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A Study on Students Perception Towards Purchase Intention of E-Vehicles in National Capital Region

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ABSTRACT

Electric vehicles (EVs) are growing in importance as the world moves toward greener transportation. They reduce carbon emissions and fossil fuel use. India emits the third most greenhouse gasses after China and the US. It accounts for 7.6% of emissions. India is following the global trend and making great contributions to electric mobility. Indian electric vehicle (EV) sales are soaring and could touch $113.99 billion by 2029.

National Capital Region is one of the best locations in the world for EVs and compatible infrastructure. This makes the location ideal for studying youth behavior. This study examines the entire electric vehicle segment and the factors that influence university students' intentions to buy electric cars in India.

The questionnaire yielded 272 valid responses from public and private universities in the National Capital Region. The study hypothesis was tested using PLS-SEM. The findings of the study show that all the factors considered for study (Perceived usefulness, expenses, enjoyment, risk and social factors) influence student's attitude towards e-vehicles. Intention is also influenced by attitude acting as a mediator. The findings of the study will be of great value to the policymakers and entrepreneurs who want to work in the area of EV and create awareness among the students for future infrastructure development in the EV market.

Keywords: E-Vehicles, PLS-SEM, TAM, Students, Attitude, Intention

INTRODUCTION

The switch to electric vehicles (e-vehicles) has gotten a lot of interest in both academic and public circles. This is mostly because we need to find long-term solutions to transportation problems as the climate changes across the world. The Intergovernmental Panel on Climate Change Report (2022) identifies the escalating concentration of greenhouse gases, including CO_2 and N_2O, as the principal driver of climate change. This phenomenon adversely impacts Earth's natural ecology. The International Energy Agency forecasts that by 2030, emissions from the transportation sector will constitute fifty percent of overall greenhouse gas emissions (International Energy Agency, 2018).

India is making huge strides toward electric mobility. This transformation is being driven by government legislation, new technology, more people becoming conscious of environmental issues, and big expenditures in infrastructure, manufacturing, and battery development. The government urges car makers to start developing electric cars (EVs). We are now highly reliant on other countries for fuel, if usage of electric vehicles picks up it will save government expenditure on oil and save more than $60 billion on oil. It will also help to lower emission by 37%. To achieve this goal the Indian government has also launched programs like FAME II and the electric mobility promotion initiative.

Jaiswal et al. (2021) in his study pointed out that financial incentives funded by the government play a very important role adoption of e-vehicles in India. His findings were also supported by Ali and Naushad (2022), who cited other elements such as charging infrastructure, total cost and concerns related to

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environment. Research done in other countries like Iceland, Norway, Denmark and Finland pointed out to multiple factors including consumer experience, fuel efficiency, lower cost and car-to-grid capabilities as emphasized by Chen et al. (2020).

A major concern which is a hindrance to adoption of electric vehicles is the hesitance to accept new technology. The amount of money to be spend initially in comparison to other vehicles available in the market and range issues retard broader acceptability. Gap between the development of technology and low rate of consumer adoption highlights the study's problem. This reluctance of prospective buyers to adopt e-vehicles underlines the complex dynamics of awareness, perceptions and doubts in the mind of purchasers. Other than these, demographic characteristics such as income, social status, age, gender significantly influence adoption behaviour. Singh et al. (2020a, 2023b).

This study seeks to analyze and assess the primary factors affecting students' inclinations to acquire electric automobiles. The subsequent sections are structured as follows: Section 2 reviews literature, Section 3 set out the research methodology, Section 4 talks about the data analysis and findings, and Section 5 probe the study's limitations and offers recommendations for future research.

All the concerns, factors, apprehensions have been discussed in number of theories and models such as: "attribution theory", "IDT (innovation diffusion theory)", "NAM (norm activation model)", "RBM (risk–benefit model)", "SDT (self-determination theory), "TAM (technology acceptance model)", "TPB (theory of planned behavior)", "TRA (theory of reasoned action)", "UGT (uses and gratifications theory)", "UTAUT (unified theory of acceptance and use of technology)", and "VBN (values–beliefs–norms)."

By 2030, the Government of India expects all vehicles must be electric. A white paper on electric vehicles by the Society of Automobile Manufacturers (SIAM, 2017) asserts that by 2030, 40% of new vehicles in terms of sales will be of electric vehicles and 100% by 2047, which coincides with the centenary of the nation's independence.

A study by Lai et al., (2015) & Guo and Huang (2023) stressed the importance of perceived economic benefit, environmental concerns and viewpoint of environmental policies. It also talked about factors impacting people's decision to adopt e-vehicles.

