching processes of organizational behaviour around adoption of electric automobiles. Charging availability is still essential since would-be adopters need access to the facilities before they can switch from traditional vehicles to electric ones (He et al., 2022). User receptiveness might also be shaped by the uncertainties of vehicle range, battery quality, charging needs, reliability of technology, and issues involved in replacing traditional vehicles with electric ones (Ju & Kim, 2022). Communication is thus needed to clarify the situation and help would-be users get sufficient information (Almansour, 2022). However, in addition to this, technical training is necessary to increase the abilities of the personnel and the end users that would be handling the new electric vehicles technologies (Alkhamaiesh & Cavanaugh, 2024). In addition, collaborations between the various players such as electric cars manufacturers, the governments, energy companies, infrastructure developers, financial institutions among others can provide the necessary complementary abilities that would assist in creating an electric-mobility ecosystem (Kukkamalla et al., 2021). These contextual conditions may significantly affect the pace and effectiveness of electric automobile adoption within Nairobi City County.

Despite the fact that there is currently increasing research interest on electric mobility in Kenya, previous works have focused on consumer perceptions, environmental factors, purchase cost, technology-related attributes, charging facilities, among other generic attributes affecting the adoption of electric vehicles. Charging convenience has been found to be one of the key attributes influencing consumers' intent for adopting electric cars since doubt about the availability of charging facility may hinder potential buyers from switching from the traditional mode of transportation (He et al., 2022). Consumer skepticism has been linked to anxiety and consumer perceptions related to the usage of electric vehicles and technologies (MacInnis et al., 2023). The previous work conducted has also focused on behavioral as well as technological aspects that are affecting electric vehicle adoption without necessarily looking at these aspects through the lens of change management (Corradi et al., 2023). Very little empirical work has been done regarding the collective effect of change management approaches on electric car adoption with a focus on Nairobi City County. Prior research has separately focused on communication, technological knowledge, resistance by consumers, infrastructure, or cooperation among stakeholders with little emphasis on their joint effects on electric car adoption.

This study sought to address this knowledge gap by examining the influence of change management practices on the adoption of electric automobiles in Nairobi City County, Kenya. Specifically, the study investigated the

influence of communication strategies, technological training, resistance management, and strategic partnerships on electric automobile adoption. The findings contribute to the growing body of knowledge on electric mobility and change management by providing context-specific empirical evidence to inform organizational strategies, technological capacity development, stakeholder collaboration, policy interventions, and strategies for strengthening electric automobile adoption and supporting Kenya's transition towards environmentally sustainable urban transportation systems.

Statement of the Problem

The usage of electric vehicles (EVs) is anticipated to be associated with sustainable mobility due to lower GHG emissions, improvement of urban air quality, increase in energy security, reduction in fossil fuel reliance, and development of green industries (IEA, 2023). Successful shift to electric mobility will highly rely on proper application of change management techniques, which should include such actions as adequate communication, appropriate technical preparation, managing of resistances, and strategic partnership. Change management is especially relevant to the area since EV usage will imply the need for people and other stakeholders to get accustomed to innovations in terms of new technologies, infrastructure needs, operations, and mobility (Almansour, 2022).

However, even with the establishment of several policy instruments such as National Energy Efficiency and Conservation Strategy and the Draft E-Mobility Policy, the uptake of electric cars in Kenya falls far behind the projected goals in terms of national targets. The National Energy Efficiency and Conservation Strategy has set a goal of having electric cars constitute 5 percent of all new registrations by 2025 (Ministry of Energy, 2020). Data from national registrations indicated that 3,753 electric cars have been registered up to December 2023, accounting for just 1.62 percent out of 165,913 new vehicle registrations (KIPPRA, 2024). In the case of Nairobi City County, where there is a high concentration of cars as well as transport emissions, there were 2,079 electric car registrations in the year 2023. These figures indicate the continued gap between the national goals for electric mobility and their actual realization, suggesting that the current policies have failed to consider the determinants of adoption on a local level.

Several empirical studies have been done concerning electric cars adoption despite a majority of the existing body of knowledge being centered around the economic constraints, infrastructure constraints, incentives, attitudes, and technologies. The past research studies have shown that economic and infrastructural constraints have significant roles in hindering the adoption of electric cars (Gupta & Rhoads, 2022). There are other research studies that have looked at the role played by the government incentive schemes in encouraging adoption of electric mobility but they have failed to focus on the organizational processes involved in adopting those incentives. Test drive interventions have also been found capable of enhancing consumers' positive attitude towards electric cars despite failing to incorporate an overall change management process that can be applied in an urban setting like Nairobi city county in a developing country (Almansour, 2022). Consequently, limited scholarly attention has been given to the combined influence of communication strategies, technological training, resistance management, and strategic partnerships on electric automobile adoption, particularly within the context of Nairobi City County.

Consequently, there is still inadequate research that examines the impact of the change management practices of communication strategies, technological training, resistance management, and strategic partnerships on electric automobile adoption in Nairobi City County. As a result, there is an inadequacy of evidence that could be used by relevant players to formulate effective change management strategies that would reduce the gap between the set goals of electric car use and its actual use. Hence, this study sought to investigate the effect of change management on the adoption of electric automobiles in Nairobi City County, Kenya, specifically communication strategies, technological training, resistance management, and strategic partnerships.

LITERATURE REVIEW

This section presents the theoretical and empirical literature underpinning the study.It looks into the theories that help understand how the change management activities impact the adoption of electric vehicles and analyzes empirical data on communication methods, technology training, dealing with resistance, and strategic alliances in terms of electric vehicle adoption in Nairobi City County, Kenya.

Theoretical Framework

The study was anchored on four complementary theories that explain the role of change management practices in enhancing the adoption of electric automobiles: Diffusion of Innovations Theory (DOI), Technology Acceptance Model (TAM), Lewin's Change Management Model, and Stakeholder Theory.

Theory of Diffusions of Innovation as put forward by Rogers (1962) entails a process by which any innovation gets adopted through communication channels across a social system. According to this diffusion theory, knowledge, persuasion, decision, implementation, and confirmation represent five significant steps that any individual should go through during the innovation diffusion process. The speed at which a particular innovation would get adopted depends on relative advantage, compatibility, complexity, trialability, and observability, all factors that affect the way that adopters understand technology innovations (Kapoor et al., 2021). For the purpose of this study, this theory provides insights into the importance of using communication techniques to enhance the adoption of electric automobiles through consistency and clarity of messages. Proper communication helps in increasing the understanding of these technologies, whereas communication channels provide an illustration of the advantages of the use of electric vehicles. There is empirical proof that suggests that factors affecting communication effectiveness and innovation properties contribute to the consumers' intentions and adoption behaviour (Wang et al., 2022). Nevertheless, the model pays great attention to the attributes and communication of innovations but it ignores the impact of structural obstacles such as costly acquisitions, insufficient charging networks, and institutions on the adoption of electric automobiles.

The Technology Acceptance Model, suggested by Davis (1989), explains the technology adoption model where there are two main factors that determine adoption of technology, namely; perception of its usefulness and its ease of use. The perception of usefulness relates to the degree to which people feel that use of certain technology increases their performance, whereas ease of use relates to the degree to which people find this particular technology easy to comprehend and use (Scherer et al., 2019). In the framework of the study, the model helps to reveal the impact of training programs on the adoption of electric vehicles due to the presence of such training programs and improvement in competence. Technological training provides more opportunities for the use of electric automobile technologies; thus, increasing the perception of ease of use. Training specific to roles will improve usefulness through showing the value of electric automobile technologies in improving the performance of tasks or functions. Studies have proved the impact of perceptions of usefulness and ease of use on behavioral intentions and successful adoption of the technology (Abdullah et al., 2022). However, the framework considers mainly individual perceptions of technologies but pays less attention to extrinsic factors influencing the adoption of the technology.

