Electric Vehicles in India : Identifying the Adoption Predictors

Rekha Attri [1]
Pooja S. Kushwaha [2]

Abstract

Purpose : In this study, we explored the factors affecting Indian consumers' willingness to adopt electric vehicles (EVs).

Methodology : This study used the extended unified theory of acceptance and use of technology (UTAUT2) model to examine the factors impacting consumers' desire to purchase electric vehicles. Data were gathered using a quantitative survey design from 518 prospective buyers of new four-wheelers, and SPSS was used for analysis.

Findings : The study concluded that except for hedonic motivation and price value, all other determinants had an impact on the decision to purchase EVs.

Implications : The findings of this study have significance for companies trying to enhance their communications to draw clients and encourage the use of EVs, given the increased attention on the usage of green technology globally.

Originality : Our study explored the UTAUT2 factors along with risk perception and environmental concerns impacting EV adoption in the Indian context, which have not been previously reported. This study provided valuable insights for policymakers, manufacturers, and marketers striving to accelerate the transition to sustainable transportation.

Keywords : transportation economics, technological change, transportation, electric vehicles, UTAUT2, consumer behavior

JEL Classification Codes : L9, R4

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Governments and international organizations have taken action in response to growing concerns about carbon emissions from fossil fuel-powered transportation (Haider et al., 2019). In India, the alarming decline in air quality due to increasing vehicular pollution has made it the third-highest consumer of oil and emitter of greenhouse gases globally (Bernard & Kazmin, 2018; Friedrich et al., 2023; U.S. Energy Information Administration, 2019). The Ministry of Transportation in India is committed to transitioning 30% of its fleet from conventional cars (CVs) to electric vehicles (EVs) by 2030 ("About 1.65 lakh EVs supported," 2021; "13 states have approved, notified dedicated EV policies," 2019; "India turns to electric vehicles to beat pollution," 2019). The adoption of EVs is still in its early stages, despite the Indian government's efforts to encourage and reward the introduction of EVs (Statista, 2021). This discrepancy highlights how important it is to thoroughly examine the factors influencing the uptake of EVs. In order to fill a significant research vacuum, this study attempts to examine the factors that both help and hinder customers' intent to buy electric vehicles. This

[1] *Professor (Corresponding Author),* Jaipuria Institute of Management, Indore, 101, Sapphire Heights, Opposite C21 Mall, AB Road, Indore - 452 008, Madhya Pradesh. (Email : rekha.attri@jaipuria.ac.in)
ORCID iD : https://orcid.org/0000-0001-6759-5684
[2] *Associate Professor,* Jaipuria Institute of Management, Indore, 101, Sapphire Heights, Opposite C21 Mall, AB Road, Indore - 452 008, Madhya Pradesh. (Email : pooja.singh@jaipuria.ac.in)

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study offers insightful information for manufacturers, marketers, and legislators who want to hasten the shift to sustainable transportation by examining the intricate interactions between variables that influence consumer attitudes about EV adoption.

Review of Literature

Identification of the governing and inhibiting variables at the individual level for buying EVs is crucial because the process of picking a vehicle entails making decisions that are mostly made by an individual (Liu et al., 2019).

Barriers to EV Adoption

We have reported skepticism and fear of adopting automated vehicles in various studies (Dua et al., 2021; Krishna, 2021). Graham-Rowe et al. (2012) reported the significance of social impact in the choice of electric automobiles. Although reducing petroleum usage may be the primary driver of electric car sales, customers reportedly buy electric cars in addition to their conventional vehicles running on fossil fuel and use EVs for short-haul trips (Klöckner et al., 2013). The hassles of charging EVs, coupled with the limited range of driving these battery-powered vehicles, have been the traditional challenges preventing their wide adoption by customers (Kley et al., 2011). Customers who are making purchasing decisions run a higher risk when they are unsure about the operation of EVs, are debating whether now is the correct time to buy, and consider the infrastructure requirements for these vehicles (Haider et al., 2019). Earlier studies have also reported customer concerns related to the safety of batteries (Oliver & Rosen, 2010), battery life, availability of service, spare parts, maintenance cost (Browne et al., 2012), limited driving range of such vehicles (Zhang et al., 2014), and absence of ubiquitous charging infrastructure (Silvester et al., 2013).

Enablers for EV Adoption

Cost-related factors (upfront cost, usage-related costs, purchase subsidies, tax exemption, and fuel prices) and customer education about the government policies and benefits of automotive technology are crucial in the diffusion of EVs (Zhang et al., 2017). Zhuge et al. (2020) opined that doubling the subsidies for these vehicles could increase the adoption rate substantially. The adoption barrier of EVs owing to their higher initial prices gets compensated by the savings in fuel cost and maintenance over some time, and this needs to be highlighted to the potential customers using various media vehicles of marketing communication (Sehgal et al., 2022). Cultural values and socio-psychological attitudes toward the attainment of sustainable consumption goals are important while promoting public initiatives for the adoption of EVs (Claudy & Peterson, 2014; Saini et al., 2024). Furthermore, the infrastructure facilitating the faster charging of batteries of EVs is an essential factor that could result in a higher adoption rate of EVs (Neves et al., 2019), and public policymakers need to educate customers about the benefits of adopting environmentally friendly products (Zhang et al., 2017).

