Increasing Electric Vehicle Acceptance, an Insights into Reducing Range Anxiety

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Abstract: Given the increasing worldwide focus on sustainability, electric vehicles (EVs) have become important in the efforts to decrease carbon emissions and address climate change. Nevertheless, the broad acceptance of electric vehicles (EVs), especially in Indonesia, encounters substantial barriers, with range anxiety being one of the main issues. This article explores the complex nature of range anxiety, specifically examining its technological aspects and the important function of customer support in reducing the effects. This study uses Structural Equation Modeling (SEM) with a Partial Least Squares (PLS) approach to analyze the relationships among Charging Infrastructure, Customer Support, Perceived Technological Sophistication, and Range Anxiety. The data collected from 146 individuals aware regarding EV technology is analyzed. The findings suggest that customer service and perceived technological sophistication have a substantial effect on lowering range anxiety. However, the presence of charging infrastructure does not have a statistically significant influence on alleviating range anxiety. This discrepancy indicates a requirement for focused approaches that tackle both physical and psychological obstacles to electric vehicle (EV) adoption.

Keywords: Electric Vehicles (EVs), Charging Infrastructure, Perceived Technological Sophistication, Range Anxiety, Customer Support.

1. INTRODUCTION

Electric vehicle (EVs) are leading the way in reducing carbon emissions and tackling climate change, offering a possible replacement to traditional gasoline-powered vehicles [1]. EVs provide numerous environmental and operational advantages, such as reduced operating expenses and no emissions from the exhaust pipe. Still, their acceptance, especially in Indonesia, has been limited by range anxiety, a major concern about the driving distance EVs can cover and the availability of charging stations. This research investigates the complex nature of range anxiety, analyzing not only the technology side but also the customer support. This study suggests a comprehensive method to reducing range anxiety, which is crucial to accelerating the adoption of electric vehicles (EVs), by incorporating these factors. The Indonesia Electric Vehicle Outlook 2023 reveals a notable surge of 60% in worldwide electric vehicle sales, reaching an all-time high 10.6 million units in 2022. This surge is a result of Indonesia's initiatives to reduce carbon emissions in its transportation sector and fulfill its commitments under the Paris Agreement's Nationally Determined Contributions (NDC) targets. The nation's ambitious strategy involves raising the number of electric motorcycles and cars by 2025 and 2030, respectively. The increase in the adoption of electric vehicles (EVs) has been additionally stimulated by a cut in value-added tax (VAT) from 11% to 1% for electric cars that have a minimum of 40% locally sourced components. This has resulted in a substantial rise in sales for models such as Hyundai's IONIQ 5 and Wuling's Air EV, thanks to tax incentives offered by the government [2], [3]. While there has been a significant increase in the sales of electric vehicles (EVs), as indicated by the Indonesia Electric Vehicle Outlook 2023, the rate at which EVs are being adopted has not yet reached its full potential, primarily because of concerns about the limited driving range of these vehicles, often known as range anxiety. Range anxiety, which refers to the concern that an electric vehicle (EV) may not have enough charge to reach its destination, continues to be an important challenge. This fear eclipses the advantages of reduced carbon emissions and is in line with worldwide environmental goals. This concern restricts the wider acceptance of consumers and decelerates the shift towards a transportation system that is more sustainable and free from fossil fuels, despite the implementation of substantial tax incentives and government regulations intended to accelerate the adoption of electric vehicles.