The Change Management Model from Lewin (1951) sees the organizational change process as a three-step procedure that includes the unfreezing step, change, and the refreezing step. As part of the unfreezing process, the organization prepares its stakeholders for changes through questioning current practices and finding causes for any forms of resistance. The process of change includes introducing new systems, technologies and behavioral practices whereas refreezing includes trying to maintain new behavioral practices into organizational operations and culture. Lewin's change model is still regarded as an important theoretical approach to describe organizational or sustainable change processes (Burnes, 2020). In this study, the model describes the process of managing resistance in the form of identification of the source of resistance, responsiveness to concerns of stakeholders, and fairness of electric automobile implementations. Resistances

can be identified with the unfreezing stage as the organization will need to identify issues and barriers that might prevent adaptation. Dealing with such barriers assists with the change, whereas implementing it fairly leads to trust building in mobility practices. Structured methods for dealing with resistances and engaging stakeholders positively impact organizational change (Errida & Lotfi, 2021). However, it is important to note that this model depicts change as a quite linear process, which might not entirely cover dynamic processes related to technology and infrastructure of emerging electromobility ecosystem.

According to the Stakeholder Theory, introduced by Freeman (1984), organizational strategies should include value creation for many different stakeholders instead of focusing only on shareholders' interests. This theory stresses the importance of good relationships and cooperation between those who impact organizations' operations and those who are impacted by them. In the case of this research, the Stakeholder Theory will account for the development of strategic alliances via stakeholder participation in the planning process, collaboration, and resource contribution towards electric vehicles' adoption. Planning allows all relevant stakeholders to participate in the decision-making process, and collaboration enables organizations to coordinate their activities and integrate their competences. A strategic partnership would thus help electric vehicle organizations, governmental organizations, energy providers, electric vehicle infrastructure providers, banks, technology companies, and individuals in creating the ecosystem required for making electric transportation feasible. This has been proved by the findings from sustainable development studies which prove that multiple stakeholder collaboration results in better innovation and environmental sustainability (Horisch et al., 2021). However, Stakeholder Theory does not provide any justification about variations in the stakeholders in terms of power, resource availability, focus, and influence.

Collectively, these theories provide a comprehensive framework for understanding how change management practices influence the adoption of electric automobiles. Theory of Diffusion of Innovations discusses how communication strategies help in the awareness, comprehension, and adoption of electric cars technology. Technology Acceptance Model discusses how technological training helps in improving perceived usefulness and ease of use. The Change Management Theory by Lewin discusses resistance management during change and stakeholder theory talks about strategic partnership and collaboration. Together all the above-mentioned theories give a comprehensive perspective of how communication strategies, technological training, and resistance management among other aspects play a role in the adoption of electric cars in Nairobi City County, Kenya.

Empirical Literature

Communication Strategies and Adoption of Electric Automobiles

The importance of communication strategies cannot be underestimated in electric vehicle adoption, as it ensures knowledge sharing, awareness, decreases uncertainty levels, and impacts consumers' perceptions, their willingness to accept emerging technological advancements in transport sector. In his paper, Ouparamai (2024) examines the effects of several marketing communication strategies on Thai people who wanted to become the owners of electric automobiles. In order to collect data, a quantitative approach was chosen with stratified random sampling design that included 400 licensed drivers who participated in the survey. The author studied sales promotion, Internet marketing, personal selling, direct marketing, public relations, and advertising, using ANOVA and multiple regression analysis to find out how all these communication strategies impacted acceptance of electric automobiles among Thai people. It turned out that communication strategies had considerable effect on consumers' attitude to electric vehicles. But Ouparamai conducted research of marketing communication strategies only and ignored the importance of organizations' structured internal communication in order to implement technological changes and electric cars adoption.

Kamble & Shaikh (2025) analyzed the relationship between the role of marketing communications, policy and transparency and stakeholder engagement in the adoption of electric automobiles in urban, semi-urban and rural India. Data collection for this research involved the collection of survey data through questionnaires

distributed to 435 individuals together with conducting interviews. Data collected was analyzed through the use of regression analysis, structural equation modeling and ANOVA. Results showed that effective communication, policies and infrastructure development were some factors that contributed to electric automobile adoption. However, the research focused much on marketing communication campaigns while neglecting the organization of internal communication.

Wu et al. (2024) looked at the impact of government communication tactics on the adoption of electric automobiles in China. The research adopted a mixed methodology approach, which involved the use of surveys and interviews of 500 automobile purchasers and policy makers. Effectiveness of communication was gauged by measuring participants' capacity to remember promotions after their exposure to various promotional techniques. Results showed that those people who were knowledgeable about the government campaigns had a 40 percent more purchase rate for the electric cars compared to others. This shows that targeted public communication can impact consumer purchase decisions. The research only looked into government policies and their communications but did not explore other organizations' communication tactics.

Shahrier and Habib (2025) explored the impact comparison between fear appeals, incentives, and social norm messages on intentions to buy electric vehicles in Canada. The research used an experimental research design whereby 1,200 participants were involved, and the participants were allocated into the three groups. It was noted that social norms produced the best responses, followed by incentives, while the least response was for fear appeals. Nevertheless, the study focused on experimental persuasion but failed to conduct a study on long-term persuasion within organizations. As such, little is known about the effects of planned organizational communication on the purchase intentions of electric automobiles in business organizations operating in growing markets for electric mobility like Nairobi City County.

The Technological Training and Adoption of Electric Automobiles

Technological training is vital in electric car adoption in ensuring the necessary skills are obtained in managing, maintaining and using the electric mobility technologies. In this regard, the need for relevant training has been identified since there are new requirements arising from electric cars regarding battery management, charging, vehicle diagnostics among others. Edelenbosch, McCollum, Pettifor, Wilson & Vuuren (2018) investigated the relationship between social and technological learning in electric car adoption in Europe, the United States of America and China. In their mixed methods research where simulation modeling, interviews and literature review were employed, technological learning with regards to battery handling, vehicle maintenance and the management of the charging infrastructure were analyzed. It was found that hands-on training and demonstrations enhanced the electric car adoption. Nevertheless, the research only focused on learning and adoption in developed countries while overlooking how technological training in organizations would fit change management processes of an African market for electric vehicles.

Gultaş, Ozel, Darendeoglu, Çadirci, Urel, Dikmen, and Karadag (2025) analyzed the impact of electric vehicle technology training on employees from an electric car manufacturing firm located in Turkey. Adopting a quasi-experimental approach of using pretest and posttest design, the study targeted employees from three main areas of work which include research and development, sales, and operational activities. Technological training improved knowledge and skills among employees. However, the study was only done in one manufacturing firm and the impacts of training were mainly measured on how effective the firm performed its operations. Hence, little information on readiness of the organization and adoption of electric vehicles by customers was obtained.

Pandjaitan & Dewi (2021) examined the factors affecting the adoption of electric vehicle technologies amongst 380 vocational automotive teachers in Indonesia using a cross-sectional design and regression analysis. From the study, it emerged that the experience with electric vehicles, workshop participation, and institutional backing significantly affected the adoption. While the results highlight the need for exposure and

technological education, the study had a focus on vocational teachers and not the organizations involved in producing the electric vehicles and consumers of the same products. Thus, the impact of the availability of training, applicability of such training for the workers, and their post-training performance could not be ascertained.

Chalhoub (2023) assessed consumer-based technological learning through the use of an experimental approach which included 600 individuals who intended to purchase electric cars. They were randomly grouped to receive various levels of education and their range anxiety levels evaluated prior to the experiment. According to Chalhoub (2023), it emerged that immersive technological education lowered the range anxiety and improved the probability of buying the electric car. However, the research study was conducted in a developed market of electric cars and emphasized only the aspect of consumer education. How internal employee training may increase the quality of technical data and advice offered to potential buyers of electric cars was not addressed.