Unified Theory of Acceptance and Use of Technology

Despite multiple obstacles such as infrastructure needs, full life cycle concerns, the complexity of the power supply, and the low adoption rate of EVs, the environmental benefits that can be accrued with increased adoption of EVs for transportation are immense (Kennedy & Philbin, 2019). Khazaei (2019a), about the adoption of BEVs, stated that the adoption and mass acceptance of electric cars depend on the perceptions of the consumers about these vehicles.

Wu et al. (2019) employed the technology acceptance model (TAM) to investigate the uptake of automated vehicles. Khazaei (2019b) investigated the relationship between personal innovativeness and pricing value and the intention to adopt electric automobiles using the theory of innovation diffusion model. Alzahrani et al. (2019) applied the theory of reasoned action (TRA) to hybrid electric vehicle adoption, while the theory of planned behavior (TPB) has been extensively used to study hybrid EVs (Wang et al., 2016), EVs (Adnan et al., 2018; Haustein & Jensen, 2018; Huang & Ge, 2019; Mohamed et al., 2018; Tu & Yang, 2019), and BEVs (Simsekoglu & Nayum, 2019). Understanding customers' performance expectancy (PE), effort expectancy (EE), facilitating conditions (FC), and social influence (SI) conditions allows researchers to better understand their behavioral intentions (BI) toward technology (Shokeen et al., 2023) using the unified theory of acceptance and use of technology (UTAUT) model (Nordhoff et al., 2020). Moreover, UTAUT2, proposed by Venkatesh et al. (2012), integrates hedonic motivation (fun and enjoyment), price value (price-quality relationship), and habit (indicating behavior as a result of learning) into the framework to further understand technology adoption. We have removed the UTAUT2 model's proposed "Habit" construct because the technology has just recently entered the market.

From 2,810 units in FY2020 to 5,910 units in FY2021, passenger EV (four-wheeler) sales in India increased by 110% (Sun, 2021). Customers' concern levels may be higher than in other nations because India is still in the early phases of adopting electric vehicles (Bhat et al., 2022). Concerns over EVs and green fuels have grown globally (Reimers, 2021; Vongurai, 2020). Therefore, the model has been updated to include the notions of perceived risk and environmental concerns.

Performance Expectancy (PE)

A person's performance evaluation of goods or services, either prior to or after a purchase, determines their attitudes (Gunawan et al., 2022). This implies better the performance of the product or service, the higher be attitude toward them, leading to higher purchase intention (Pahari et al., 2023; Yuen et al., 2020). The technology that can deliver favorable results to the consumers has a higher adoption rate as compared to those that consumers do not see delivering results as promised (Mishra et al., 2023). PE for EVs describes how well a vehicle will help its customers carry out their daily tasks (Sovacool, 2017). We have reported that performance expectancy significantly influences the BI toward the adoption of electric bicycles (Wolf & Seebauer, 2014) and electric car sharing and adoption systems in China (Rafique & Town, 2018; Tran et al., 2019). People who believe that electric cars (EVs) are advantageous would have a favorable attitude toward them and be prepared to invest in this technology. With this premise, we formulated the following hypothesis:

➾ **H1 :** Customers who believe EVs are advantageous are more likely to intend to use them, as PE strongly predicts BI in this way.

Effort Expectancy (EE)

The effort required to acquire or develop new skills when using technology is discussed under the EE theory (Venkatesh et al., 2012). According to Zhang et al. (2019, 2020), public acceptability of automated vehicles is significantly influenced by how simple they are to use. Prior researchers have confirmed the influence of EE in predicting an individual's BI (Madigan et al., 2016). The ease of using technology results in the development of positive attitudes, and with this premise, we formulated the following hypothesis:

➾ **H2 :** Customers who believe EVs are easy to use will be more likely to use them, according to EE's big prediction of BI.

Social Influence (SI)

According to research on the behavioral factors influencing the adoption of autonomous vehicles, there is a favorable correlation between subjective norms and purchasing intent (Acheampong & Cugurullo, 2019). Phipps et al. (2013) reported that the growth in the adoption of EVs can be achieved by focusing on key customers and facilitating their interactions with like-minded community members. Asadi et al. (2021) claimed that people's pro-social and pro-environmental considerations have an impact on EV acceptance and use. Customers' attitudes and purchase intentions are highly influenced by their perceptions of the value of EVs (both personally and socially), subjective norms, and awareness of the financial and environmental costs associated with buying these vehicles (Asadi et al., 2021). Since customers are influenced by their social circle, we formulated the following hypothesis:

➷ **H3 :** SI significantly predicts BI such that individuals who perceive their social network to support EVs will have a higher intention to use these vehicles.

Facilitating Conditions (FC)

Venkatesh et al. (2012) defined facilitating conditions as the extent to which a prospective customer has confidence in the availability of technological or organizational infrastructure to support the usage of technology. Studies have reported a significant correlation between facilitating conditions and technology adoption (Maruping et al., 2017; Venkatesh et al., 2012). When it comes to EVs, the facilitating conditions (FC) can be understood as the availability of information regarding how to use them, as well as the organizational and physical infrastructure needed to handle challenging circumstances. For our study, we formulated the following hypothesis:

➷ **H4 :** FC significantly predicts BI such that individuals who believe in the availability of conditions facilitating the use of EVs will have a higher intention to use these vehicles.