Dangelico and Pujari, (2010), Wang et al., (2021) in their research came out with a conclusion that social media and digital platforms notably contribute to the spread of information and shaping of attitude regarding e-vehicles. Geng et al., (2019); Ji and Huang, (2018) study on adoption of electric vehicles indicated that tax refunds, subsidies provided by the government and regulatory steps are important for promotion and creating awareness. Bjerkan et al., (2016a;) Tu and Yang, (2019;) Virmani et al., (2023) affirmed that inconsistency in execution of policy and dubiety regarding incentives (long-term) my hamper prospective customer comprehension and trust in e-vehicles. For enhancing awareness among consumers, it is necessary to market efficiently and communicate effectively using latest techniques.

Therefore, acceptance is considered to be more important that adoption of EVs in the current scenario. So, for the electric market to do good, it is very crucial to know about people's perception about EVs- good, bad or neutral.

LITERATURE REVIEW

A considerable number of scholars historically have examined electric vehicles from the standpoint of consumer purchasing behavior. Several studies examined the correlation between specific lifestyles and the adoption of electric vehicles (Ozaki and Sevastyanova 2011; Gallagher and Muehlegger 2011; Graham-Rowe et al. 2012; Schuitema et al. 2013; Kormos and Gifford 2014), while others highlighted the influence of retail pricing and fuel costs on consumers' purchasing intentions (Sovacool and Hirsh 2009; Axsen et al. 2010; Egbue and Long 2012; Jansson et al. 2017). Additionally, various studies have examined the impact of maintenance costs (Zhang et al. 2011; Dhar et al. 2015; Noel et al. 2017) as well as the availability of charging points and purchase incentives (Graham-Rowe et al. 2012; Krupa et al. 2014; Dhar et al. 2015) on customer adoption behavior. In research done by Egbue and Long (2012)

and Zhang et al. (2013), the researchers came up with the conclusion that performance aspects, financial incentives, psychological needs and environmental concerns remarkably influence customers' purchase intention.

Perceived Usefulness (PU)

According to the TAM theory, perceived usefulness is how much consumers think that using a given product or technology will help them do their jobs better. Users are more likely to accept a new tech product or service the more they personally recognize it (Davis, 1989). According to the VAM theory, perceived usefulness is how people think about the benefits of meeting their own requirements, such as judging the quality and superiority of items or services (Kim et al., 2007). The meanings of the two are very much the same. In this study, perceived usefulness means how customers see the practical benefits of buying and utilizing green products, such as making things more efficient and meeting their needs.

Perceived Enjoyment (PE)

Enjoyment is a very notable part of the value acceptance paradigm. Voss et al., (2003) pointed out that utilitarian consumption and hedonic consumption are two types of product consumption. Consumers of utilitarian consumption consume product with defined aims in mind, which points out to task-oriented behaviour. On the other side, people with hedonic motivation do so to just feel good, without any specific goal in mind.

"Perceived enjoyment," or "perceived pleasure," is the emotional benefits that people get from using a technology or product, especially the internal and emotional gratification that can make them feel good. This intrinsic enjoyment changes based on how users see it, and it can have an even bigger effect on how much they accept technology than usefulness (Kim et al., 2007)**.**

Perceived Cost (PC)

This article looks at the losses that consumers face when they buy new energy cars. These losses can be broken down into actual monetary expenses and non-monetary costs, like time and convenience costs. This article differentiates perceived loss into perceived cost and perceived risk based on the features and qualities of buying new energy cars. Perceived cost is the amount of money that customers think they paid. Perceived cost and perceived value are negatively related, and perceived cost is frequently based on the negative consequences that the product or service has on consumers. The worse the bad consequences, the worse the product's perceived value by customers.

Perceived Risk (PR)

Harvard University scholars first came up with the idea of perceived risk, and Cunningham (1967) expanded on this term, which was accepted by all experts and scholars. He said that any way that people buy things can't tell you if the results will make them happy, but they are very likely to make them unhappy. Because of this, customers' buying choices are not very certain, and if people don't do what they were supposed to do, they will feel risk at any time. "Technicality" refers to the time, mental, and convenience charges that consumers have to pay to use a product or service. These are also known as users' "non-monetary expenses."

Social Influence (SI)

Social influence is the effect that people like friends, family, peers, and the larger social network have on a consumer's choices, especially when it comes to choosing and using a product. It includes things like peer pressure, subjective norms, social approbation, and cultural impact. Most of the people before buying something, which is visible to others like electric vehicles (EVs) want confirmation from others to support their decision.

Previous studies have rapidly confirmed that social influence is a main variable, when people decide to buy EV or not. Tu and Yang (2019) showed that subjective norms have a major influence on how people buy electric vehicles, and Khazaei and Tareq (2021) pointed out that in Malaysia, social approval is an important factor in adoption of battery electric vehicles. Axsen et al. (2013) also confirmed that behaviours in a person's social network had a very big impact on their decision to adopt something new.