Resistance Management and Adoption of Electric Automobiles

Resistances management is key in the use of electric automobiles since customers and employees may raise concerns over their cost, reliability, safety, charging needs, and impacts that would arise due to the transition from conventional vehicles to electric vehicles. Resistance management is done by identifying possible sources of concerns, responding to stakeholders' uncertainties, and implementing technological changes in a fair way. Li & Patel (2023) looked at the drivers of consumer resistance against adopting electric automobiles in Germany and the interventions to minimize the consumer resistance. A combined approach to research involving both qualitative and quantitative methodology and using range anxiety, cost factors and access to charging infrastructure as measures of resistance was employed. Factor analysis was employed to analyze the quantitative data while thematic coding was performed on the qualitative data. Results showed that targeted education communication lowered consumer resistance by 30%. Nonetheless, the study did not consider any form of internal organizational resistance because it took place in a developed electric automobiles industry market. Thus, it had little information about managing resistance in electric automobiles in emerging markets such as Nairobi.

MacInnis, Krosnick, and McDonald (2023) explored the resistance to purchase all-electric vehicles in the US using the methodology of observational research design, conducted on the basis of a national survey. Models of regression analysis have been utilized for the identification of factors which affect resistance to the purchase of electric vehicles among the American population. The resistance has been evaluated on the grounds of unwillingness of the individuals to purchase electric vehicles, taking into account factors like electric vehicles knowledge and education characteristics. Financial barriers related to the cost of acquisition and maintenance have been identified as sources of the consumer resistance, along with the role of the social acceptance. Nevertheless, the research is limited by focusing on American consumers only and does not consider any resistance that might take place in an African electric mobility market. Also, the consumer resistance is considered as a behaviour outcome only without exploring how the resistance management can be conducted by organizations of electric automobile.

Chen and Osei (2022) evaluated the effects of the decline in consumer resistance towards electric cars after undergoing various information and test drive sessions in China. The research employed a longitudinal approach with a sample size of 600 households observed for two years. Resistance was measured using structured surveys at various times based on factors such as the perception of ease of use, perceived safety, and other aspects. The results revealed a decrease in resistance by a minimum of 25% among the households that underwent the intervention program. However, the research mainly involved household interventions in the Chinese market and did not consider the management of resistance in an organizational setting. Therefore, the research could not reveal ways in which companies in the electric car industry can manage resistance.

Arora and Singh (2024) researched the effect of testimonials and social proof in decreasing resistance among consumers toward electric vehicles in India. The researchers utilized the case study method for collecting data through engagement data collected online and then consumer surveys. Consumer resistance was measured based on the level of hesitancy before and after being exposed to testimonials, whereas descriptive statistics were used in measuring change in purchasing interest. It was discovered that purchasing interest among consumers who were exposed to the testimonials increased by 50%. The research mainly focused on external consumer behavior in India and does not cover Sub-Saharan African environments. Internal resistance management has also been left out.

Ajith, Salwa, and Ghosh (2024) utilized the Innovation Resistance theory to explore the barriers to adoption of electric cars. A structured questionnaire was used to gather primary data while structural equation modeling was employed to measure the level of influence exerted by the various barriers towards resisting the innovation. In their findings, the barriers had a significant influence on the resistance with incompatibility of values being an essential barrier towards adoption. Nonetheless, this study was conducted outside the Nairobi electric car market and only focused on the barriers from a consumer's perspective without linking them to change management practices. Therefore, the research provided limited insight on how identification of resistance, responsiveness to stakeholders and fairness can be used to overcome resistance.

Strategic Partnerships and Adoption of Electric Automobiles

Strategic partnerships are an integral part of electric car adoption because the switch to electric mobility entails collaborative efforts from automobile makers, technologists, charging station providers, energy companies, government agencies, financial institutions, suppliers, and more. Strategic partnerships can help firms collaborate with each other for exchanging technological know-how, financial know-how, market know-how, infrastructure, and expertise necessary for boosting operational efficiency and developing electric automobile markets. Achal and Vijaya (2024) undertook a systematic literature review to analyze vendor partnerships in sustainable supply chains in the electric two-wheeler industry in India. The authors used 95 articles published in the period from 2000 to 2023 and performed content analysis aimed at identifying strategic partnership themes such as technology development and information exchange. The results revealed that high-quality vendor partnerships facilitated efficiency, cost-cutting, and reliability, hence setting the basis for consumer acceptance. Nevertheless, Achal and Vijaya's paper is solely concerned with the electric two-wheeler market in India; thus, being confined to secondary data sources, it does not have the opportunity to capture actual practices of partnerships in electric mobility in Africa. In addition, it does not pay attention to the link between organizational change process and strategic partnerships development.

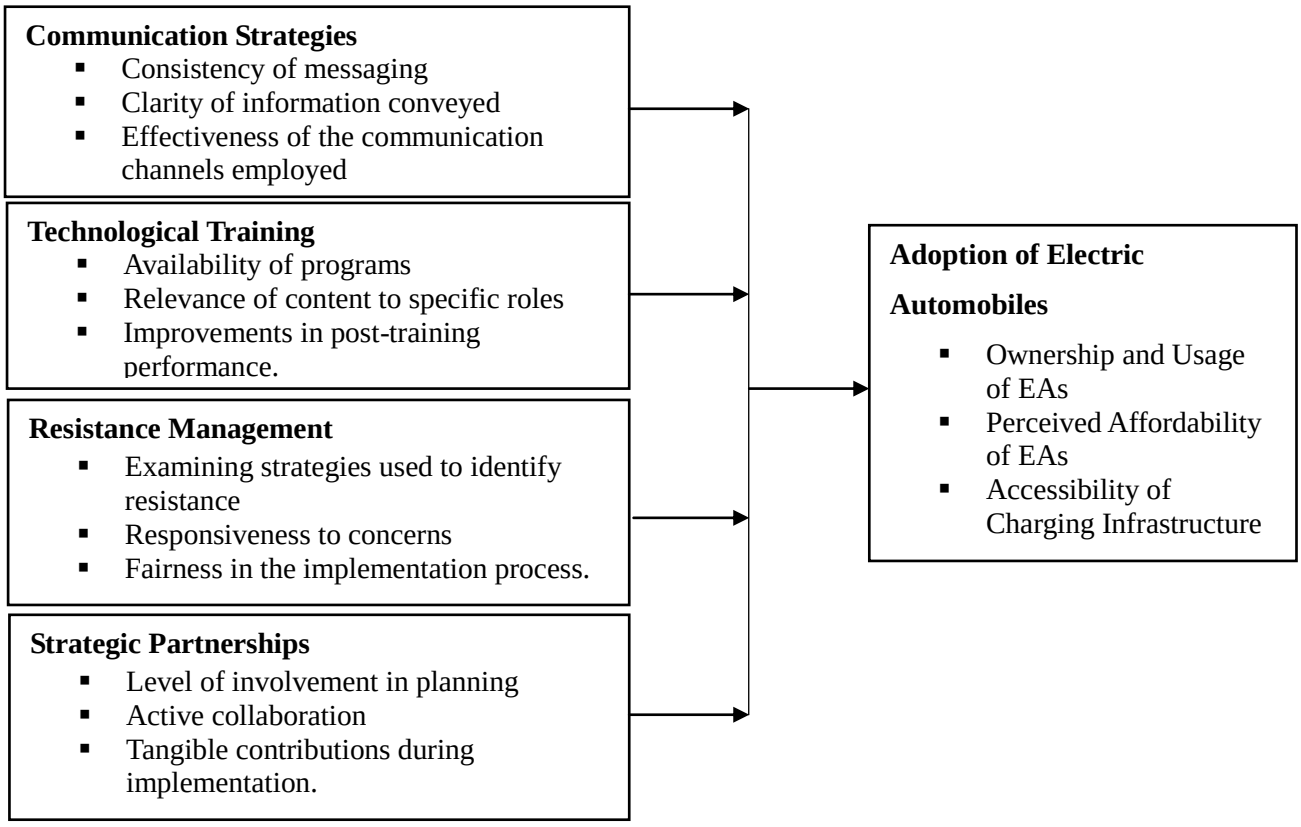
Dzienis and McCaleb (2024) performed a qualitative research to investigate the reasons behind the Sino-Japanese strategic alliances in the new energy vehicle industry within the framework of China's Belt and Road Initiative. Data was gathered via semi-structured interviews of 32 executive officials and policymakers and were supported by an analysis of the partnership agreements and relevant policies. Partnership outcomes were measured based on the criteria of technological transfers, access to markets, compliance with regulations and co-development. Based on the results, it was found that strategic alliances were initiated to enhance innovation efforts and market development processes. Yet the current research considered the geopolitics and bilateral alliances in Asian countries while ignoring any alliances in African countries for electric automobiles. Moreover, there was no information on how strategic alliances work as organizational change management for adopting electric automobiles.