Hedonic Motivation (HM)

Emotions, which are states of conscious sentiments like happiness, satisfaction, regret, and guilt, among others, typically come from the perception and appraisal of stimuli (Krettenauer & Lefebvre, 2021). Consumers try to avoid negative feelings and focus on pleasant ones like pleasure, enthusiasm, pride, etc. (Adams et al., 2020). In addition to experienced emotions, behavioral intentions (BI) are also formed by anticipated emotions (Zoellick et al., 2019). Hedonistic motivations (HM) for utilizing technology have a positive effect, according to consumer technology adoption research (Xu et al., 2018). Therefore, for our study, we formulated the following hypothesis:

➷ **H5 :** HM significantly predicts BI such that individuals who believe that it would be enjoyable to use EVs will have a higher intention to use these vehicles.

Price Value (PV)

Customers typically worry about the costs involved and the benefits they expect to receive when adopting new technologies (Gunawan et al., 2022). Suppose the value/benefits obtained from technology are perceived to be high and exceed the individual's expectations; in that case, the worth of the product will increase for the individual, thereby resulting in satisfaction (Venkatesh et al., 2012). However, a person's mistrust and lack of interest in using the goods are caused by negative views about the product's price (Bakshi & Verma, 2023; Yuen et al., 2020). People who believe the product has a price advantage would demonstrate a favorable attitude toward the product. Based on this premise, the following hypothesis is framed:

↳ **H6 :** Price value (PV) significantly predicts BI such that individuals who perceive the benefits to be higher than the monetary cost of technology will have a higher intention to use these vehicles.

Environmental Concerns (EC)

According to reports, environmental concerns (EC) are increasing people's desire to utilize new sustainable technologies (Carley et al., 2013; Razak et al., 2014). Studies on battery-operated EVs have shown that adoption intentions have increased when people become more aware of their ability to help the environment (Egbue & Long, 2012; Tamor et al., 2013). According to Beck et al. (2017), the energy crisis, poor air quality, and concerns about climate change contribute to a favorable attitude toward EVs. According to Pita et al. (2020), the adoption of battery-operated EVs will result in improvements in the quality of life. According to Khazaei and Tareq (2021), adopting EVs can be seen as environmentally good behavior because they are deemed green technologies. We, therefore, hypothesize that:

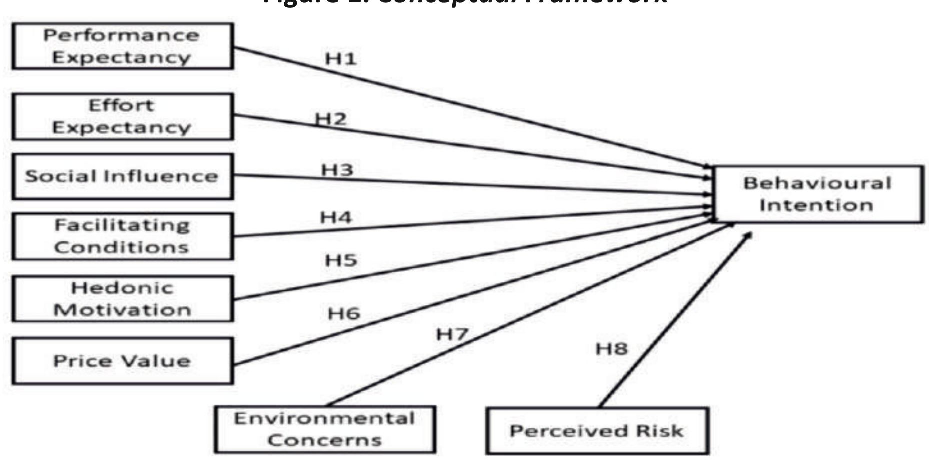
↳ **H7 :** EC significantly predicts BI such that individuals who are concerned about a cleaner environment will have a higher intention to use these vehicles.

Perceived Risk (PR)

Studies (Curtis et al., 2010; de Visser et al., 2010; Khatik & Shrivastava, 2023) have shown that worry significantly affects the ability to make decisions. In the case of BEVs, range anxiety was reported to have a considerable impact on the adoption of these vehicles (Axsen et al., 2015). Lack of trust and motivation to experiment (Sajjad et al., 2023) make customers hesitant to go for purchase of new technology. As a result of our conviction that perceived risk (PR) would significantly affect BI, we developed the following hypothesis:

↳ **H8 :** PR significantly predicts BI such that individuals who exhibit low perceived risk will have a higher intention to use these vehicles.

Figure 1. ***Conceptual Framework***



Source : UTAUT 2 model based on Venkatesh et al. (2012) adjusted for this study.

Figure 1 shows the conceptual framework for our study based on the framed hypotheses.

Research Methodology

This study utilized the survey method of quantitative design to collect responses from prospective customers who desired to purchase a new four-wheeler. We used the extended UTAUT2 constructs for our study. We used established scales from previous studies (Khazaei, 2019a; Nordhoff et al., 2020; Venkatesh et al., 2012; Wang et al., 2018; Wu et al., 2019) to create the items that we used to measure the constructs of our study (PE – 4 items; EE –3 items; SI – 6 items; FC – 5 items; HM – 4 items; PV – 3 items; BI – 4 items; EC – 4 items, and PR– 4 items).