Venkatesh & David (2000) and Nysveen (2005) were of the opinion that before people do something new, they

wait for family and friends' approval. The opinions and endorsement of family, friends, and close associates are crucial indicators for individuals considering the acquisition of an electric vehicle (EV).

Chen and Tung (2014) back up this idea by saying that social conformity can make people do things just because their group supports them. Rasouli and Timmermans's (2016) results show that the social network of a person is very important in getting them to buy an electric car.

Attitude (ATT)

According to Ajzen (1991) perception and attitude noticeably impact consumer purchasing behavior. Adoption of new technologies, including electric vehicles (EVs) is considerably influenced by the attitude of potential consumers (Ozaki and Sevastyanova, 2011), whereas kahn (2007) acknowledged that customers attitude and perceptions are main predictors of adoption behaviour. Furthermore, early adopters are going to be the customers who have a favourable opinion about the electric vehicles discovered the Egbue and Long (2012). Likewise, Jensen et al. (2013), Dhar et al. (2015), Hsu et al. (2017), Shalender and Yadav (2018), and Li et al. (2018) emphasized the significance of attitude in the electric vehicle adoption process. Beck et al. (2016) identified ATT as the paramount element influencing adoption, demonstrating its direct impact on consumer intentions through an analysis of the most significant attitudinal statements.

Purchase Intention (PI)

Purchase intention predicts consumers' actual purchases. Thus, experts in consumer psychology and behavior employ purchase intention as the dependent variable, and their research has matured the idea. According to Fishbein and Ajzen's 1975–1980 studies, purchase intention is customers' subjective preference for a product, which affects their buying behavior. Dodds (1991) defined purchase intention as the subjective probability of customers buying a product after learning its contents. The higher the purchase intention, the more likely related consumption activity will occur. Han Rui and Tian Zhilong (2005) believed that consumers' purchasing intention is their likelihood of buying a product or service. Mullet (1985) noted that consumers' purchasing intention is a product or service preference influenced by internal and external influences. Purchase intention, which Bagozzi (1989) defined as the utility function of consumers' effort to buy a product or service, determines purchasing behavior.

Below is a compilation of few studies on e-vehicles in India, we can easily make out that there is a strong need to focus on students and NCR. It's the NCR where maximum no. of e-vehicles is sold but still its below expectations.

Table 1: Studies on E-vehicles in India

Topic / Paper Title	*Authors (Year)*	*Factors Studied*	*Model/ Framework Used*	*Summary*	*Key Findings*	*Research Gap / Limitation*
Modeling usage intention for sustainable transport: Direct, mediation, and moderation effect	Saurabh Kumar (2022)	Purchase price, perceived behavioral control, personal norms, environmental concerns, driving range, income	Structural Equation Modeling (SEM)	Made a model to show why people in India want to use EVs, concentrating on the most important factors.	Price, behavioral control, and environmental considerations are all important, but aging moderates some of these interactions.	There is a need for further research that focus on students and Delhi/NCR, but they are constrained by the sample size of the general population.
Exploring consumers' motives for electric vehicle adoption: bridging the attitude–behavior gap	P. Chaturvedi et al. (2022)	Hedonic, gain, and normative motives; personal moral standards	Confirmatory Factor Analysis, (SEM)	Looked into the reasons why people in South Asia, notably students, want to buy EVs.	Hedonic reasons are the strongest, followed by gain and normative motives. Moral norms also affect favourable feelings about buying an EV.	Not enough focus on Delhi/NCR; need to break down students into smaller groups.