Wang et al., (2018) performed a quantitative research aimed at developing a hybrid evaluation framework for choosing strategic partners in the domain of electric automobiles in Taiwan. Wang et al. (2018) used a hybrid framework involving Data Envelopment Analysis and Grey Theory to assess technological capabilities, financial stability, culture compatibility, and prior cooperation among 15 companies operating in the field of electric automobiles. It can be concluded from the results of the research that it is vital to choose partners with

innovative skills and adequate resources to help in market development and improve collaboration. Nonetheless, Wang et al. (2018) have ignored the Sub-Saharan African environment and focused mainly on partner selection without analyzing the general role of partnerships in electric automobiles adoption.

Kukkamalla, Bikfalvi & Arbussa (2021) carried out a mixed-method research in order to determine the effect of collaborative partnerships in automobile firms on innovation success in Spain. The study utilized survey information collected from 120 firms alongside interviews with 20 executives. Strategic partnership intensity was measured using joint decision making, technology platform sharing and synergy in supply chain. Regression analysis revealed that collaborative partnerships were found to have a positive impact on technology integration, shortened time-to-market and increased production of electric vehicles. However, the research study was conducted in the Spanish automotive industry thereby providing insufficient information about the partnership process in the Sub-Saharan African electric mobility markets. Moreover, the study was mainly concerned about innovation and production without considering strategic partnerships in an organizational change management context and determining the effect of such partnerships on ownership and utilization of electric automobiles in a developing country such as Nairobi City County.

Conceptual Framework



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

METHODOLOGY

Descriptive-explanatory research design was chosen since it was an appropriate approach in carrying out this study that sought to examine the effect of change management techniques on adoption of electric automobiles in Nairobi City County, Kenya. Descriptive-explanatory research design facilitated the gathering of quantitative data for the determination of the relationship between communication techniques, technology training, resistance management, strategic partnering and adoption of electric automobiles. The descriptive

part enabled the study to determine the extent to which change management techniques affect adoption of electric automobiles.

The population to be sampled consisted of 2,250 individuals who include 750 employees recruited from 15 organizations dealing with manufacturing, distributing and selling electric automobiles in Nairobi City County together with 1,500 users of electric automobiles. A sample of 261 individuals was selected from 750 individuals using Yamane's (1967) equation at 5% margin of error. Another 150 individuals using the same percentage of Orodho (2009) was sampled out from the user group making a total of 411 individuals. A stratified sampling technique was used where the organization sample included large, medium and small organizations while the customers included individuals and corporations.

The primary data collection method was the use of a semi-structured questionnaire. The tool obtained data on communication approaches, technological training, resistance management, strategic partnership and electric car uptake. A pre-test was carried out involving 41 respondents within the county of Kiambu. Content validity was checked through the evaluation by experts consisting of the academic supervisor and subject-matter experts in change management, organisational behavior and sustainable transportation. Reliability of the data collected was checked using Cronbach's alpha, where 0.70 was used as the cut off point for internal reliability.

The quantitative data was coded and analyzed through SPSS version 26. Frequency, percentage, mean, and standard deviation descriptive statistics were used to analyze the data. The correlation analysis was done using Pearson's test to find out the relationship between communication tactics, technology training, managing resistance, strategic partnerships, and the adoption of electric cars. The multiple regression analysis was further done to ascertain the extent to which the change management techniques predicted the adoption of electric cars. Results are reported in tables with brief discussions.

RESULTS AND DISCUSSION

This section contains the research results on the effects of change management practices on the adoption of electric cars in Nairobi City County, Kenya. The findings have been presented in accordance with the objectives of the study. Survey respondents were asked to indicate their level of agreement with various statements on the use of communication strategies, technology training, resistance management, strategic alliances, and electric car adoption on a five-point Likert scale (1= Strongly Disagree, 5 = Strongly Agree).

The Communication Strategies and Electric Automobile Adoption

The first objective of the study was to determine the influence of communication strategies on the adoption of electric automobiles in Nairobi City County, Kenya. The respondents were expected to respond to the extent to which they agree with certain statements regarding the communication approaches using the five-point Likert scale. The results are shown in Table 1.

Table 1: Descriptive Statistics on Communication Strategies (n = 402)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
The information about Electric Automobiles is consistent across all communication sources.	24 (6.0%)	38 (9.5%)	84 (20.8%)	153 (38.1%)	103 (25.6%)	3.04	1.11
Different teams share the same key messages about Electric Automobiles.	15 (3.7%)	50 (12.4%)	75 (18.7%)	159 (39.6%)	103 (25.6%)	3.29	1.09
I clearly understand the information provided about Electric Automobiles.	25 (6.2%)	38 (9.5%)	83 (20.6%)	150 (37.3%)	106 (26.4%)	3.41	1.14
The benefits of adopting electric automobiles have been explained clearly.	22 (5.5%)	42 (10.4%)	75 (18.7%)	172 (42.8%)	91 (22.6%)	3.60	1.10
The methods used to share information about Electric Automobiles are effective.	17 (4.2%)	48 (11.9%)	72 (17.9%)	162 (40.4%)	103 (25.6%)	3.72	1.10
I receive updates through channels that are convenient for me.	21 (5.2%)	40 (10.0%)	90 (22.4%)	152 (37.8%)	99 (24.6%)	3.57	1.09
Mean						**3.44**	**1.10**

The findings show that communication strategies had a great contribution to promoting the adoption of electric cars in Nairobi City County. As for whether there was consistency in the information about electric cars communicated by all sources, 153 (38.1%) respondents answered affirmatively, 103 (25.6%) answered strongly affirmatively, 84 (20.8%) remained neutral, 38 (9.5%) disagreed, and 24 (6.0%) strongly disagreed. The fact that the $\bar{x} = 3.04$ and $\sigma = 1.11$ shows inconsistency in perception as regards the consistency of information communicated by various sources. In case of whether different teams communicated consistent messages on electric cars, 159 (39.6%) agreed and 103 (25.6%) strongly agreed, 75 (18.7%) remained neutral, 50 (12.4%) disagreed, and 15 (3.7%) strongly disagreed. The $\bar{x} = 3.29$ and $\sigma = 1.09$ show moderate agreement as regards consistency of electric car messages from different teams.

As to whether the respondents fully understood the information regarding the electric cars, 150 (37.3%) agreed, 106 (26.4%) strongly agreed, 83 (20.6%) were neutral, 38 (9.5%) disagreed and 25 (6.2%) strongly disagreed. The values $\bar{x} = 3.41$ and $\sigma = 1.14$ point to the moderate degree of agreement that the information regarding the electric cars is clear to the respondents. As to whether the benefits of the electric car adoption are explained clearly, 172 (42.8%) agreed and 91 (22.6%) strongly agreed, whereas 75 (18.7%) were neutral, 42 (10.4%) disagreed and 22 (5.5%) strongly disagreed. The $\bar{x} = 3.60$ and $\sigma = 1.10$ indicate that respondents generally considered the benefits of electric automobile adoption to have been communicated clearly.