Bjerkan et al. (2016) stated the higher adoption of EVs in comparison to CVs, such as petrol and diesel cars, might not be visible on a macro level, but a higher adoption might be visible on a micro level, i.e., at a city or district level. We therefore focused on select cities for our study. The city of Indore was named India's cleanest city for a fifth consecutive year in a national cleanliness survey conducted in 2021 for 4,320 Indian cities, while Madhya Pradesh, a state with more than 100 urban local bodies, was named the third-cleanest state in the nation ("Swachh Survekshan: Indore gets cleanest city tag," 2021). The largest populous and commercial center of Madhya Pradesh, Indore, was ranked among the top 20 performing cities in India under the Smart Cities Mission (Dixit & DHNS, 2020). The goal of the state of Madhya Pradesh's EV policy is to accelerate the use of electric vehicles so that, by 2026, they will make up 25% of all newly registered public vehicles. The state had also declared that the cities of Bhopal, Indore, Jabalpur, Gwalior, and Ujjain would be model cities having phase-wise goals to adopt EVs and charging infrastructure (Madhya Pradesh EV Policy – Summary, 2020).

We utilized a purposive sample approach since it requires the identification of knowledgeable participants. We carried out our investigation in the cities of Indore and Bhopal based on the availability of dealers for electric vehicles in Madhya Pradesh. We reached out to a few Hyundai Motors, Morris Garage (MG), and Tata Motors automobile dealerships in Indore and Bhopal that sold both CVs and EVs, as these were the only cities where EV variants were available. Prospective buyers were asked to complete the questionnaire if they were familiar with electric vehicles and had test-driven ones at these dealerships. We focused on examining the four-wheeler EV's BI. Only 518 of the 524 respondents who completed the questionnaire were eventually chosen for data analysis. The time period of our study is from May 2022 –January 2023.

Data Analysis and Results

Confirmatory Factor Analysis

Tests of the validity and reliability of the constructs were conducted using confirmatory factor analysis (CFA). Due to low factor loadings and substantial inter-construct correlations, the items PE4, SI6, FC2, PR2, and BI4 were not included in the analysis. The model fit parameters (p-value = 0.104 (acceptable value > 0.05); χ^2 / df = 1.798 (acceptable value < 5.00); GFI = 0.974 (acceptable value > 0.90); AGFI = 0.931 (acceptable value > 0.90); NFI = 0.908 (acceptable value > 0.90); CFI = 0.954 (acceptable value > 0.90), RMR = 0.044 (acceptable value < 0.08) and RMSEA = 0.056 (acceptable value < 0.08)) (Hooper et al., 2008) are acceptable for all the latent variables reflecting a good model fit.

Test for Multicollinearity

The test for normality conducted for the dependent variable (behavioral intention) had a Shapiro–Wilk significance level of 0.515, indicating that the sample was normally distributed. The maximum in Cook's distance was 0.041 < 1, and the minimum (–1.974) and maximum (1.959) values for standard residual (acceptable range –3 to +3) indicated the absence of outliers in the data.

None of the multiple correlation values between the predictors was greater than 0.7, indicating the absence of multi-collinearity among the predictors. The multi-collinearity concerns were also checked by seeing the tolerance values of all predictors (which were greater than 0.1) and using the variance inflation factor (VIF) test. As all VIF values were below the threshold of 3 (Hair Jr. et al., 2020) [VIF_{PR}= 1.124; VIF_{PE}= 1.231; VIF_{EE}= 1.282; VIF_{SI}= 1.276; VIF_{FC}= 1.108; VIF_{HM}= 1.573; VIF_{EC}= 1.346; VIF_{PV}= 1.144] and it was concluded that the multi-collinearity effect was not present among the independent variables.

Validity and Reliability

We investigated the convergent validity and the discriminant validity of the scale items to confirm that they are measuring the theoretical construct. The AVE values were ≥ 0.5, confirming convergent validity (Parasuraman et al., 2005). The AVE values were also tested by observing the factor loadings. For convergent validity, the item loadings must be ≥ 0.7 (Carlson & Herdman, 2012). To achieve construct reliability, a value of CR ≥ 0.6 is required (Parasuraman et al., 2005). Table 1 demonstrates that all of these conditions have been satisfied.

The square root of the AVE for the construct must be greater than the correlation between the two constructs as a requirement for discriminant validity (Hooper et al., 2008; Parasuraman et al., 2005). The square roots of the AVE for the constructs are represented by the diagonal values (in bold) in Table 2, and the other values represent

Table 1. ***Construct Reliability and Validity***

S. No.	Construct	Number of Items	Factor Loading Range (λ)	Cronbach's Alpha (α)	Average Variance Extracted (AVE)	Construct Reliability (CR)
1	Performance Expectancy *(PE)*	3	0.694 – 0.804	0.645	0.607	0.811
2	Effort Expectancy *(EE)*	3	0.675 – 0.763	0.72	0.512	0.758
3	Social Influence *(SI)*	5	0.636 – 0.857	0.863	0.58	0.872
4	Facilitating Conditions *(FC)*	4	0.678 – 0.767	0.825	0.519	0.811
5	Hedonic Motivation *(HM)*	4	0.646 – 0.818	0.8	0.541	0.823
6	Price Value *(PV)*	3	0.729 – 0.876	0.683	0.624	0.837
7	Environmental Concerns *(EC)*	4	0.759 – 0.865	0.947	0.639	0.876
8	Perceived Risk *(PR)*	3	0.651 – 0.827	0.673	0.588	0.809
9	Behavioral Intention *(BI)*	3	0.706 – 0.791	0.784	0.561	0.793