Topic / Paper Title	*Authors (Year)*	*Factors Studied*	*Model/ Framework Used*	*Summary*	*Key Findings*	*Research Gap / Limitation*
Consumer preferences for electric vehicles: a literature review	F. Liao, E. Molin, B. van Wee (2017)	Socio-economic, psychological, mobility, social influence, financial, technical, infrastructure	Conceptual Framework	A full look at what people, notably young people and students, want in electric vehicles.	Policy and incentives are important, but so are economic and psychological variables, infrastructure, and social impact.	There isn't enough data particular to India, Delhi, or NCR; we need more real-world studies on students.
Adoption of electric vehicle: A literature review and prospects for sustainability	R. Kumar, Kumar Alok (2020)	Charging infrastructure, cost, incentives, dealership experience, marketing, socio-demographics	Integrative Review, Nomological Network	Put together 239 articles about EV adoption that talked about the factors that affect it, the factors that change it, and the effects it has.	The most research has been done on charging infrastructure, cost, and incentives. Not enough research has been done on dealership experience and marketing.	Not enough attention has been paid to the student/ youth market and the Delhi/NCR area; dealership and marketing tactics have not been researched enough.
Consumer Adoption of Electric Vehicles: A Systematic Literature Review	P. Bryła, S. Chatterjee, B. Ciabiada-Bryła (2022)	Incentives, charging infrastructure, awareness, risk-benefit beliefs, performance, safety, range	Systematic Literature Review	Looked at 57 articles about how people buy and use electric vehicles (EVs).	Incentives and infrastructure are important; lack of trust in performance and range are problems; awareness is critical.	Not enough focus on students and Delhi/NCR; more specific study is needed.
The impact of motivation, intention, and contextual factors on green purchasing behavior: New energy vehicles as an example	Zhengxia He et al. (2020)	Motivation, intention, social norms, behavior ability, institutional/ technological context	Motivation–Intention–Context–Behavior	A qualitative study of how people buy green products using new energy vehicles as an example.	Motivation has an effect on intention, as do social standards and the situation. There is a moderate difference between intention and behavior.	Not specific to Delhi/NCR or students; more research with numbers is needed.
Mathematical modelling of electric vehicle adoption: A systematic literature review	Lucy Maybury et al. (2022)	Barriers, adoption process, modeling techniques	Mathematical Modeling	A systematic study of mathematical models for EV adoption, looking at problems and future research.	Finds the primary obstacles and modeling methods; stresses the need for improved data and models that are specific to the situation.	Not enough focus on students and young people; only a few applications from India, Delhi, and NCR.

Source: Authors' compilation

Conceptual Framework

The study aims to assess consumers' willingness to purchase electric vehicles and to analyze the effects of six factors: perceived usefulness, perceived enjoyment, perceived cost, perceived risk, social influence, and attitude. The model recommended for testing is depicted in Figure 1.

Research Hypothesis

H1 There is a significant effect of perceived usefulness on purchase intention of e-vehicles through the mediating role of attitude towards e-vehicles.

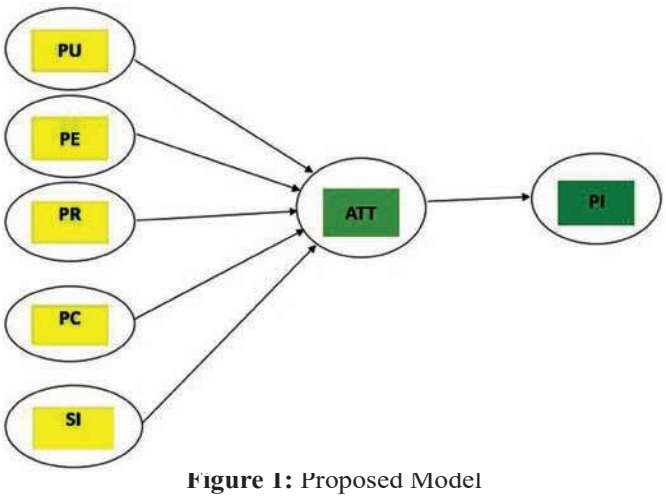

Figure 1: Proposed Model

H2 There is a significant effect of perceived enjoyment on purchase intention of e-vehicles through the mediating role of attitude towards e-vehicles.

H3 There is a significant effect of perceived cost on purchase intention of e-vehicles through the mediating role of attitude towards e-vehicles.

H4 There is a significant effect of perceived risk on purchase intention of e-vehicles through the mediating role of attitude towards e-vehicles.

H5 There is a significant effect of social influence on purchase intention of e-vehicles through the mediating role of attitude towards e-vehicles.

H6 There is a significant effect of attitude on purchase intention of e-vehicles.

METHODOLOGY

Electric automobiles (EVs) are rare on the roads in India and hard to find in stores. People who might want to use or buy electric vehicles may have never seen, used, or charged one before. People don't know much about the features and attributes of these cars. A standardized questionnaire based on earlier studies was used to collect data. The instrument created included details regarding constructs and their elements. There were two parts to the questionnaire. The first part was about the respondents' demographics, such as their gender, age, and level of education. In the next part of the questionnaire, the model variables are looked at.

The mediator variable, five independent variables, and one dependent variable were all present. The pilot study comprised 28 items for seven test variables. The final list contained all items as all showed good validity and reliability. The PI to adopt was assessed by the items.

Sample Size

There is no definitive formula for determining the appropriate sample size in structured equation modelling (SEM). Nonetheless, various authors have proposed differing sample sizes, such as 100 or 200 (Boomsma, 1985), 5 or 10 observations for each estimated parameter (Bentler & Chou, 1987; Bollen, 1989), and 10 cases for every variable (Nunnally, 1967) as alternative guideline. The chosen participants were students (graduates, post-graduates and doctorates) of the university. The students resided in the National Capital Region (NCR). Out of the 400 respondents approached, 272 responded. All data was accounted for, and the responses were deemed valid. No missing data was reported.