On whether the modes of communicating information on electric vehicles were effective, 162 (40.4%) and 103 (25.6%) agreed and strongly agreed, respectively, while 72 (17.9%), 48 (11.9%), and 17 (4.2%) were neutral, disagreed, and strongly disagreed, respectively. The $\bar{x} = 3.72$ and $\sigma = 1.10$ are indicative of positive perceptions of the effectiveness of communication modes and reflect the most highly rated aspect of communication strategy. On whether they received updates from convenient channels, 152 (37.8%) and 99 (24.6%) agreed and strongly agreed, respectively, while 90 (22.4%), 40 (10.0%), and 21 (5.2%) were neutral, disagreed, and strongly disagreed, respectively. The $\bar{x} = 3.57$ and $\sigma = 1.09$ indicate that there is some level of agreement on the convenience of communication channels. Descriptive statistics for the communication

strategies produced an $\bar{x}$ = 3.44 and σ = 1.10, indicating moderately positive perceptions about the effectiveness of communication strategies in promoting electric vehicle use in Nairobi City County. The findings, in particular, show strong perceptions about communication strategies, clarity of benefits, and convenience of communication channels, with relatively poor perceptions of consistency of information across sources.

The qualitative findings supported the quantitative findings through the observation that the motivation for environmental sustainability, anticipated operational savings, and institutional sustainability goals led to electric car adoption. The study revealed that people perceived electric cars as a way of saving money on fuel, promoting clean city transport and being environmentally conscious. However, high initial buying cost, financing challenges, expenses of importing, and lack of charging points were considered as critical limitations. Additionally, it was observed that people found charging points in some regions like Central Business District and Westlands to be readily available compared to charging points in other residential locations where there were reliability and traffic issues related to these points. These findings are supported by the work of Mwangi and Gitonga (2023) which showed that financial motives and supportive policies could enhance the adoption of technology by individual as well as corporate users. Thus, these findings reveal that efforts to improve financial accessibility, reliable charging points, public private partnership and creation of awareness could facilitate electric car adoption in Nairobi City County.

The Technological Training and Electric Automobile Adoption

The second objective of the study was to assess the influence of technological training on the adoption of electric automobiles in Nairobi City County, Kenya. Respondents rated six statements regarding the role of technology training for adopting electric vehicles using a five-point Likert scale. The results are shown in Table 2.

Table 2: Descriptive Statistics on Technological Training (n = 402)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
There are enough training programs about Electric Automobiles technology.	20 (5.0%)	41 (10.2%)	89 (22.1%)	154 (38.3%)	98 (24.4%)	3.24	1.09
Training on Electric Automobiles is available when I need it.	16 (4.0%)	46 (11.4%)	88 (21.9%)	156 (38.8%)	96 (23.9%)	3.34	1.08
The training content fits my job needs.	21 (5.2%)	39 (9.7%)	85 (21.1%)	158 (39.3%)	99 (24.7%)	3.67	1.06
The training is practical and useful in my work.	18 (4.5%)	42 (10.4%)	87 (21.6%)	151 (37.6%)	104 (25.9%)	3.87	1.09
Training has improved my ability to work with Electric Automobiles.	19 (4.7%)	40 (10.0%)	81 (20.1%)	160 (39.8%)	102 (25.4%)	3.62	1.07
I feel more confident using electric automobile technologies after training.	17 (4.2%)	43 (10.7%)	83 (20.6%)	157 (39.1%)	102 (25.4%)	3.73	1.08
Mean						**3.58**	**1.08**

From the results, technological training has positive effects on the adoption of electric cars in Nairobi city county. In relation to whether there is adequate training program on electric cars technology, the respondents

answered that 154 (38.3%) agreed, 98 (24.4%) strongly agreed, 89 (22.1%) were neutral, 41 (10.2%) disagreed and 20 (5.0%) strongly disagreed. $\bar{X}$ = 3.24 and σ = 1.09 shows that respondents perceived that there are some limitations with regard to the adequacy of training programs available, hence the need for more frequently and accessible technological training. In relation to whether electric car training is available whenever one needs it, the respondents indicated that 156 (38.8%) agreed, 96 (23.9%) strongly agreed, 88 (21.9%) were neutral, 46 (11.4%) disagreed and 16 (4.0%) strongly disagreed. The $\bar{x}$ = 3.34 and σ = 1.08 implies that there are moderate perceptions of the availability of the training.

Regarding the suitability of the training materials for respondents' job requirements, 158 (39.3%) of the respondents agreed and 99 (24.7%) of the respondents strongly agreed on the issue while 85 (21.1%) of the respondents were neutral, 39 (9.7%) disagreed and 21 (5.2%) strongly disagreed. This is evident from the fact that the $\bar{x}$ = 3.67 and σ = 1.06 imply that the training materials were found to be relevant to their profession by the respondents. On the appropriateness of the training and usefulness in their job, 151 (37.6%) of the respondents agreed and 104 (25.9%) of the respondents strongly agreed while 87 (21.6%) of the respondents were neutral, 42 (10.4%) disagreed and 18 (4.5%) strongly disagreed. The $\bar{x}$ = 3.87 and σ = 1.09 demonstrate strong positive perceptions regarding the practical usefulness of technological training and represent the highest-rated aspect of the construct.

For the statement on whether technological training had improved the ability of the respondents to handle electric automobiles, 160 (39.8%) of the respondents agreed and 102 (25.4%) strongly agreed while 81 (20.1%) were neutral, 40 (10.0%) disagreed and 19 (4.7%) strongly disagreed. From the mean and standard deviation ($\bar{x}$ = 3.62 and σ = 1.07), there is general agreement that technological training helped improve the ability of the respondents to handle electric automobiles. On whether respondents felt more confident when handling electric automobile technologies following training, 157 (39.1%) agreed and 102 (25.4%) strongly agreed while 83 (20.6%) were neutral, 43 (10.7%) disagreed and 17 (4.2%) strongly disagreed. With regard to the descriptive statistics, the mean and standard deviation ($\bar{x}$ = 3.73 and σ = 1.08), the positive perception shows the contribution of technological training to the confidence of the respondents in using electric automobile technologies. Descriptive statistics for technological training showed that the mean and standard deviation were $\bar{x}$ = 3.58 and σ = 1.08. indicating moderate agreement regarding the effectiveness of technological training in supporting electric automobile adoption in Nairobi City County. Results especially indicate higher perception concerning the practical utility of training, relevance of training content, improvement in technical skills, and confidence, whereas adequacy and availability of technological training programs were rated relatively low. The same trend was observed by Mugo and Wanjiru (2024) as they found that practical, skill-based learning plays a critical role in adopting technology in the transport industry in Kenya.

The qualitative findings complemented the quantitative results in that they revealed that technological training positively affected the technical knowledge, practical skills, confidence, and competence of working with electric automobile systems of the participants. In particular, the respondents appreciated practical training concerning battery systems, charging equipment, maintenance, and customer service. Nevertheless, they indicated relatively short training periods, too much theoretical knowledge, lack of advanced diagnostic and repair knowledge, different levels of previous knowledge of the participants, and insufficient availability of continuous training as significant barriers. The respondents suggested more practical workshops, online training courses, contextually relevant training material, and collaboration between the governmental agencies, educational organizations, and electric automobiles as necessary measures. These results are in agreement with those reported by Otieno et al. (2023). Consistent with the findings of Otieno et al. (2023), continuous professional development and flexible training processes enhance the organizational ability to adopt emerging technologies.

The Resistance Management and Electric Automobile Adoption

The third objective aimed at investigating the impact of resistance management on the adoption of electric cars in Nairobi City County of Kenya. Respondents employed a five point Likert scale to rate six items relating to resistance management concerning the adoption of electric cars. The results are shown in Table 3.

