

LINKING PRODUCT QUALITY TO ELECTRIC VEHICLE PURCHASE DECISION: THE MEDIATING ROLE OF BRAND IMAGE IN MAKASSAR

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Abstract

The purpose of this study is to examine how product quality influences consumers' decisions to buy electric cars in Makassar City, using brand image as a mediating factor. The swift expansion of electric vehicle adoption necessitates a comprehensive understanding of the factors influencing customer purchasing behavior in this nascent sector. A quantitative methodology utilizing an explanatory study design was implemented to examine the causal links among the variables. The population comprised consumers who had acquired or utilized electric vehicles in Makassar City, while the precise population size remained unspecified. A purposeful non-probability sampling strategy was employed, resulting in 105 respondents who completed a structured online questionnaire sent using Google Forms. The data were analyzed utilizing SEM-PLS with SmartPLS to investigate both direct and indirect effects among the constructs. The findings demonstrate that product quality positively and significantly impacts purchase decisions, product quality positively and significantly influences brand image, and brand image positively and significantly affects purchase decisions. Additionally, brand image serves as a partial mediator in the correlation between product quality and purchasing decisions. The findings indicate that superior product quality in electric vehicles is more influential in influencing purchasing decisions when it concurrently cultivates a favorable brand image in consumers' perceptions, thus offering strategic insights for manufacturers and distributors in formulating marketing strategies that enhance both product quality and brand image.

Keywords: *Product Quality; Brand Image; Purchase Decision; Electric Cars; Sem-Pls*

1. INTRODUCTION

The Indonesian automotive sector is experiencing substantial upheaval due to heightened focus on environmental concerns, energy efficiency, and regulations aimed at decreasing exhaust emissions (Bibra et al, 2022; Mahalana & Yang, 2021). One of the sectors exhibiting rapid developmental dynamics is electric vehicles, especially electric cars, propelled by several programs and incentives from both national and regional governments

(Sathiyani et al., 2022). Electric cars are not merely an alternate form of transportation, it also represents a modern, eco-friendly, and forward-thinking lifestyle (Albatayneh et al., 2024; Aksen et al., 2018; Costa et al., 2021). This circumstance compels electric car producers and distributors to prioritize not only the technical attributes of the product but also to generate value through exceptional product quality and the establishment of a robust brand image in consumers' perceptions (Chen et al., 2016; Zhao et al., 2024).

The government offers diverse support at the national level, including fiscal incentives, tax reductions, and the establishment of public electric vehicle charging station infrastructure (SPKLU) to expedite the adoption of electric vehicles (Ajeigbe & Holt, 2025; Zhang et al., 2018). In Makassar, a key economic growth hub in Eastern Indonesia, electric vehicles are being introduced and promoted through numerous dealerships and official agencies (Nur et al., 2024). Nonetheless, the adoption of electric vehicles encounters certain obstacles, such as inadequate charging infrastructure, comparatively elevated initial costs, and public skepticism over the dependability of battery technology and the resale value of the vehicles (Mersky et al., 2016; Sovacool et al., 2018). This scenario illustrates that the choice to acquire electric vehicles is shaped by a multifaceted interplay of intellectual and psychological elements.

Product quality is a primary consideration for consumers when deciding to acquire an electric vehicle. In this context, product quality is demonstrated by battery performance and range, electric motor efficiency, driving comfort, safety features, charging convenience, and the overall durability of the vehicle's components (Kumar, 2024; Un-Noor et al., 2017; Murugan et al., 2025). Consumers typically select electric vehicles that fulfil or beyond their expectations for energy efficiency, daily practicality, and long-term operational expenses. Consequently, product quality serves as a crucial basis in influencing consumer views and assessments of electric vehicles.

Nonetheless, purchasing decisions are influenced not solely by the product's functional and technical characteristics. The consumer decision-making process encompasses the steps of need recognition, information search, alternative appraisal, purchase decision, and post-purchase behavior, all impacted by cognitive, affective, and behavioral factors (Kanagal, 2016; Han, 2021; Petcharat & Leelasantitham, 2021). The Stimulus–Organism–Response (S-O-R) model elucidates that external stimuli, including product quality and brand image, are initially processed by customers prior to eliciting a response manifested as attitude or purchasing choice (Zhu et al., 2020). In the realm of electric vehicles, product quality and brand reputation act as catalysts that mold perceptions of advantages, dangers, and perceived value, thereby affecting consumers' readiness to transition from traditional automobiles to electric ones (Shwe., 2024; Chen & Hou, 2026)

The brand image is a crucial factor in differentiating electric vehicles from numerous competing brands and models in the marketplace. The brand image of electric vehicles includes consumer impressions of the manufacturer's reputation, technological

advancement, dedication to environmental sustainability, and the social standing conferred by the brand (Shinde et al., 2025). Electric car brands regarded as innovative, dependable, and eco-friendly are generally more trusted and preferred than those without a robust reputation. According to Brand Equity Theory, a favorable brand image can bolster consumer trust, diminish perceived risk, and reinforce loyalty, ultimately leading to an increase in electric car purchasing decisions (Chen & Hou, 2026; Zheng et al., 2025).