Measurement

The introductory segment evaluates the demographic attributes as categorical data. The second section evaluates the model variables using a 5-point Likert scale, with 1 representing strong disagreement and 5 denoting strong agreement. For analysis of data Structural Equation Modelling through Smart PLS 4.0.9.6 was used. It consists of two steps: (1) The measurement model which validates the model; and (2) Structural Model which establishes the relationship between the independent and dependent variable. In other words, it evaluates the extent and direction of the association.

Data Analysis and Results

The pilot questionnaire evaluated 70 participants for reliability. Hair, Anderson, Tatham, and Black (1998) proclaimed that value over 0.6 is considered reliable. Cronbach's alpha ranged from .802 to .889. Tables 2 and 3 illustrate the age and educational backgrounds of the respondents. Among the total of 272 respondents, 49% are girls and 51% are boys.

Table 2: Age of the Respodents

Age	*Respondents Age in %*
Below 23 years	44%
23-27 years	23%
23-27 years	30%
Above 27 years	3%

Source: Authors' compilation

Table 3: Educational Qualification of the Respodents

Educational Qualification	*Respondents in %*
Doing Graduation	65%
Doing post-graduation	19%
Doing Ph.D.	16%

Source: Authors' compilation

Structural equation modeling is an excellent method employed to determine the relationships between multiple constructs concurrently. The current study utilized Structural Equation Modeling to confirm the predictive relationship among the five exogenous variables (PU, PE, PR, PC & SI), the endogenous

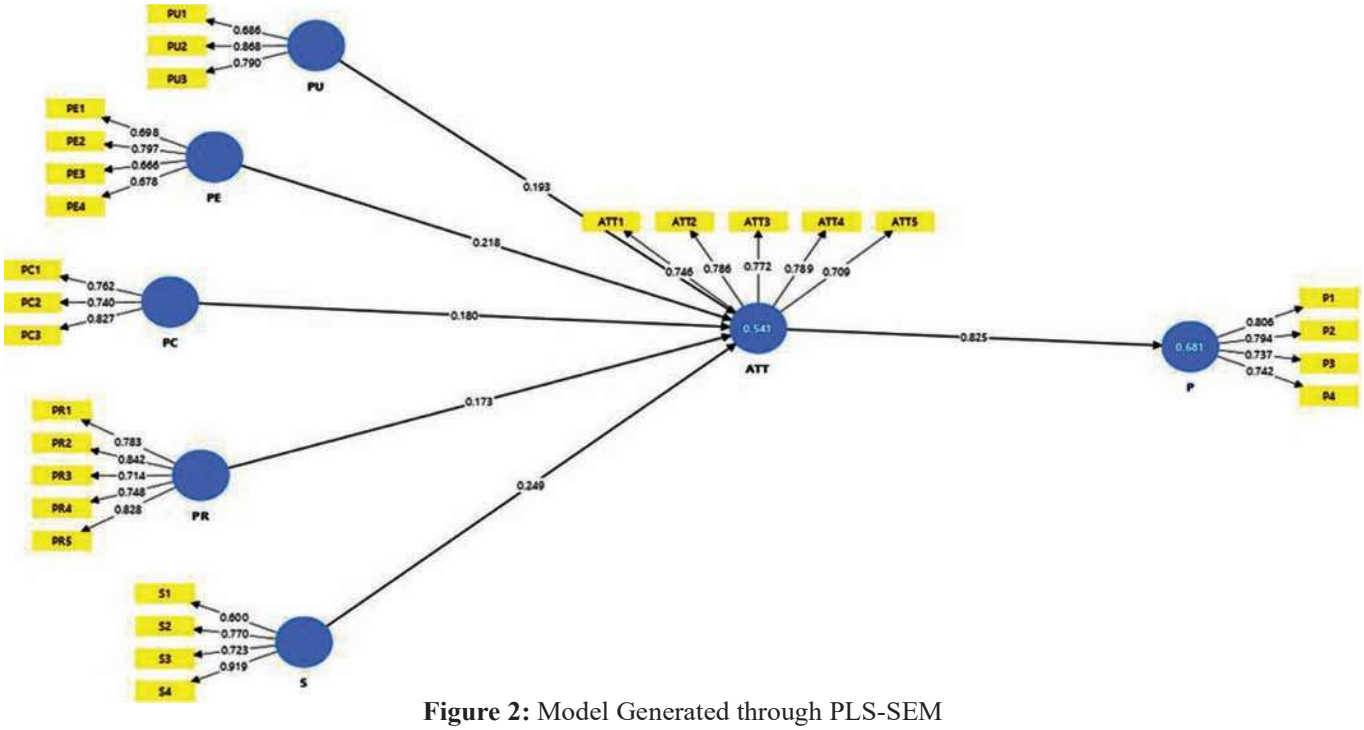

Figure 2: Model Generated through PLS-SEM

variable (Purchase intention – PI), and attitude (ATT) acting as a mediating variable. The study also studies the mediating role of Attitude in the interaction between exogenous and endogenous variables.