Table 3: Descriptive Statistics on Resistance Management (n = 402)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
CBC-approved textbooks are sufficient for learners in this school.	18 (10.0%)	26 (14.4%)	34 (18.9%)	66 (36.7%)	36 (20.0%)	3.42	1.23
Learners have regular access to required CBC textbooks during lessons.	16 (8.9%)	24 (13.3%)	32 (17.8%)	72 (40.0%)	36 (20.0%)	3.53	1.17
The school has adequate teaching and learning materials to support CBC delivery.	20 (11.1%)	28 (15.6%)	36 (20.0%)	62 (34.4%)	34 (18.9%)	3.34	1.27
Available instructional materials are aligned with CBC requirements.	14 (7.8%)	22 (12.2%)	33 (18.3%)	75 (41.7%)	36 (20.0%)	3.54	1.12
The school has adequate ICT facilities to support CBC instruction.	26 (14.4%)	34 (18.9%)	40 (22.2%)	50 (27.8%)	30 (16.7%)	3.14	1.34
Teachers and learners effectively use digital tools in CBC learning activities.	22 (12.2%)	30 (16.7%)	38 (21.1%)	58 (32.2%)	32 (17.8%)	3.27	1.29
Overall Mean						**3.37**	**1.24**

The findings suggest that resistance management positively contributes to the uptake of electric cars in Nairobi City County. Concerning whether organizations had effective methods of recognizing resistance to the uptake of electric cars, 161 (40.0%) respondents agreed, 89 (22.2%) strongly agreed, 89 (22.2%) were neutral, 44 (10.9%) disagreed, and 19 (4.7%) strongly disagreed. This is illustrated by $\bar{x} = 3.31$ and $\sigma = 1.08$ which indicate moderate perceptions on the presence of effective mechanisms for recognizing resistance. On whether organizations collected feedback on concerns about electric cars, 155 (38.6%) respondents agreed, 101 (25.1%) strongly agreed while 83 (20.6%) were neutral, 43 (10.7%) disagreed, and 20 (5.0%) strongly disagreed. These are indicated by $\bar{x} = 3.72$ and $\sigma = 1.11$ which indicate positive perceptions on feedback collection and the best-rated aspect of resistance management.

In terms of organizational responses to issues raised regarding electric automobiles, 157 (39.1%) agreed and 93 (23.1%) strongly agreed while 91 (22.6%) were neutral, 39 (9.7%) disagreed and 22 (5.5%) strongly disagreed. The values of $\bar{x}=3.59$ and $\sigma=1.10$ imply that there was general agreement that organizations have responded effectively to the issues raised on electric automobiles. On whether the individuals felt that their issues regarding electric automobiles were taken seriously, 160 (39.9%) agreed and 91 (22.6%) strongly agreed while 88 (21.9%) were neutral, 42 (10.4%) disagreed and 21 (5.2%) strongly disagreed. The values of $\bar{x}=3.26$ and $\sigma=1.09$ show comparatively weak perception regarding how the issues were taken seriously.

As regards whether the introduction of electric cars was done fairly, 162 (40.3%) responded in the affirmative and 95 (23.7%) strongly in the affirmative, 85 (21.1%) respondents felt neutral, 41 (10.2%) disagreed, and 19 (4.7%) strongly disagreed. The fact that the $\bar{x} = 3.58$ and $\sigma = 1.08$ suggests that respondents generally agree that electric automobiles were introduced fairly. As regards whether decisions concerning electric automobiles

were made transparently, 158 (39.3%) respondents agreed and 97 (24.1%) strongly agreed, but 86 (21.4%) respondents were neutral, 38 (9.5%) disagreed, and 23 (5.7%) strongly disagreed. The $\bar{x} = 3.60$ and $\sigma = 1.10$ shows that there were positive perceptions regarding transparency of electric automobile decision-making. The descriptive statistics on resistance management produced an overall $\bar{x} = 3.51$ and $\sigma = 1.09$ showing moderate agreement regarding the effectiveness of resistance management in ensuring adoption of electric automobiles in Nairobi City County. The findings especially show strong perceptions regarding feedback collection, transparency of decision making, organizational responsiveness, and fairness in implementation. Resistance identification and individual concern resolution were comparatively low-rated.

Qualitative findings backed up the quantitative findings in that resistance to electric automobiles was linked to high cost, lack of charging infrastructure, technological inadequacies, and ambiguity in the use of new electric automobile technologies. It was stated by respondents that awareness campaigns, demonstration exercises, clear communication, participation of stakeholders, and good feedback channels could eliminate such resistance. Nevertheless, lack of consistent follow-ups and delays in response from organizations to concerns of stakeholders were cited as some of the hindrances to this process. It was thus stated by respondents that there should be continuous participation of stakeholders and quick responses to their concerns. This is in agreement with Kamau & Muli (2024) in which they pointed out the significance of employees' participation and information sharing in organizational transitions in Kenya's automotive industry.

Strategic Partnerships and Electric Automobile Adoption

The fourth objective was to examine the impact of strategic partnerships on the adoption of electric vehicles in Nairobi City County in Kenya. The subjects responded to six statements about strategic partnerships using a five-point Likert scale regarding their impact on the adoption of electric vehicles. These results are shown in Table 4.

Table 4: Descriptive Statistics on Strategic Partnerships (n = 402)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	SD
External partners are involved in planning Electric Automobile projects.	18 (4.5%)	39 (9.7%)	88 (21.9%)	162 (40.3%)	95 (23.6%)	3.75	1.07
Other organizations contribute to planning Electric Automobiles strategies.	19 (4.7%)	41 (10.2%)	86 (21.4%)	157 (39.1%)	99 (24.6%)	3.64	1.09
We work closely with partners to support Electric Automobiles adoption.	20 (5.0%)	38 (9.5%)	89 (22.1%)	159 (39.6%)	96 (23.8%)	3.57	1.08
Partner collaboration helps us make progress with Electric Automobiles.	21 (5.2%)	42 (10.4%)	85 (21.1%)	154 (38.4%)	100 (24.9%)	3.45	1.10
Partners provide resources and expertise for Electric Automobiles projects.	23 (5.7%)	40 (10.0%)	83 (20.6%)	152 (37.8%)	104 (25.9%)	3.66	1.11
Contributions from partners improve the success of Electric Automobiles adoption.	22 (5.5%)	43 (10.7%)	84 (20.8%)	153 (38.1%)	100 (24.9%)	3.52	1.10
Mean						**3.60**	**1.09**

Results indicate the positive effect of strategic partnerships in the uptake of electric automobiles in Nairobi City County. In regards to whether external partners were involved in electric automobile project planning, 162 (40.3%) of the respondents agree, 95 (23.6%) strongly agree, 88 (21.9%) are neutral, 39 (9.7%) disagree, and 18 (4.5%) strongly disagree. $\bar{X} = 3.75$ and $\sigma = 1.07$ are positive perceptions concerning the involvement of external partners in project planning, hence the highest rated component of strategic partnerships. Concerning whether other organizations participated in electric automobile strategy planning, 157 (39.1%) respondents agree and 99 (24.6%) strongly agree, but 86 (21.4%) are neutral, 41 (10.2%) disagree, and 19 (4.7%) strongly disagree. The $\bar{x} = 3.64$ and $\sigma = 1.09$ demonstrate general agreement regarding inter-organizational participation in strategic planning.

In relation to the collaboration between organizations and their partners to promote electric automobile adoption, 159 (39.6%) responded agreeing, and 96 (23.8%) responded strongly agreeing, while 89 (22.1%) were neutral, 38 (9.5%) disagreed, and 20 (5.0%) strongly disagreed. $\bar{X} = 3.57$ and $\sigma = 1.08$ show agreement among the respondents on the collaboration between organizations and partners to promote the adoption of electric automobiles. In relation to the extent that partner collaboration enabled organizations to make progress in their electric automobiles, 154 (38.4%) agreed, and 100 (24.9%) strongly agreed, while 85 (21.1%) were neutral, 42 (10.4%) disagreed, and 21 (5.2%) strongly disagreed. $\bar{X} = 3.45$ and $\sigma = 1.10$ show moderate agreement on the contribution of partner collaboration to electric automobile initiatives.