Range anxiety has a substantial impact on users of battery electric vehicles (BEVs), acting as a psychological barrier to their general acceptance. This anxiety stems from anxieties about the battery running out of power before reaching a destination or a place to charge, and also includes worries about the amount of time it takes to charge. These concerns impact users' charging habits and travel plans, taking consideration the availability and duration of charging at infrastructure points. The combination of worries connected to distance and time not only affects the decisions made about everyday vehicle usage, but also discourages potential purchasers who compare the convenience of traditional vehicles with the limitations of electric mobility [4]. A number of important factors affect consumer willingness to buy battery electric vehicles. One of the many issues that arises is range anxiety, which is caused by the battery's limited driving range. [5]. The adoption of electric vehicle (EV) technology leads to a substantial decrease in emissions and reduces dependency on fossil fuels, representing a pivotal advancement towards achieving environmental sustainability and ensuring energy security. Nevertheless, the restricted distance that electric cars (EVs) can go in comparison to conventional gasoline vehicles is a significant factor in causing users to experience range anxiety. The worry about the possibility of not having enough battery power to reach a destination or a place to charge the electric vehicle is still a significant obstacle to the widespread acceptance of EVs, despite the advantages of this technology in reducing pollution and promoting a transition away from non-renewable energy sources. [6].

The adoption of electric vehicles (EVs) is an essential and unavoidable step in the pursuit of sustainable transportation, motivated by the pressing requirement to decrease carbon emissions and address climate change. Nevertheless, the fear of running out of battery power, known as range anxiety, poses a significant barrier to the widespread adoption of electric vehicles. Despite the environmental and economic advantages, it impedes customer confidence and readiness to adopt EV technology. Conquering this barrier is crucial for expediting the acceptance of electric automobiles. [7]. The primary obstacle to the widespread adoption of electric vehicles (EVs) in Indonesia is mostly due to range anxiety experienced by users, which is caused by the limited availability of charging or battery swapping infrastructure. Furthermore, there is a continuous discussion regarding the supremacy of charging stations compared to battery swap stations, which requires a thorough examination that takes into account demographic, geographic, cultural, and socio-economic viewpoints. [8]. Range anxiety is a significant obstacle that is preventing the broad acceptance of battery electric vehicles (BEVs). Range anxiety, caused by the dread of running out of battery power before reaching a destination or charging point, has a substantial impact on both daily car usage and the consumer market's desire to adopt electric mobility. The restricted range of electric vehicles, in comparison to conventional gasoline-powered vehicles, worsens these problems, impacting customers' charging routines and travel arrangements. Although EV technology provides significant environmental and economic benefits, including as huge reductions in emissions and reduced dependence on fossil fuels, the fear of running out of battery power, known as range anxiety, continues to be a significant obstacle. This barrier not only impacts individual choices but also presents a difficulty to the overall market expansion of electric vehicles (EVs).

In order to successfully alleviate concerns about limited driving range among individuals considering or already using electric vehicles (EVs), a comprehensive strategy is required. This strategy should primarily prioritize the advancement of technological complexity, namely in the field of battery technology. Cutting-edge battery technologies that provide extended driving ranges, accelerated charging times, and enhanced durability are essential for effectively tackling the root cause of range anxiety. This technological advancement holds the potential to increase the range of electric cars (EVs) on a single charge, so making them more convenient to use and comparable to traditional vehicles. Nevertheless, technological progress alone is unable to completely solve the problem of range anxiety. The development of charging infrastructure is equally crucial. Increasing the number of charging stations, particularly those that offer fast-charging capabilities, in various locations such as cities, rural areas, and important transportation routes, guarantees drivers a dependable and uninterrupted access to charging facilities. This network development alleviates concerns about depleting battery power at a significant distance from a charging station, hence improving the convenience of using electric vehicles for both long trips and regular commuting.

In addition to technical and infrastructural progress, support systems such as customer support are crucial. Superior customer service that offers expert advice, knowledge, and support for electric vehicle (EV) consumers. Customized customer assistance that specifically answers the concerns and inquiries of electric vehicle (EV) consumers has the potential to clarify the technology, hence enhancing its accessibility and reducing its perceived complexity. This kind of assistance not only alleviates concerns about the limited distance an electric vehicle can travel without recharging, but also promotes a favorable overall experience with electric transportation. Therefore, this article goes beyond solely analyzing the technological aspects of electric vehicle (EV) adoption. It explores the equally important function of customer service. The report emphasizes the importance of considering and solving both the physical and psychological obstacles to electric vehicle (EV) adoption by incorporating several comprehensive strategies. Given the complex strategy for reducing concerns about limited driving range in the deployment of electric vehicles (EVs), we put up the following hypothesis:

- Technological sophistication, significantly decreases range anxiety among potential and current EV users.
- The expansion and strategic distribution of EV charging infrastructure significantly decreases range anxiety among potential and current EV users.
- Enhanced customer support for EV users significantly decreases range anxiety among potential and current EV users.