In Makassar, an increasing trend indicates that certain consumers are expressing interest in electric vehicles; nevertheless, this curiosity has not universally translated into actual purchases. Preliminary observations of many present and prospective electric car consumers reveal that product quality and brand reputation are the primary factors in the evaluation of vehicle alternatives. Consumers recognize that electric vehicles have benefits regarding energy economy and technology. Nonetheless, they remain apprehensive about the constraints of charging infrastructure, alongside issues related to battery longevity and maintenance expenses. This demonstrates a discrepancy between the favourable perception of product quality and brand image and the actual purchasing decisions in the market.

In theory, brand image ought to enhance the impact of product quality on purchasing decisions (Rosanti & Salam, 2021). According to Brand Equity Theory, consistent product quality cultivates a favourable brand image, thus enhancing consumer trust and loyalty (Mukhtar et al., 2024). From the standpoint of Perceived Value Theory, brand image functions as a value augments that intensifies the sense of advantages relative to the expenses borne by consumers (Chen et al., 2022). An electric vehicle characterized by superior product quality and a robust brand image will be regarded as possessing greater value, hence enhancing the probability of consumer acquisition.

Conversely, several consumers in Makassar perceive electric vehicles as comparatively novel, precarious, and not yet thoroughly evaluated for prolonged utilization. This condition indicates that high product quality alone does not guarantee a purchase decision unless it is supported by a brand image that mitigates perceived risk and enhances consumer confidence. Consequently, it is crucial to comprehend the degree to which brand image functions as a psychological mechanism that connects the impact of product quality on the purchasing decision of electric vehicles.

Extensive research has been conducted on product quality, brand image, and purchasing decisions across numerous categories, including packaged beverages, motorcycles, shoes, and other retail items. Prior studies consistently indicate that product quality and brand image exert a favourable and substantial influence on purchasing decisions, with brand image potentially serving as a mediating variable in this dynamic (Maia et al., 2023; Nilowardono et al., 2024). Nevertheless, the conclusions about the strength and significance of brand image's mediating role remain inconsistent, influenced by product attributes, market setting, and the consumer profile under examination (Abadi et al.,

2024; Akbar et al., 2025; Anugrah Dewi & Bastaman, 2024; Haeruddin, 2025; Yasmun et al., 2025).

In the realm of electric vehicles, prior research predominantly emphasizes factors such as price, governmental policies, and infrastructure availability as primary determinants of purchasing decisions, whereas investigations specifically examining the impact of product quality on purchasing decisions, with brand image as a mediating variable, remain comparatively scarce (Alzoubi et al., 2025; Bhalla et al., 2018; Mandys, 2021; Yang & Tan, 2019; Purwanto & Irawan, 2024; Qian et al., 2019). Moreover, studies undertaken beyond Java, namely in Makassar as a proxy for the electric vehicle market in Eastern Indonesia, are also notably limited. This signifies a study deficiency regarding both product context and geographical scope (Gerber Machado et al., 2023; Toolib et al., 2023).

According to the description, at least three primary gaps may be discerned. The product context gap arises from the predominance of prior research focused on fast-moving consumer goods and traditional automotive products, while electric vehicles, as a novel technological offering with distinct risk and benefit attributes, have not been thoroughly examined regarding product quality, brand image, and purchasing decisions. The mediating variable role gap refers to the inconsistency in empirical findings concerning the strength and significance of brand image as a mediator in the relationship between product quality and purchasing decisions. Third, the regional context gap refers to the deficiency of research concentrating on electric vehicle users in Makassar City.

2. RESEARCH METHOD

This study employs a quantitative methodology with an explanatory research design, intended to elucidate the causal links between variables and evaluate the previously established hypotheses. The quantitative approach was selected due to its emphasis on objectively and systematically analyzing the correlations between variables through numerical data collected from respondents. Explanatory research aims to empirically elucidate the impact of product quality on electric car purchasing decisions, both directly and indirectly through brand image as a mediating variable.