As far as the resources and expertise from partners for electric automobile projects was concerned, 152 (37.8%) respondents agreed and 104 (25.9%) strongly agreed, while 83 (20.6%) respondents were neutral, 40 (10.0%) disagreed, and 23 (5.7%) strongly disagreed. The $\bar{x} = 3.66$ and $\sigma = 1.11$ show positive perception on the contribution of partners in providing resources and expertise. As for the improvement of the success of electric automobile adoption through contributions from partners, 153 (38.1%) respondents agreed and 100 (24.9%) strongly agreed, while 84 (20.8%) were neutral, 43 (10.7%) disagreed, and 22 (5.5%) strongly disagreed. The $\bar{x} = 3.52$ and $\sigma = 1.10$ reveal general agreement on the contribution of partners in improving electric automobile adoption. In terms of the descriptive statistics of strategic partnerships, there is an overall $\bar{x} = 3.60$ and $\sigma = 1.09$, showing general agreement on the contribution of strategic partnerships to electric automobile adoption in Nairobi City County. The findings specifically indicate higher perception on external partner involvement in project planning, resource and expertise provision, and participation in strategic planning processes, whereas progress due to partner collaboration and adoption success contributions had relatively lower perceptions.

Findings from the qualitative study complemented the results obtained from the quantitative analysis through the demonstration that strategic partnerships contributed to the diffusion of electric automobiles through charging infrastructure provision, technical and capacity building, resource mobilization, public sensitization, and policy intervention. Collaboration with energy firms, government agencies, financial organizations, universities, manufacturing industries, international organizations, and NGOs was cited as being particularly significant. The reliance on donor funds and the sustainability of certain partnerships were highlighted as critical issues in this regard. As such, the respondents underlined the significance of sustainable partnerships that would build local technical capacity, provide funding, increase charging infrastructure provision, and develop policies. This finding is congruent with the study conducted by Waweru and Kihara (2024), where inter-organizational collaborations facilitate green mobility development through resource and joint development efforts.

Electric Automobile Adoption

Respondents were asked to indicate their level of agreement with six statements describing the adoption of electric automobiles in Nairobi City County using a five-point Likert scale. The construct assessed electric automobile ownership and usage, future adoption intentions, financial feasibility, operational and maintenance costs, and the availability and accessibility of charging infrastructure. The findings are presented in Table 4.7.

Table 5: Descriptive Statistics on Electric Automobile Adoption (n = 402)

Statement	SD F (%)	D F (%)	N F (%)	A F (%)	SA F (%)	Mean	Std. Dev
I possess and actively operate an Electric Automobile as part of my regular transportation.	28 (7.0%)	52 (12.9%)	88 (21.9%)	139 (34.6%)	95 (23.6%)	3.54	1.19
I have a definite intention to acquire and operate an Electric Automobile within the next two years.	22 (5.5%)	43 (10.7%)	80 (19.9%)	154 (38.3%)	103 (25.6%)	3.68	1.12
The purchase price of Electric Automobiles is financially feasible and justifiable for my circumstances.	25 (6.2%)	48 (11.9%)	85 (21.1%)	160 (39.9%)	84 (20.9%)	3.57	1.14
The operational and maintenance expenses of Electric Automobiles are financially sustainable for me.	26 (6.5%)	45 (11.2%)	83 (20.6%)	162 (40.3%)	86 (21.4%)	3.59	1.13
Public and private charging infrastructure for Electric Automobiles is sufficiently available and conveniently located for my use.	24 (6.0%)	40 (10.0%)	86 (21.4%)	161 (40.0%)	91 (22.6%)	3.63	1.10
I can reliably access Electric Automobile charging facilities without significant effort or inconvenience.	23 (5.7%)	42 (10.4%)	90 (22.4%)	155 (38.6%)	92 (22.9%)	3.63	1.09
Mean						**3.61**	**1.13**

From the findings, it can be deduced that there is generally a positive attitude towards the use of electric automobiles in Nairobi City County. On the question of whether respondents owned and used an electric automobile as their mode of transport, 139 (34.6%) agreed, 95 (23.6%) strongly agreed, 88 (21.9%) were neutral, 52 (12.9%) disagreed, and 28 (7.0%) strongly disagreed. From the above findings, it is clear that the respondents moderately own and use electric automobiles as per $\bar{x} = 3.54$ and $\sigma = 1.19$. The relatively high value of the standard deviation suggests the variation in the level of adoption of electric automobiles.

On whether respondents intended to buy and use an electric automobile within the next two years, 154 (38.3%) agreed, 103 (25.6%) strongly agreed, 80 (19.9%) were neutral, 43 (10.7%) disagreed, and 22 (5.5%) strongly disagreed. From the above findings, the $\bar{x} = 3.68$ and $\sigma = 1.12$ indicate that there is a relatively strong intention among the respondents to adopt electric automobiles in the future. This suggests that although

current ownership levels remain moderate, a considerable proportion of respondents are willing to adopt electric automobiles in the near future.

As far as the feasibility and justification of the cost of purchasing electric automobiles is concerned, 160 (39.9%) agreed and 84 (20.9%) strongly agreed while 85 (21.1%) had no view on the matter, 48 (11.9%) disagreed and 25 (6.2%) strongly disagreed. The $\bar{x}$= 3.57 and σ = 1.14 show that there was moderate agreement about the feasibility of the cost of purchasing electric automobiles. However, the results clearly imply that cost was a factor of concern for a considerable number of respondents. As far as the sustainability of the operating and maintenance cost of electric automobiles is concerned, 162 (40.3%) agreed and 86 (21.4%) strongly agreed. On the other hand, 83 (20.6%) did not have any opinion on the matter, 45 (11.2%) disagreed and 26 (6.5%) strongly disagreed. The $\bar{x}$ = 3.59 and σ = 1.13 indicate the general agreement that electric automobiles had sustainable operating and maintenance cost.

In terms of adequacy and convenience of public and private charging infrastructure for electric automobiles, 161 (40.0%) respondents agreed and 91 (22.6%) strongly agreed, whereas 86 (21.4%) respondents were neutral, 40 (10.0%) disagreed, and 24 (6.0%) strongly disagreed. $\bar{x}$= 3.63 and σ = 1.10 are an indication of generally positive attitudes towards the availability and positioning of the charging infrastructure in Nairobi City County. In respect to respondents being able to access the charging facilities of electric automobiles without much hassle or difficulty, 155 (38.6%) respondents agreed and 92 (22.9%) strongly agreed, whereas 90 (22.4%) respondents were neutral, 42 (10.4%) disagreed, and 23 (5.7%) strongly disagreed. $\bar{x}$ = 3.63 and σ = 1.09 is an indication that respondents believed that the charging facilities were accessible. However, the neutral and negative responses indicate that accessibility may not be consistent across all locations within Nairobi City County.

These results show that the use of electric vehicles in Nairobi City County has been mostly favorable, with a mean score of $\bar{x}$ = 3.61 and standard deviation of σ = 1.13. The respondents showed especially positive views concerning the future intention to adopt and availability of charging infrastructure. However, actual adoption and utilization had a comparatively lower mean score, while financial feasibility was still a problem for some of the respondents. This means that while the willingness to adopt electric vehicles is fairly high, the process of turning the adoption intention into reality may rely on increased affordability, finance opportunities, and charging infrastructure. This finding is in line with the research by Waweru and Kihara (2024) where affordability and infrastructure availability were found to be important factors in adopting electric vehicles in Africa.

The findings from the qualitative research confirmed the results of the quantitative analysis by revealing that awareness of the environment, expected cost-saving during operation, and sustainability of the institutions led to the use of electric automobiles in Nairobi City County. The interviewees stated that saving money on the purchase of fuel and being an environmentally friendly means of transport in the urban areas motivated people to use electric vehicles. Corporate sustainability objectives were also a motivation for organizations to adopt electric automobiles. However, interviewees mentioned several obstacles that impeded the adoption of the technology, such as the cost of the initial purchase, financing options, importation issues, and lack of charging stations. Despite the fact that some of the respondents enjoyed the use of the charging facilities, especially the private ones, others found the lack of geographical coverage, congestion, and unreliable charging facilities as obstacles to the use of electric automobiles. The respondents suggested the enhancement of financial incentives, development of charging network, improvement in terms of financing and leasing programs, and increased awareness of electric automobiles. These findings indicate that sustained policy support, improved infrastructure, affordable financing, and continued stakeholder engagement are essential for strengthening electric automobile adoption in Nairobi City County.