Measurement Model Assessment

The graphical depiction of the measurement model attained through PLS-SEM is illustrated below in Figure 2.

Construct Reliability and Validity

Reliability of the model is affirmed as Cronbach's alpha of all the constructs – PU (perceived usefulness), PE (perceived enjoyment), PC (perceived cost), PR (perceived risk), SI (social influence), ATT (attitude), and PI (purchase intention) surpasses the threshold of 0.6 (Hair et al., 1988), as demonstrated in Table 4. Rightness of the factor loading, which is a measure of validity is also confirmed as average variance extracted (AVE) for all constructs surpasses the 0.5 criterion. Factor loading is considered significant for values exceeding 0.5, indicating validity.

Table 4: PLS-SEM Results

Construct	*No. of Items*	*Cronbach's Alpha*	*AVE* (Construct Validity)*
PU	3	0.828	.616
PE	4	0.802	.506
PC	3	0.822	.604
PR	5	0.889	.615
SI	4	0.842	.580
ATT	5	0.873	.579
PI	4	0.854	.593

Source: Authors' compilation

Note: *Average variance extracted.

Convergent Validity and Discriminant validity

Convergent validity indicates the degree of shared variance among items within a measure, while discriminant validity reflects the extent to which a construct is distinct from other constructs (Hair et al., 2018). The Heterotrait-Monotrait (HTMT) ratios were

Table 5: HTMT Ratios – PLS-SEM Rresults

	ATT	*PI*	*PC*	*PE*	*PR*	*PU*	*S*
ATT							
PI	0.824						
PC	0.583	0.612					
PE	0.607	0.667	0.611				
PR	0.530	0.569	0.533	0.536			
PU	0.551	0.558	0.512	0.614	0.573		
S	0.414	0.350	0.335	0.276	0.146	0.136	

Notes: PU – Perceived Usefulness, PE – Perceived Enjoyment, PR – Perceived Risk, PC – Perceived Cost, ATT – Attitude, SI – Social Influence, PI – Purchase Intention.

Source: Authors' compilation

below the conservative threshold of 0.85 (Henseler et al., 2015), thereby confirming discriminant validity. Table 5 displays the HTMT ratios.

Table 6 presents the measured indicators, and outer loadings for the measurement model. PU refers to perceived usefulness; PE denotes perceived enjoyment; PR stands for perceived risk; PC means perceived cost; SI stand for Social Influence; ATT represents attitude; and PI signifies purchase intention. Table 6 indicates that all measured indicators exhibit loadings exceeding the threshold of 0.5. All are significant at the 0.5% level of significance.

Table 6: Outer Loadings – PLS-SEM Results

	ATT	*P*	*PC*	*PE*	*PR*	*PU*	*S*
ATT1	0.746						
ATT2	0.786						
ATT3	0.772						
ATT4	0.789						
ATT5	0.709						
P1		0.806					
P2		0.794					
P3		0.737					
P4		0.742					
PC1			0.762				
PC2			0.740				
PC3			0.827				
PE1				0.698			
PE2				0.797			
PE3				0.666			
PE4				0.678			
PR1					0.783		
PR2					0.842		
PR3					0.714		
PR4					0.748		
PR5					0.828		
PU1						0.686	
PU2						0.868	
PU3						0.790	
S1							0.600
S2							0.770
S3							0.723
S4							0.919

Source: Authors' compilation

Structural Model Assessment

Following the establishment of a satisfactory measurement model, we proceeded with the structural model analysis, with results presented in Table 7 (Path Coefficients), Table 8 (special indirect effect) and Figure 3 (graphical presentation of PLS-SEM