Table 2. ***Fornell–Larcker Criterion : Correlations and Discriminant Validity***

	Correlations								
	PE	*EE*	*SI*	*FC*	*HM*	*PV*	*EC*	*PR*	*BI*
PE	**0.779**								
EE	0.012	**0.716**							
SI	0.103	0.061	**0.761**						
FC	0.099	0.230	0.059	**0.720**					
HM	0.352**	0.371**	0.307*	0.173	**0.736**				
PV	0.171	0.056	0.101	0.101	0.041	**0.790**			

EC	0.128	0.140	0.299*	0.225	0.350**	–0.194	**0.799**		
PR	0.432**	–0.101	0.157	0.121	0.173	0.083	0.074	**0.767**	
BI	0.329*	0.368**	0.323*	0.438**	0.385**	0.289*	0.238	0.085	**0.749**

Note. **Significant at the 0.01 level.

*Significant at the 0.05 level.

the correlations between the constructs. Discriminant validity was attained because all the diagonal values in Table 2 were higher than the values in its row and column.

Test for Hypotheses

Stepwise multiple regression analyses were used to test the hypothesized effects of the predictors. The model summary presented in Table 3 indicates that 48.4% of the variance in the dependent variable, i.e., BI, is explained

Table 3. ***Stepwise Regression***

Model	*R*	*R* Square	Adjusted *R* Square	Std. Error of the Estimate	Change Statistics				
					R Square Change	*F* Change	*df*1	*df*2	Sig. *F* Change
1	0.418[a]	0.174	0.171	0.747	0.174	53.895	1	255	0.000
2	0.538[b]	0.290	0.284	0.694	0.115	41.122	1	254	0.000
3	0.635[c]	0.404	0.397	0.637	0.114	48.389	1	253	0.000
4	0.666[d]	0.444	0.435	0.616	0.040	18.315	1	252	0.000
5	0.689[e]	0.474	0.464	0.600	0.030	14.547	1	251	0.000
6	0.696[f]	0.484	0.472	0.596	0.010	4.713	1	250	0.031

Note.

[a.] Predictors: (Constant), FC.

[b.] Predictors: (Constant), FC and PR.

[c.] Predictors: (Constant), FC, PR, and SI.

[d.] Predictors: (Constant), FC, PR, SI, and PE.

[e.] Predictors: (Constant), FC, PR, SI, PE, and EE.

[f.] Predictors: (Constant), FC, PR, SI, PE, EE, and EC.

Table 4. ***Statistics for Hypothesis Testing***

Hypotheses		Unstandardized Coefficients	SE	Standardized Coefficients	*t*	*p*-value	Decision on Hypotheses
H1	*PE ---> BI*	0.222	0.06	0.175	3.716	**	Supported
H2	*EE ---> BI*	0.233	0.067	0.17	3.487	**	Supported
H3	*SI ---> BI*	0.256	0.05	0.257	5.142	**	Supported
H4	*FC ---> BI*	0.364	0.05	0.346	7.278	**	Supported
H5	*HM ---> BI*	0.002	0.035	0.003	0.066	0.948	Not Supported

H6	*PV ---> BI*	0.086	0.053	0.08	1.609	0.108	Not Supported
H7	*EC ---> BI*	0.166	0.064	0.136	2.594	0.009	Supported
H8	*PR ---> BI*	–0.202	0.036	–0.272	–5.649	**	Supported

Note. ** denotes significance at 1% ($p < 0.001$).

by all the predictor variables except HM and PV. The strongest predictor for the purchase intention of electric cars in our study is FC (R^2 = 17.4%). As seen in Table 3, the FC, PR, SI, PE, EE, and EC together predict a 48.4% variance in BI.

The majority of our hypotheses are supported (refer to Table 4), and age, gender, and income do not moderate the relationship between the predictors (i.e., PE, EE, SI, FC, HM, PV, EC, and PR) for BI. Our research findings go counter to those of Madigan et al. (2017), who discovered that the strongest predictor of BI was HM. HM does not predict BI (H5 is not supported). The perception of the value of electric vehicles also does not predict BI (H6 not supported). Perceived risk and BI are found to be negatively correlated (β = –0.272, t = –5.649), suggesting that as perceived risk rises, the consumers' desire to buy EVs will reduce. This study's conclusion is consistent with that of Bhat et al. (2022).

Implications

Theoretical Implications

Our study provides some theoretical implications leading to increased physical awareness regarding EV use. First, it highlights the importance of perceived risk in influencing consumer behavior in the context of new technologies. Our findings showing the negative relationship between risk perception and purchase intention confirm the importance of addressing consumer concerns through effective communication strategies. Additionally, our research shows the importance of resilience in the growth of the economy, especially where infrastructure and support systems play an important role in influencing consumer decisions. Furthermore, our study demonstrates the impact of social influence on traffic and emphasizes the need for individual cooperation as well as customer advice regarding EV behavior. This emphasizes how important it is to comprehend how social ties affect technological processes.

Additionally, our findings challenge conventional wisdom about the perceived benefits of electric vehicles. Despite recognition of long-term benefits and environmental considerations, consumer behavior considerations may not necessarily conform to consensus. This highlights the complexity of consumer decision-making and the need for a deeper understanding of the factors that influence perceived value and its translation into behavior. Overall, our study contributes to theoretical frameworks such as the UTAUT by expanding its applicability to the context of EV adoption. By explaining the interplay between factors such as risk perception, resilience, and social influence, our study contributes to theoretical understanding and offers suggestions for future research in the field of technology and behavior.