2. LITERATURE REVIEW

Range anxiety is a psychological condition that affects both consumers and vehicle operators. It is caused by worries about the restricted distance that electric cars (EVs) can go without needing to be recharged. It includes the concern felt by consumers regarding the ability of electric vehicles (EVs) to go the necessary distances without depleting their energy supply, as well as the operator's anxiety about the vehicle running out of power during a voyage. The anxiety surrounding the vehicle's durability and the accessibility of charging infrastructure is recognized as a crucial barrier to the broader acceptance and adoption of electric mobility. This emphasizes the need of comprehending customer behavior towards electric vehicles. [9], [10], [11]. Perceived Technological Sophistication in this study refers to the degree to which persons see electric cars (EVs) as progressive, inventive, and modern products within the automobile industry. This construct incorporates the perception of electric vehicles (EVs) as symbols of advanced technology, showcasing modernity through their form and functionality, and symbolizing the most recent technological progress in the industry. This survey measures the opinions of the participants regarding the level of sophistication and innovation present in electric vehicles. It evaluates their perspectives on the technological advancements that electric vehicles represent in the automotive industry. [12], [13], [14], [15]. Previous study indicates that perceived ease of use in technology can accelerate the adoption rate of new technology in society [16], [17] and technology also one of competitive advantages for businesses to keep inline with the environment [18].

Technological advancement is essential in overcoming range anxiety, a major obstacle to the general acceptance of electric cars (EVs). Electric vehicle (EV) owners frequently misunderstand how well the battery capacities of available EVs align with their transportation requirements, which results in a desire for extended battery ranges and a hesitancy to embrace EVs. In order to reduce concerns about the limited range of electric vehicles, several solutions have been suggested. These include creating efficient charging management systems for EVs that can be charged while driving, incorporating intelligent human-machine interfaces (HMIs) that offer accurate strategies for dealing with range limitations, and addressing both user perception and actual factors that impact the range of EVs. These technological developments have the objective of enhancing the assurance of electric vehicle (EV) consumers, mitigating concerns about limited driving range, and fostering the acceptance and implementation of EV technology. [6], [19], [20], [21]. The exploration of technology solutions aimed at decreasing range anxiety reveals a notable relationship between technological sophistication and range anxiety. A charging station is a facility designed to supply electric power for charging electric vehicles (EVs) [22]. Charging stations play a crucial role in promoting the widespread use of electric vehicles (EVs) and the transition to a sustainable transportation system. The presence and ease of use of charging

infrastructure play a crucial role in motivating potential customers to switch from conventional to electric vehicles, thereby eliminating a major obstacle to the widespread adoption of EVs.

The density of charging stations is directly correlated with the level of range anxiety experienced by individuals when considering the adoption of electric vehicles. (EVs) [23], [24]. Increasing the number of charging stations might mitigate range anxiety, which is the apprehension of running out of battery power while traveling. [25]. The presence of charging stations offers reassurance to electric vehicle (EV) customers, ensuring that they can conveniently locate a charging port when necessary, so alleviating worries about depleting their battery charge. [26]. Consequently, this can enhance the inclination to embrace electric vehicles (EVs) by tackling one of the primary obstacles to their extensive use. [27]. Moreover, the effectiveness of charging stations is influenced by their proximity to densely populated regions and the presence of existing charging stations. In general, the existence and ease of access to charging stations are extremely important in reducing concerns about the limited range of electric vehicles and encouraging their widespread use. Customer support represents the communication and assistance provided by a corporation to customers following their purchase of a product. The role include responding to customer inquiries, resolving technical issues, diagnosing and rectifying product defects, and delivering comprehensive assistance to improve the client's satisfaction. [28]. Customer support is necessary for guaranteeing consumer satisfaction and cultivating lasting relationships with customers. The initial interaction with customers is frequently the primary point of contact and has the potential to greatly influence their image of the firm. [29], [30].