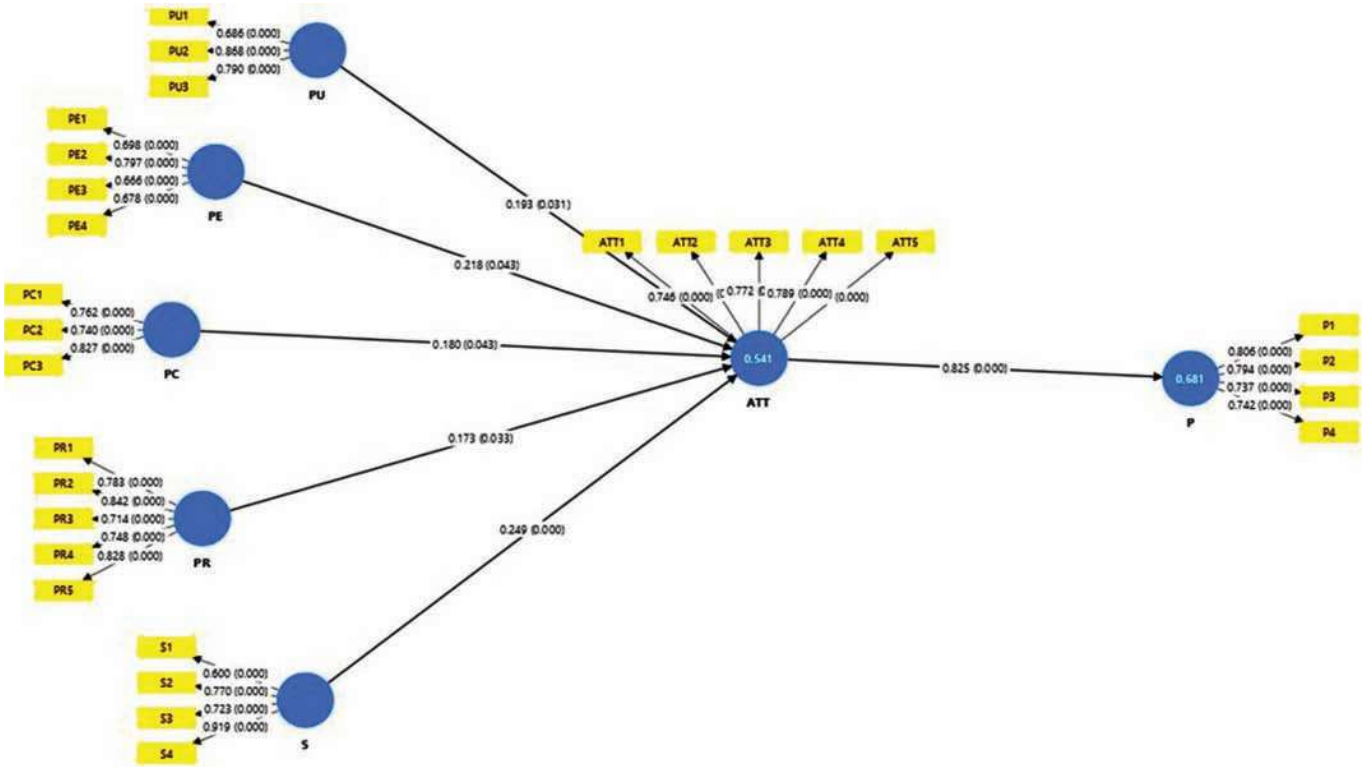

Figure 3: Model Generated through PLS-SEM

Table 7: Path Coefficient – PLS-SEM Results

	Original Sample (O)	*Sample mean (M)*	*Standard Deviation (STDEV)*	*T Statistics (|O/STDEV|)*	*P values*
ATT → P	0.825	0.827	0.032	25.901	0.000
PC → ATT	0.180	0.179	0.089	2.022	0.043
PE → ATT	0.218	0.221	0.108	2.020	0.043
PR → ATT	0.173	0.174	0.081	2.131	0.033
PU → ATT	0.193	0.191	0.089	2.160	0.031
SI → ATT	0.249	0.251	0.061	4.107	0.000

Source: Authors' compilation

Table 8: Special Indirect Effect – PLS-SEM Results

	Original Sample (O)	*Sample Mean (M)*	*Standard Deviation (STDEV)*	*T Statistics (|O/STDEV|)*	*P values*	*Decision*
PC → ATT → P	0.149	0.148	0.073	2.025	0.043	Supported
PE → ATT → P	0.180	0.183	0.091	1.980	0.048	Supported
PR → ATT → P	0.143	0.144	0.068	2.110	0.035	Supported
PU → ATT → P	0.159	0.158	0.074	2.159	0.031	Supported
SI → ATT → P	0.206	0.208	0.050	4.120	0.000	Supported

Source: Authors' compilation

results). The table illustrates that all path coefficients are significant and oriented in the expected direction, indicating that PU, PE, PC, PR, SI have a significant effect on student's attitude towards e-vehicles. The model also confirms the positive relationship between the attitude and purchase intention. All the hypothesis were supported. The R^2 results demonstrate moderate to significant explanatory power: $R^2 = 0.541$ for ATT and $R^2 = 0.681$ for PI.

Model Fit

The standardized Root Mean Square Residual (SRMR) was 0.050, below the 0.08 threshold, signifying a favourable model fit. The findings are presented in Table 9 below.