Managerial Implications

The conclusions drawn from our study bear significant managerial implications. First, amidst global governmental emphasis on green technology adoption, our findings offer valuable insights for firms aiming to tailor their marketing strategies to entice customers and facilitate EV adoption. It is especially important to recognize and manage perceived risks in developing economies such as India, where consumer priorities frequently place favorable conditions above other aspects. The findings of our study indicate a negative relationship between perceived risk and purchase intention, underscoring the necessity for manufacturers to prioritize safety and advantageous conditions for owning electric vehicles in their marketing campaigns. Furthermore, social influence becomes clear as a key element influencing adoption rates. Hence, by reducing concerns and perceived risks related to new technology, initiatives targeted at growing social networks and establishing connections between potential customers and current electric vehicle owners can be extremely helpful in promoting adoption.

Policy Implications

Additionally, our research has important policy ramifications, particularly with regard to how people view the value of electric vehicles. Customers' BI may not always line up with the perceived value offer, even when they are aware of the long-term advantages and environmental factors. One of the main obstacles to the widespread use of EVs is their greater initial cost as compared to their conventional fuel-powered counterparts. It will take coordinated efforts in customer education to gradually change attitudes about how cost-effective EVs are in order to overcome this obstacle. It is recommended that policymakers give precedence to the dissemination of literature and information that clarifies the long-term value proposition and performance of electric vehicles via diverse marketing communication channels. Policymakers can successfully stimulate the use of electric vehicles and expedite the shift to sustainable transportation options by promoting greater knowledge of the economic benefits and environmental effects.

Limitations of the Study and Scope for Future Research

The present study has a few limitations, which provide scope for future studies. First, developing nations like India have a 0.8% acceptance rate for EVs, and infrastructure development is challenging, with just 1,800 charging stations deployed in public spaces (Khan, 2022). Survey research's social desirability and acquiescence biases, as well as the novelty of EVs, may have encouraged respondents to declare a higher level of BI to buy one. The results cannot be extrapolated to other nations because cross-country impacts are not explored in this article. Future research can be done to study the satisfaction level of customers of EVs with the technology of the vehicle. With more development in infrastructure for facilitating the adoption of EVs, research can be directed toward examining the impact of these facilitating conditions on the adoption of EVs. Our study's quantitative methodology placed constraints on how deeply we could examine the adoption of EVs. Time and financial constraints prevented a thorough study of customer intentions using a mixed-method approach. For better comprehension, future studies might employ a mixed-methods approach.

Authors' Contribution

Dr. Pooja Kushwaha conceived the idea and prepared the conceptual framework. She collected the primary data required for this study. Dr. Rekha Attri carried out data analysis and conducted the literature review. Both authors contributed to the discussion, implications, and limitations section of the manuscript.

Conflict of Interest

The authors certify that they have no affiliations with or involvement in any organization or entity with any financial interest or non-financial interest in the subject matter or materials discussed in this manuscript.

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References

13 states have approved, notified dedicated EV policies: Minister. (2021, August 9). *Business Standard*. https://www.business-standard.com/article/current-affairs/13-states-have-approved-notified-dedicated-ev-policies-minister-121080901478_1.html

About 1.65 lakh EVs supported as on Nov 25 under Phase-2 of FAME India scheme (2021, November 30). *The Economic Times*. https://economictimes.indiatimes.com/industry/renewables/about-1-65-lakh-evs-supported-as-on-nov-25-under-phase-2-of-fame-india-scheme/articleshow/88002947.cms?from=mdr

Acheampong, R. A., & Cugurullo, F. (2019). Capturing the behavioural determinants behind the adoption of autonomous vehicles: Conceptual frameworks and measurement models to predict public transport, sharing and ownership trends of self-driving cars. *Transportation Research Part F: Traffic Psychology and Behaviour, 62*, 349–375. https://doi.org/10.1016/j.trf.2019.01.009

Adams, I., Hurst, K., & Sintov, N. D. (2020). Experienced guilt, but not pride, mediates the effect of feedback on pro-environmental behavior. *Journal of Environmental Psychology, 71*, 101476. https://doi.org/10.1016/j.jenvp.2020.101476

Adnan, N., Nordin, S. M., Amini, M. H., & Langove, N. (2018). What make consumer sign up to PHEVs? Predicting Malaysian consumer behavior in adoption of PHEVs. *Transportation Research Part A: Policy and Practice, 113*, 259–278. https://doi.org/10.1016/j.tra.2018.04.007

Alzahrani, K., Hall-Phillips, A., & Zeng, A. Z. (2019). Applying the theory of reasoned action to understanding consumers' intention to adopt hybrid electric vehicles in Saudi Arabia. *Transportation, 46*(1), 199–215. https://doi.org/10.1007/s11116-017-9801-3

Asadi, S., Nilashi, M., Samad, S., Abdullah, R., Mahmoud, M., Alkinani, M. H., & Yadegaridehkordi, E. (2021). Factors impacting consumers' intention toward adoption of electric vehicles in Malaysia. *Journal of Cleaner Production, 282*, 124474. https://doi.org/10.1016/j.jclepro.2020.124474