This study aims to explore the correlation between customer support and range anxiety by analyzing the overall connection between customer support and customer anxiety in general. Due to the lack of extensive research on the direct impact of customer support on range anxiety in the electric vehicle (EV) industry, this technique enables us to deduce the possible effect of customer support in reducing range anxiety. Recent study in different fields highlights the crucial importance of customer support and services in reducing consumer anxiety. This research reveals a complex connection that covers multiple aspects such as Web 2.0, omnichannel platforms, social anxiety, and e-commerce environments. Research indicates that increased customer involvement and support through Web 2.0 can enhance the quality of e-services. Additionally, studies on omnichannel customer experiences reveal that anxiety plays a role in moderating the relationship between consumer psychology factors and loyalty. This suggests that implementing effective customer service strategies can help alleviate anxiety in these circumstances. Moreover, those who experience social anxiety have a preference for particular online customer care channels. This highlights the importance of adapting customer support to meet the various demands of consumers. Relational marketing strategies that focus on mental benefits, trust, and hedonic value can help alleviate anxiety in e-commerce transactions. This highlights the importance of customer support in reducing consumer anxiety and promoting a positive relationship between the business and its customers. [31], [32], [32], [33].
Thus, Based on the above literature review, the hypothesis for this study is as follows:

- Hypothesis 1 (H1): Higher perceived technological sophistication among consumers is inversely related to the intensity of range anxiety.
- Hypothesis 2 (H2): The density and strategic location of charging stations are directly related to the alleviation of range anxiety
- Hypothesis 3 (H3): customer support plays a critical role in reducing range anxiety in the context of electric vehicle (EV).

3. METHOD

The purpose of empirical testing is to assess the correlation between perceived technological sophistication, charging station density, customer assistance, and range anxiety in the context of electric vehicle (EV) adoption. This study especially targets respondents in Indonesia who possess expertise in electric vehicles (EVs), so ensuring that the data collected accurately represents the perspectives of individuals who are

already well-versed in EV technology. The minimum sample size needed to obtain a confidence level of 95% and a margin of error of 10% has been determined to be 97 respondents. The study will utilize a non-probability sampling technique, namely convenience sampling, to collect data. The survey will be disseminated in Bandung to individuals who have exhibited expertise in electric vehicles, with the objective of gathering a diverse array of perspectives and experiences pertaining to EV utilization.

Before distributing the survey, the variables will be operationalized to match the defined concepts in the study context. The operationalization process entails defining indicators for each variable to ensure that the survey items effectively capture the core aspects of perceived technological sophistication, charging station density, customer support, and their impact on range anxiety among potential and current electric vehicle (EV) users.

Table 1. Variables Operationalization

Variables	Indicators
Range Anxiety (RA)	Concern about the mileage of electric vehicles (EVs)
	Mileage concerns on decision-making regarding electric vehicles.
Perception of Technological Sophistication (PTS)	Electric vehicles as highly sophisticated and innovative products.
	The technology behind electric vehicles conveys modernity.
Customer Support (CS)	Satisfaction with customer support for electric vehicle owners
Charging Infrastructure (CI)	The availability and convenience of electric vehicle (EV) charging stations.
	Adequacy of the charging infrastructure in Indonesia for daily use

Table 1 presents the operationalization of the main factors examined in this study, namely Range Anxiety, Perception of Technological Sophistication, Customer Support, and Charging Infrastructure. The measurement items for this study will be designed to reflect the defined indicators for each variable, in accordance with the operationalization.