Table 9: PLS-SEM Results

	Saturated Model	*Estimated Model*
SRMR	0.044	0.053
d_ULS	0.770	1.138
d_G	0.407	0.424
Chi-square	566.556	588.458
NFI	0.868	0.863

Source: Authors' Compilation

DISCUSSION

The research intended to study factors that might influence purchase intention of electric vehicles. The majority of the empirical findings of the study corroborate the existing literature while providing new insights pertinent to the Indian market and its diverse problems. Our work corroborates the affirmative influence of attitude on the adoption of electric vehicles, as emphasized by Hidrue et al. (2011), Jensen et al. (2013), and Li et al. (2018).

The findings affirm that attitude serves as a crucial mediator in the acceptance of online learning. In India, social influence is prevalent in several facets of life, with society significantly impacting individual preferences (Dhar et al. 2015; Shalender and Yadav 2018). Social Influence (SI) being identified as the predominant predictor confirms that still society play a very important role in our decision making.

Limitations and Future Research

The study possesses significant significance for the automobile industry, notwithstanding its inherent limitations. Primarily, the study concentrates on the customers' intention to adopt rather than their actual adoption behavior. The intention to adopt and the actual adoption are not the same thing (Ajzen and Fishbein 1980), hence the intention to adopt does not always entail the real adoption. This research empirically evaluated the proposed conceptual framework in NCR among students. It is advisable to conduct such experiments in other contexts, different regions, and encompassing all demographic groups.

Given the limitations of the current study, there is sufficient room for further investigation in the future. In subsequent research, it might be possible to investigate the effects of other covariates. Considerations such as information, incentive by the government, skepticism, safety, infrastructure, battery problems, fuel economy, charging time, and experience may fall into this category. The future researchers can also include age and gender as moderators. It would be beneficial to do this model's testing with actual owners of electric vehicles in the future. With concerns about the environment growing on a daily basis around the world, this field presents a tremendous opportunity for research in the future.

Declaration of Conflicting Interests

The authors disclosed no potential conflicts of interest regarding the research, writing, or publishing of this work.

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ANNEXURE

Construct	*Items Code*	*Measurement Items*	*Reference Sources*
Perceived Usefulness (PU)	PU1	• Using a new e-vehicle will enhance my travel efficiency.	Davis (1989); He Weiyi & He Rui (2015)
	PU2	• Using a new e-vehicle will improve our air quality.	
	PU3	• Using a new e-vehicle can enhance my quality of life.	
Perceived Enjoyment (PE)	PE1	• Using a new e-vehicle will bring me a feeling of pleasure.	Sweeney and Soutar (2001)
	PE2	• Using a new e-vehicle will make me feel comfortable.	
	PE3	• Using a new e-vehicle will make me appear fashionable and showcase my personality.	
	PE4	• Using a new e-vehicle will help me establish a positive and healthy personal image.	
Perceived Cost (PC)	PC1	• I feel that the purchase cost of a new e-vehicle is too high.	Wu and Wang (2005)
	PC2	• I feel that the charging cost of a new e-vehicle is too high.	
	PC3	• I feel that the maintenance and repair costs of a new e-vehicle are too high.	
Perceived Risk (PR)	PR1	• I am worried that the cruising range of a new e-vehicle may not meet my travel needs.	Schultz et al. (2007)
	PR2	• I am concerned that new e-vehicles may have immature technology, defects, or flaws.	
	PR3	• I am worried about potential battery safety issues with new e-vehicles.	
	PR4	• I am concerned about the imperfect infrastructure of charging facilities and stations for new e-vehicles.	
	PR5	• I am worried that new e-vehicles may not be convenient in terms of maintenance and upkeep.	
Social Influence (SI)	SI1	• If I buy an e-vehicle, most people would agree with my decision.	Lee et al. (2021)
	SI2	• Most people who are important to me would appreciate me if I bought an e-vehicle.	
	SI3	• If I buy an e-vehicle, people will find it as a sensible purchase.	
	SI4	• Other people will not be impressed that I have purchased an e-vehicle.	
Attitude (ATT)	ATT1	• Buying E-vehicle at this point of time is very wise.	Wanget al. 2018
	ATT2	• Buying an e-vehicle at this point is very good.	
	ATT3	• Buying an e-Vehicle at this point is very useful.	
	ATT4	• Buying an e-vehicle at this point is very attractive.	
	ATT5	• Buying an e-vehicle at this point is very valuable.	
Purchase Intention (PI)	PI1	• I am willing to purchase a new e-vehicle.	Lauckhoff (2013); Gong Qun (2020)
	PI2	• I am willing to recommend new e-vehicles to my relatives and friends.	
	PI3	• The likelihood of choosing a new e-vehicle next time I purchase a e-vehicle is high.	
	PI4	• I would prioritize choosing to purchase a new e-vehicle over a traditional gasoline-powered vehicle.	