Axsen, J., Bailey, J., & Castro, M. A. (2015). Preference and lifestyle heterogeneity among potential plug-in electric vehicle buyers. *Energy Economics, 50*, 190–201. https://doi.org/10.1016/j.eneco.2015.05.003

Bakshi, M., & Verma, R. (2023). Cause-related marketing and purchase intention : A study on Indian millennials. *Prabandhan: Indian Journal of Management, 16*(10), 32–45. https://doi.org/10.17010/pijom/2023/v16i10/173196

Beck, M. J., Rose, J. M., & Greaves, S. P. (2017). I can't believe your attitude: A joint estimation of best worst attitudes and electric vehicle choice. *Transportation, 44*(4), 753–772. https://doi.org/10.1007/s11116-016-9675-9

Bernard, S., & Kazmin, A. (2018, December 11). Dirty air: How India became the most polluted country on earth. *Financial Times*. https://ig.ft.com/india-pollution/

Bhat, F. A., Verma, M., & Verma, A. (2022). Measuring and modelling electric vehicle adoption of Indian consumers. *Transportation in Developing Economies, 8*(1). https://doi.org/10.1007/s40890-021-00143-2

Bjerkan, K. Y., Nørbech, T. E., & Nordtømme, M. E. (2016). Incentives for promoting battery electric vehicle (BEV) adoption in Norway. *Transportation Research Part D: Transport and Environment, 43*, 169–180. https://doi.org/10.1016/j.trd.2015.12.002

Browne, D., O'Mahony, M., & Caulfield, B. (2012). How should barriers to alternative fuels and vehicles be classified, and potential policies to promote innovative technologies be evaluated? *Journal of Cleaner Production, 35*, 140–151. https://doi.org/10.1016/j.jclepro.2012.05.019

Carley, S., Krause, R. M., Lane, B. W., & Graham, J. D. (2013). Intent to purchase a plug-in electric vehicle: A survey of early impressions in large US cities. *Transportation Research Part D: Transport and Environment, 18*, 39–45. https://doi.org/10.1016/j.trd.2012.09.007

Carlson, K. D., & Herdman, A. O. (2012). Understanding the impact of convergent validity on research results. *Organizational Research Methods, 15*(1), 17–32. https://doi.org/10.1177/1094428110392383

Claudy, M. C., & Peterson, M. (2014). Understanding and underutilization of urban bicycle commuting: A behavioral reasoning perspective. *Journal of Public Policy & Marketing, 33*(2), 173–187. https://doi.org/10.1509/jppm.13.087

Curtis, L., Edwards, C., Fraser, K. L., Gudelsky, S., Holmquist, J., Thornton, K., & Sweetser, K. D. (2010). Adoption of social media for public relations by nonprofit organizations. *Public Relations Review, 36*(1), 90–92. https://doi.org/10.1016/j.pubrev.2009.10.003

de Visser, L., van der Knaap, L., van de Loo, A., van der Weerd, C., Ohl, F., & van den Bos, R. (2010). Trait anxiety affects decision-making differently in healthy men and women: Towards gender-specific endophenotypes of anxiety. *Neuropsychologia, 48*(6), 1598–1606. https://doi.org/10.1016/j.neuropsychologia.2010.01.027

Dixit, R., & DHNS. (2020, September 6). Indore has lessons for other Smart cities. *Deccan Herald*. https://www.deccanherald.com/national/indore-has-lessons-for-other-smart-cities-883169.html

Dua, R., Hardman, S., Bhatt, Y., & Suneja, D. (2021). Enablers and disablers to plug-in electric vehicle adoption in India: Insights from a survey of experts. *Energy Reports, 7*, 3171–3188. https://doi.org/10.1016/j.egyr.2021.05.025

Egbue, O., & Long, S. (2012). Barriers to widespread adoption of electric vehicles: An analysis of consumer attitudes and perceptions. *Energy Policy, 48*, 717–729. https://doi.org/10.1016/j.enpol.2012.06.009

Friedrich, J., Ge, M., Pickens, A., & Vigna, L. (2023, March 2). *This interactive chart shows changes in the world's top 10 emitters.* World Resources Institute. https://www.wri.org/insights/interactive-chart-shows-changes-worlds-top-10-emitters

Graham-Rowe, E., Gardner, B., Abraham, C., Skippon, S., Dittmar, H., Hutchins, R., & Stannard, J. (2012). Mainstream consumers driving plug-in battery-electric and plug-in hybrid electric cars: A qualitative analysis of responses and evaluations. *Transportation Research Part A: Policy and Practice, 46*(1), 140–153. https://doi.org/10.1016/j.tra.2011.09.008

Gunawan, I., Redi, A. A., Santosa, A. A., Maghfiroh, M. F., Pandyaswargo, A. H., & Kurniawan, A. C. (2022). Determinants of customer intentions to use electric vehicle in Indonesia: An integrated model analysis. *Sustainability, 14*(4), 1972. https://doi.org/10.3390/su14041972

Haider, S. W., Zhuang, G., & Ali, S. (2019). Identifying and bridging the attitude-behavior gap in sustainable transportation adoption. *Journal of Ambient Intelligence and Humanized Computing, 10*(9), 3723–3738. https://doi.org/10.1007/s12652-019-01405-z

Hair Jr., J. F., Howard, M. C., & Nitzl, C. (2020). Assessing measurement model quality in PLS-SEM using confirmatory composite analysis. *Journal of Business Research, 109*, 101–110. https://doi.org/10.1016/j.jbusres.2019.11.069