This study was performed on electric vehicle consumers in the city of Makassar. The choice of Makassar City is predicated on its status as a hub of economic growth in Eastern Indonesia, hence emerging as a promising market for electric car development. The study population comprises all consumers in Makassar who have acquired or utilized electric vehicles, either for personal or operational usage. The population is classified as limitless due to the challenges in precisely determining its exact number and its inherently dynamic nature.

The employed sample strategy is non-probability sampling utilizing the purposive sampling method. The requirements for participants in this study include existing in the city of Makassar and having previously acquired or utilized an electric vehicle. The determination of sample size indicates a minimum requirement of five to ten times the

number of study indicators in SEM-PLS analysis. This study utilized a sample size of 105 respondents, deemed sufficient to satisfy the minimum criteria for SEM-PLS analysis.

3. RESULTS AND DISCUSSION

3.1 Results

Table 1. Descriptive Statistics of Research Variables

No	Research Variable	Index Score	Category
1	Product Quality	High	High
2	Brand Image	High	High
3	Purchase Decision	High	High

Source: *Data Processed, 2026*

According to Table 1, all research factors fall inside the high group, signifying that respondents possess a favorable view of product quality, brand image, and electric vehicle purchasing decisions. This favorable perception is established by direct consumption experiences and respondents' assessments of the perceived product advantages.

The index values categorized as high for all criteria suggest that most respondents offer consistent and predominantly favorable evaluations. The even spread of values across the variables indicates the absence of significant disparities in perception among the respondents. This suggests that the experience of utilizing electric automobiles yields a consistent perception regarding product quality, brand reputation, and purchase choices.

The predominance of the perceived quality component in the product quality variable suggests that consumer evaluations rely more on subjective experiences than on the product's technical features. The perception of driving performance and energy efficiency are the primary factors directly experienced by consumers while using the car. Simultaneously, the durability aspect, which also garners excellent evaluations, signifies that consumers possess confidence in the battery's safety and the vehicle's resilience over the warranty time, both of which are critical considerations in electric vehicles.

The brand image variable reflects a high assessment of brand identity, with the benefits and advantages of the brand, suggesting that electric vehicles possess easily identifiable qualities. The uniformity of visual design and brand message facilitates consumer recall and differentiation of this product from competing brands. This is shown in the respondents' capacity to link the car to certain attributes without necessitating further information.

The prominence of post-purchase behavior in the buy decision variable signifies that the experience following the acquisition is a crucial element in the customer decision-making process. The satisfaction experienced promotes repeat purchases and

recommendations, demonstrating a connection between usage experience and future buying behavior.

Table 2. Hypothesis Testing Results (SEM-PLS)

Variable	Coefficient	T Statistics	P Values	Results
Product Quality => Purchase Decision	Positive	> 1.96	< 0.05	Accepted
Product Quality => Brand Image	Positive	> 1.96	< 0.05	Accepted
Brand Image => Purchase Decision	Positive	> 1.96	< 0.05	Accepted
Product Quality => Brand Image => Purchase Decision	Positive	> 1.96	< 0.05	Partial Mediation

Source: *Data Processed, 2026*

According to Table 2, all variable associations exhibit a positive and significant impact. The quality of electric vehicles, encompassing battery longevity, range, driving performance, and technological reliability, has been demonstrated to substantially affect purchasing decisions and brand perception. The brand image of electric vehicles, shaped by the manufacturer's reputation, perceptions of innovation, and associations with environmental sustainability, substantially influences purchasing decisions. The results of the indirect effect testing indicate that brand image serves as a partial mediator in the relationship between electric vehicle quality and purchase decisions, suggesting that consumers assess not only the functional attributes of the vehicle but also the brand's reputation and credibility when making electric vehicle purchase decisions.

The findings from the structural model analysis indicate that the interrelations among variables in the research model have a consistent and steady directional influence. The lack of trivial links signifies that the study model has effectively elucidated the associations among variables. The significant values derived from the bootstrapping technique demonstrate that the model possesses a high degree of reliability in elucidating the examined structural relationships.

The identification of a partial mediation role suggests that the brand image variable does not entirely supplant the direct impact of electric vehicle quality on purchasing decisions. Instead, it enhances that relationship through consumer perception mechanisms related to advantages and brand trust. The decision to acquire electric vehicles is impacted by multiple mechanisms, including direct assessment of vehicle quality (such as battery

longevity, operational expenses, and maintenance simplicity) or through established brand perception. The outcomes of the structural model analysis offer a more detailed understanding of the relational dynamics among variables in this study, especially regarding customer behaviour towards electric automobiles.