Correlation Analysis

The Pearson correlation was performed to establish the existence of any relationship among communication strategy, technology training, resistance management, strategic partnerships, and use of electric cars in Nairobi City County. The findings are displayed in Table 4.8.

Table 5: Correlation Analysis

Variables	1	2	3	4	5
1. Communication Strategies	1				
2. Technological Training	0.602**	1			
3. Resistance Management	0.556**	0.589**	1		
4. Strategic Partnerships	0.583**	0.612**	0.598**	1	
5. Electric Automobile Adoption	0.635**	0.642**	0.615**	0.654**	1

** Correlation is significant at $p < 0.01$.

Source: Field Data (2025)

Results indicate that there is a positive and statistically significant relationship between all aspects of change management and electric automobile adoption in Nairobi City County. The highest relationship is seen between strategic partnerships and electric automobile adoption ($r = 0.654$, $p < 0.01$), then technological training ($r = 0.642$, $p < 0.01$). There is a positive and statistically significant relationship between communication strategies and electric automobile adoption ($r = 0.635$, $p < 0.01$) while resistance management had a positive and statistically significant relationship with electric automobile adoption ($r = 0.615$, $p < 0.01$). The findings validate Diffusion of Innovations theory, Technology Acceptance Model, Lewin's Change Management model and Stakeholder Theory in the sense that electric automobile adoption can be enhanced by communication, technological capacity building, resistance management and strategic partnerships.

Multiple Regression Analysis

Multiple regression was done to ascertain the effect of communication strategies, technical training, resistance management, and strategic alliances on the uptake of electric vehicles in Nairobi City County.

Table 6: Regression Model Summary

Model	R	R^2	Adjusted R^2	Std. Error of the Estimate
1	0.641	0.411	0.405	0.386

The regression model was moderate ($R = 0.641$), explaining 41.1% of the variability in electric automobile adoption ($R^2 = 0.411$; Adjusted $R^2 = 0.405$). This suggests that communication, technological training, resistance management, and strategic alliance can together predict electric automobile adoption in Nairobi City County. The other 58.9% of variability in electric automobile adoption can be attributed to other variables that have not been considered in this model.

Analysis of Variance

To assess the overall significance of the regression model, ANOVA was conducted.

Table 7: ANOVA Results for Regression Model

Model		Sum of Squares	df	Mean Square	F	Sig.
1.	Regression	64.33	4	16.08	107.94	0.000
	Residual	92.36	397	0.23		
	Total	156.69	401			

According to the results from ANOVA, the regression equation was found to be significant at F = 107.94 and p < 0.001. These results reveal that communication strategy, technological training, resistance management, and strategic partnerships collectively exert a significant effect on the adoption of electric cars in Nairobi City County.

Regression Coefficients

The regression coefficients were calculated for measuring the effect of each independent variable individually on electric automobile usage.

Table 8: Regression Coefficients

Model		Unstandardized (B)	Std. Error	Standardized (Beta)	t	Sig.
1	(Constant)	0.423	0.168	–	2.52	.012
	Communication Strategies	0.298	0.044	0.345	6.77	.000
	Technological Training	0.251	0.048	0.289	5.23	.000
	Resistance Management	0.183	0.049	0.202	3.73	.000
	Strategic Partnerships	0.205	0.046	0.237	4.46	.000

From the results obtained, it can be seen that all the four variables were positively and significantly influential on electric car adoption. The variable that emerged the most influential was the communication strategies (β=0.345, p<0.001), followed by technological training (β=0.289, p<0.001), strategic partnering (β=0.237, p<0.001) and resistance management (β=0.202, p<0.001). These results have shown that there is a need to strengthen communication strategies, technological training, strategic partnering and resistance management in order to increase electric car adoption in Nairobi City County.

CONCLUSION AND RECOMMENDATIONS

The research study was done to assess the effect of change management on the adoption of electric automobiles in Nairobi City County, Kenya. The results indicated that there was a positive effect of communication strategies on electric automobile adoption. Most of the respondents agreed that there was a role played by communication strategies in electric automobile adoption ($\bar{x}$ = 3.44) while correlation analysis showed a strong positive effect of communication strategies on electric automobile adoption (r = 0.635, p < 0.01). It was further found out that communication strategies had the strongest effect on electric automobile adoption (β = 0.345, p < 0.001), indicating that strengthening message consistency, clarity of information, communication effectiveness, and convenient communication channels enhances electric automobile adoption.

Further to this, the study found out that technological training had a positive impact on the acceptance of electric cars. In general, technological training was found to have positively impacted the acceptance of electric cars ($\bar{x}$ = 3.58), while further correlation analysis indicated a positive and significant association with electric car adoption (r = 0.642, p < 0.01). Further regression analysis found technological training to be the second strongest predictor (β = 0.289, p < 0.001), indicating that increased training programs, specific training for roles, improved learning and competency after training increase electric car acceptance.

The research further revealed that resistance management played an important role in the adoption of electric cars. Participants felt that resistance management facilitated electric car adoption ($\bar{x}$ = 3.51). Correlation analysis showed that there was a significant positive correlation between resistance management and electric car adoption (r = 0.615, p < 0.01). Resistance management also emerged as a significant predictor in regression analysis (β = 0.202, p < 0.001); however, its effect was somewhat less than communication, technology training, and strategic partnering. The results show that it is crucial to recognize resistance, gather

and address stakeholder complaints, and maintain fairness and transparency to overcome resistance and improve electric automobile acceptance.

It was also established from the results that strategic partnerships facilitated the adoption of electric cars. The respondents largely agreed that strategic partnerships facilitate electric car adoption ($\bar{x} = 3.60$), while correlation analysis showed the highest positive correlation with electric car adoption ($r = 0.654$, $p < 0.01$). In the regression analysis, strategic partnerships proved to be the third strongest predictor ($\beta = 0.237$, $p < 0.001$) in which the use of external partners, planning together, sharing of resources, technical skills, and collaborative implementation play an important role in facilitating electric car adoption in Nairobi City County.

In the regression analysis, all the four change management practices were found to predict electric car adoption significantly. Communication strategies were shown to be the strongest predictor ($\beta = 0.345$, $p < 0.001$), followed by technological training ($\beta = 0.289$, $p < 0.001$), strategic partnerships ($\beta = 0.237$, $p < 0.001$), and resistance management ($\beta = 0.202$, $p < 0.001$). The regression model in general accounted for 41.1% of the variance in electric car adoption ($R^2 = 0.411$, $p < 0.001$) demonstrating that strengthening change management practices substantially enhances the adoption of electric automobiles in Nairobi City County.

Change management practices have been found to facilitate the use of electric automobiles in Nairobi City County. Communication helps in creating knowledge and awareness, as well as improving confidence in electric car technologies, whereas technological training creates the necessary technical and competency skills needed for using electric automobiles. Management of resistance helps in facilitating adoption of electric cars in that it manages stakeholders' fears of adopting new technology in a manner that is both fair and transparent. Strategic partnerships help in promoting collaboration, technical support, resource mobilization, and development of necessary infrastructure. All these contribute to the successful adoption of electric automobiles in Nairobi City County.

Recommendations to improve technological communication strategies include ensuring clear, consistent, coordinated, and available information on electric cars. There should be public information campaigns which will communicate the advantages of electric cars economically, environmentally, and in operations. Organizations should improve their technological training by ensuring there are regular training programs, refresher classes, demonstration sessions, and competency training tailored to specific roles to improve the skills of employees and users. Moreover, organizations must develop mechanisms that will allow organizations to effectively manage any resistance by developing methods to identify, respond to, and address stakeholder concerns and issues through feedback systems to provide transparency and fairness in the adoption process of the use of electric mobility. Again, government bodies, electric automobile manufacturers, banks, energy companies, educational institutions, and development partners need to develop strong partnerships that will enhance the establishment of electric mobility infrastructure and technology transfer in order to foster financing, training, and resource development in relation to the use of electric vehicles.

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