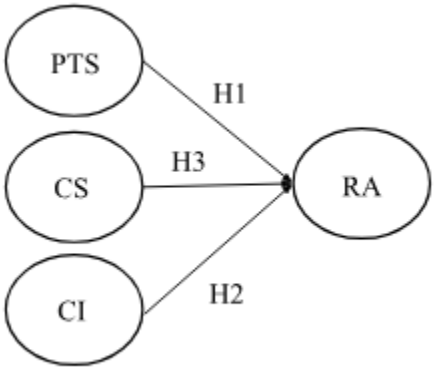

Fig 1. Reseach Model

Figure 1 depicts the research model that illustrates the hypothesized connections among the main variables in the study: Perception of Technological Sophistication (PTS), Customer Support (CS), Charging Infrastructure (CI), and Range Anxiety (RA). Hypothesis 1 (H1) states that Perception of Technological Sophistication (PTS) has a direct impact on Range Anxiety (RA). Hypothesis 2 (H2) suggests that Charging Infrastructure (CI) directly affects Range

Anxiety (RA). Hypothesis 3 (H3) posits that Customer Support (CS) has a direct impact on Range Anxiety (RA). This research will apply Structural Equation Modeling (SEM) with a Partial Least Squares (PLS) approach, using the SmartPLS software, to investigate the given hypotheses.

4. RESULT AND DISCUSSION

A sample of 146 respondents was analyzed to investigate the hypothesized relationships between perceived technological sophistication, charging station density, customer support, and range anxiety, within the context of electric vehicle (EV) adoption in Indonesia. The acquired data from the sample was analyzed using Structural Equation Modeling (SEM) using the Partial Least Squares (PLS) approach through the utilization of the SmartPLS software.

Table 2. Construct Reliability and Validity Result

	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
CI	0.678	13.834	0.769	0.644
CS	0.887	1.052	0.943	0.893
PTS	0.767	1.162	0.882	0.79
RA	0.836	0.994	0.92	0.852

Table 2 presents the reliability and validity statistics for the constructs evaluated in the study. The constructs of Customer Support (CS) and Range Anxiety (RA) demonstrate strong internal consistency and validity across all metrics. Furthermore, the construct of Perceived Technological Sophistication suggests high reliability and convergent validity. The reliability of the Charging Infrastructure (CI) is a bit below the appropriate threshold as shown by Cronbach's Alpha. Nevertheless, it is still within acceptable bounds. The abnormal rho_A result shows that recalibration or further study may be necessary. All constructs demonstrate high composite reliability and excellent Average Variance Extracted (AVE), showing that the survey items properly represent their respective constructs.

Table 3. Discriminant Analysis Result

	CI	CS	PTS	RA
CI	0.803			
CS	-0.029	0.945		
PTS	0.01	-0.089	0.889	
RA	0.199	-0.174	-0.202	0.923

Table 3 provides the results of the discriminant analysis using the Fornell-Larcker criterion. The matrix shows that all constructs have necessary discriminant validity. This is demonstrated by the fact that the square root of the Average Variance Extracted (AVE) for each construct (diagonal values) exceeds than its highest correlation with any other construct (off-diagonal values). The AVE square roots for Charging Infrastructure, Customer Support, Perceived Technological Sophistication, and Range Anxiety are 0.803, 0.945, 0.889, and 0.923 respectively. These values suggest the correlations between these factors are lower than their individual AVE square roots. These findings indicate that each construct is unique and encompasses occurrences that are not covered by the other constructs in the study.