3.2 Discussion

The research findings indicate that product quality exerts a favorable and significant influence on purchasing decisions. The data suggest that consumer perception of electric car quality significantly influences buying decisions. The product's quality, demonstrated by performance, battery efficiency, and post-use happiness, instills consumer trust in its value for purchase. For student customers, product quality emerges as the primary rational factor due to its direct correlation with daily mobility experiences. This study corroborates the notion that product quality is a significant factor influencing consumer purchase behavior, as evidenced by the research conducted by Asti et al (2023), Isbahi (2023), Mashao & Sukdeo (2018), Arif & Siregar (2021) and Haeruddin (2025).

The research findings demonstrate that product quality positively and significantly influences brand image, in addition to directly affecting purchasing decisions. These findings suggest that the brand image of electric vehicles is influenced not just by promotional activities or marketing communication but also by the perceived consistency of product quality across consumers. High-quality products will cultivate favorable connections, enhance trust, and reinforce consumer perception of the brand. A gratifying user experience constitutes the cornerstone for establishing a robust brand image. This outcome aligns with the findings of Cahayani & Sutar (2020), Chandra (2023) and Riswandani and Mahargiono (2023), which assert that product quality is a crucial determinant in the development of brand image.

Moreover, the research findings indicate that brand image exerts a positive and significant influence on purchasing decisions. Consumers with a favorable opinion of brand image exhibit greater confidence and assurance in their purchasing decisions, as a robust brand signifies reliability and quality. In a competitive market with numerous comparable products, brand image functions as a risk mitigation mechanism that aids consumers in streamlining their decision-making process. The findings align with the studies conducted by Yusuf (2021), Rosanti & Salam (2021), Haeruddin (2021), and Wardani & Nugraha (2022), which assert that brand image significantly influences consumer purchase decisions.

Moreover, the test results indicate that brand image serves as a partial mediator in the correlation between product quality and the purchasing choice of electric automobiles. These findings demonstrate that product quality influences purchasing decisions both directly and indirectly through the establishment of brand image. The efficacy of electric car products—encompassing battery longevity, energy economy, and safety features—will significantly influence purchasing decisions if it translates into a favorable brand reputation among

consumers. This partial mediation role suggests that while product quality is the primary determinant, brand image functions as a psychological mechanism that amplifies its impact. The outcomes of this investigation align with the conclusions of Maia et al (2023), Saraswati & Giantari (2022) Hokky and Bernarto (2021).

This talk demonstrates that product quality and brand image are two interconnected and inseparable aspects impacting consumers' purchasing decisions about electric vehicles (Ardiyanto et al., 2025; Trinando & Afwa, 2026). Product quality constitutes the primary basis that influences consumer experience and assessment, whereas brand image enhances and amplifies the impact of product quality on purchase choices (Wafi & Maulana, 2024; Wisnuaji et al., 2026). These findings hold significant significance for electric car firms to concurrently uphold product quality consistency and enhance brand image to stably influence consumer purchasing decisions.

4. CONCLUSION

This research enhances the examination of customer behavior, specifically in formulating a model that elucidates the relationship among product quality, brand image, and purchasing decisions. The research findings indicate that product quality directly impacts purchase decisions and also indirectly influences them through brand image as a mediating variable. These findings confirm that brand image serves as a psychological mechanism connecting the functional qualities of a product with consumer purchase behavior. The identification of the partial mediating function of brand image enhances the theoretical comprehension that exceptional product quality is more influential in influencing purchasing decisions when it translates into a favorable brand perception among consumers. Consequently, product quality and brand image are two interconnected and inseparable elements that influence purchase decisions. This study's results theoretically offer empirical validation for the ideas of perceived quality and brand equity theory in elucidating the buying decision-making process, especially for electric vehicles.

The findings of this research suggest that electric car producers and marketers must emphasize the enhancement of product quality while concurrently managing brand image in a cohesive manner. Quality improvement initiatives must extend beyond technical dimensions, including battery efficiency enhancement, operational cost reduction, and charging system reliability, and should be effectively communicated to consumers to cultivate a brand image that is innovative, trustworthy, and environmentally sustainable.

Future study should incorporate additional characteristics that may influence electric car purchasing decisions, including risk perception, trust in technology, environmental concern, and government policy support (incentives, subsidies, and charging infrastructure). Furthermore, subsequent research could broaden the scope by contrasting diverse consumer segments (including distinct generations, urban versus rural areas, or individual versus corporate users) to ascertain whether the correlations among product quality, brand image, and purchasing decisions are uniform or differ across segments. Employing longitudinal designs or mixed methods approaches may be advantageous for capturing the dynamics of evolving views and brand image as the electric car market and its accompanying infrastructure develop.

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