Table 4. Model Fit Result

	Saturated Model	Estimated Model
SRMR	0.067	0.067
d_ULS	0.163	0.163
d_G	0.163	0.163
Chi-Square	166.571	166.571
NFI	0.635	0.635

Table 4 exhibits the model fit indices for both the saturated and estimated models in the study. The SRMR (Standardized Root Mean Square Residual), d_ULS (Unweighted Least Squares Discrepancy), and d_G (Geodesic Discrepancy) all show the same values for both models. The SRMR value of 0.067 is below the commonly accepted threshold of 0.08, indicating a satisfactory fit. Furthermore, the d_ULS and d_G values demonstrate equality in both models, demonstrating that there is no apparent disparity in the satisfactory level of fit between the saturated and estimated models. The Chi-Square statistic reveals a significantly high value. Nevertheless, it is important to consider that this statistic is influenced by the size of the sample, which may mitigate any potential concerns. The Normed Fit Index (NFI) has a value of 0.635, which falls below the intended threshold of 0.9. This indicates that there is room for improvement in the fit of the model. Overall, whereas certain indices such as SRMR show a satisfactory fit, others such as NFI imply that the model's ability to explain may be improved with more adjustments.

Table 5 Path Coefficient Result

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (|O/STDEV|)	P Values
Charging Infrastructure -> Range Anxiety	0.196	0.18	0.119	1.647	0.1
Customer Support -> Range Anxiety	-0.188	-0.185	0.078	2.4	0.017
Perceived Technological Sophistication -> Range Anxiety	-0.22	-0.224	0.078	2.832	0.005

The path coefficients presented in Table 5 provide a clear indication of the degree of correlation and statistical significance of the correlations between Charging Infrastructure, Customer Support, Perceived Technological Sophistication, and Range Anxiety. The examination of the path coefficients shows numerous levels of significance for the connections between the components. The relationship between Perceived Technological Sophistication (PTS) and Range Anxiety is statistically significant, with a p-value of 0.005, which is lower than the standard significance level of 0.05. The correlation between Customer support (CS) and Range Anxiety is statistically significant, as indicated by a p-value of 0.017. This finding reinforces the importance of customer support when measuring Range Anxiety.

However, the relationship between Charging Infrastructure (CI) and Range Anxiety, however it has a p-value of 0.100, does not meet the standard threshold for statistical significance. Within the parameters of this study, the impact of Charging Infrastructure on Range Anxiety is not statistically apparent. Further research is needed to fully understand its significance in relation to the adoption of electric vehicles. The absence of statistical significance in the correlation between Charging Infrastructure (CI) and Range Anxiety, specifically in the Indonesian context, can be attributed to various factors closely associated with the particular characteristics of the respondents and the current type of electric vehicles (EVs) in use.

Table 6. Path Coefficient Result

	CI	CS	PTS	RA
CI				0.196
CS				-0.188
PTS				-0.22
RA				

The examination of the path coefficients in Table 6 offers useful information into the effect of Charging Infrastructure, Customer Support, and Perceived Technological Sophistication on Range Anxiety among electric vehicle (EV) customers.The strong inverse correlation between Customer Support and Range Anxiety underscores the crucial role of high-quality customer service in addressing concerns related to the use of electric vehicles. Professional customer service that provides dependable aid and knowledge on electric vehicle maintenance and charging can significantly reduce users' anxieties. Moreover, the strong inverse correlation between Perceived Technological Sophistication and Range Anxiety highlights the influence of customers' beliefs regarding electric vehicle (EV) technology. An essential approach for reducing range anxiety and promoting wider adoption of electric vehicles (EVs) is to educate both future and present EV users about the sophisticated technology that powers EVs and its capability to meet their transportation requirements. These findings indicate that a comprehensive approach is needed to tackle range anxiety, with a focus on customer assistance and technology education in addition to infrastructure improvement.

The absence of statistical significance between Charging Infrastructure (CI) and Range Anxiety could be attributed to the particular characteristics of the study's respondent pool and the unique nature of the EV market in Indonesia. Firstly, the survey participants, who are mainly individuals aware about EV technology but not necessarily owners, may create their opinions about CI based on theoretical knowledge or information from others, rather than their own firsthand experience with EV charging. The lack of direct experience with charging infrastructure may lead to a diminished understanding of how it affects range anxiety. This is because their evaluations of the sufficiency of the infrastructure are not influenced by the daily need for charging. Furthermore, the prevalence of electric motorbikes in the Indonesian electric vehicle industry may influence the perception of the sufficiency of charging infrastructure. Considering the lower power requirements and more charging flexibility of motorcycles compared to electric cars, respondents may perceive the current charging infrastructure as adequate for their current needs, especially for motorcycle users. This viewpoint may underestimate the importance of a comprehensive public charging infrastructure, consequently impacting the perceived connection between electric vehicle charging infrastructure and the fear of running out of battery power, particularly in a market where motorcycles are widely used for transportation.

After analyzing the path coefficients and gaining a detailed understanding of how Charging Infrastructure, Customer Support, and Perceived Technological Sophistication impact Range Anxiety, several recommendations for EV adoption namely:

- To improve customer support, it is essential for electric vehicle (EV) manufacturers and service providers to invest in enhancing the quality of customer assistance, as there is a strong negative correlation between customer support and range anxiety. This may entail instructing personnel to offer specialized guidance on electric vehicle maintenance and charging, creating extensive web materials, and guaranteeing prompt and supportive customer care channels. It is essential to prioritize the accessibility and informativeness of customer service, specifically focusing on answering often encountered problems and queries regarding the utilization of electric vehicles (EVs).
- Emphasize Technology Education: The strong inverse correlation between Perceived Technological Sophistication and Range Anxiety indicates that educating the general population about the technological progress in electric vehicles (EVs) is crucial for reducing range anxiety. Possible measures could encompass public seminars, informational campaigns, and partnerships with educational institutions to emphasize the efficacy, dependability, and advantages of electric vehicle technology. The objective of these initiatives

should be to clarify the technology behind electric vehicles (EVs), highlighting how it fulfills the transportation requirements of customers and underscoring its ongoing progress.

- Tailoring Communication for Various EV Types: To effectively engage with the Indonesian EV market, particularly electric bikes, it is crucial to customize communication and marketing approaches to cater to the unique needs and preferences of motorcycle consumers. This may entail emphasizing the convenience and adaptability of charging alternatives for motorcycles and using specific strategies to instill trust and assurance among this particular group of users.

By implementing a comprehensive strategy that encompasses customer assistance, advanced technological education, and customized charging infrastructure development to cater to the specific requirements of the Indonesian market, stakeholders may successfully mitigate range anxiety and encourage greater acceptance of electric vehicles.

5. CONCLUSION

The analysis performed in this research presents compelling data concerning the hypothesized relationships that impact Range Anxiety among electric vehicle (EV) customers in Indonesia. The observed inverse correlation between Customer support and Range Anxiety reinforces the idea that proficient customer assistance plays a vital role in mitigating concerns over the use of electric vehicles, underscoring the need of dependable and informed customer care. The presence of a strong negative correlation between Perceived Technological Sophistication and Range Anxiety confirms the hypothesis that consumers' perceptions of the technological advancement of electric vehicles (EVs) are crucial in alleviating concerns about limited driving range. This emphasizes the need to educate consumers about EV technology. Nevertheless, the idea that the presence of Charging Infrastructure would have a substantial effect on Range Anxiety was not corroborated, as this correlation did not demonstrate statistical significance. The limitation of this research arises from the relatively small sample size of 146 respondents, as well as the fact that not all participants definitely had an electric vehicle (EV). Notwithstanding this constraint, the study provides significant perspectives on potential approaches to alleviate range anxiety among a wider demographic. It emphasizes the need of improving customer assistance and utilizing technological education as crucial methods for overcoming a major obstacle to the adoption of electric vehicles. Further investigation utilizing a more extensive and heterogeneous sample, which includes individuals who currently possess electric vehicles, might be advantageous in corroborating and broadening the scope of these discoveries.

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