Haustein, S., & Jensen, A. F. (2018). Factors of electric vehicle adoption: A comparison of conventional and electric car users based on an extended theory of planned behavior. *International Journal of Sustainable Transportation, 12*(7), 484–496. https://doi.org/10.1080/15568318.2017.1398790

Hooper, D., Coughlan, J., & Mullen, M. (2008). Structural equation modelling: Guidelines for determining model fit. *Electronic Journal of Business Research Methods, 6*(1), 53–60. https://doi.org/10.21427/D7CF7R

Huang, X., & Ge, J. (2019). Electric vehicle development in Beijing: An analysis of consumer purchase intention. *Journal of Cleaner Production, 216*, 361–372. https://doi.org/10.1016/j.jclepro.2019.01.231

India turns to electric vehicles to beat pollution. (2019, July 24). *BBC News*. https://www.bbc.com/news/world-asia-india-48961525

Kennedy, D., & Philbin, S. P. (2019). Techno-economic analysis of the adoption of electric vehicles. *Frontiers of Engineering Management, 6*(4), 538–550. https://doi.org/10.1007/s42524-019-0048-x

Khan, I. (2022, February 18). How can India ensure a higher EV adoption rate. *Inc42*. https://inc42.com/resources/how-can-india-ensure-a-higher-ev-adoption-rate/#:~:text=EV%20penetration%20in%20India%20stands

Khatik, S. K., & Shrivastava, G. (2023). Government's role in creating a start-up ecosystem: The Indian youth perception. *Prabandhan: Indian Journal of Management, 16*(4), 61–71. https://doi.org/10.17010/pijom/2023/v16i4/172788

Khazaei, H. (2019a). The datasets of factors influencing adoption of electric cars in Malaysia: A structural equation modelling (SEM) analysis. *Data in Brief, 27*, 104644. https://doi.org/10.1016/j.dib.2019.104644

Khazaei, H. (2019b). The influence of personal innovativeness and price value on intention to use of electric vehicles in Malaysia. *European Online Journal of Natural and Social Sciences, 8*(3), 483–494. https://european-science.com/eojnss/article/view/5855

Khazaei, H., & Tareq, M. A. (2021). Moderating effects of personal innovativeness and driving experience on factors influencing adoption of BEVs in Malaysia: An integrated SEM–BSEM approach. *Heliyon, 7*(9), e08072. https://doi.org/10.1016/j.heliyon.2021.e08072

Kley, F., Lerch, C., & Dallinger, D. (2011). New business models for electric cars—A holistic approach. *Energy Policy, 39*(6), 3392–3403. https://doi.org/10.1016/j.enpol.2011.03.036

Klöckner, C. A., Nayum, A., & Mehmetoglu, M. (2013). Positive and negative spillover effects from electric car purchase to car use. *Transportation Research Part D: Transport and Environment, 21*, 32–38. https://doi.org/10.1016/j.trd.2013.02.007

Krettenauer, T., & Lefebvre, J. P. (2021). Beyond *subjective* and *personal*: Endorsing pro-environmental norms as moral norms. *Journal of Environmental Psychology, 76*, 101644. https://doi.org/10.1016/j.jenvp.2021.101644

Krishna, G. (2021). Understanding and identifying barriers to electric vehicle adoption through thematic analysis. *Transportation Research Interdisciplinary Perspectives, 10*, 100364. https://doi.org/10.1016/j.trip.2021.100364

Liu, Y., Ouyang, Z., & Cheng, P. (2019). Predicting consumers' adoption of electric vehicles during the city smog crisis: An application of the protective action decision model. *Journal of Environmental Psychology, 64*, 30–38. https://doi.org/10.1016/j.jenvp.2019.04.013

Madhya Pradesh EV Policy – Summary. (2019, November 1). *EVreporter.com*. https://evreporter.com/madhya-pradesh-ev-policy/

Madigan, R., Louw, T., Dziennus, M., Graindorge, T., Ortega, E., Graindorge, M., & Merat, N. (2016). Acceptance of automated road transport systems (ARTS): An adaptation of the UTAUT model. *Transportation Research Procedia, 14*, 2217–2226. https://doi.org/10.1016/j.trpro.2016.05.237

Madigan, R., Louw, T., Wilbrink, M., Schieben, A., & Merat, N. (2017). What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems. *Transport Research Part F: Traffic Psychology and Behaviour, 50*, 55–64. https://doi.org/10.1016/j.trf.2017.07.007

Maruping, L. M., Bala, H., Venkatesh, V., & Brown, S. A. (2017). Going beyond intention: Integrating behavioral expectation into the unified theory of acceptance and use of technology. *Journal of the Association for Information Science and Technology, 68*(3), 623–637. https://doi.org/10.1002/asi.23699

Mishra, R., Sharma, M. P., Seth, K., & Singh, V. (2023). A study on consumers' travel purchase intention through travel apps. *Prabandhan: Indian Journal of Management, 16*(7), 25–42. https://doi.org/10.17010/pijom/2023/v16i7/172926

Mohamed, M., Higgins, C. D., Ferguson, M., & Réquia, W. J. (2018). The influence of vehicle body type in shaping behavioural intention to acquire electric vehicles: A multi-group structural equation approach. *Transportation Research Part A: Policy and Practice, 116*, 54–72. https://doi.org/10.1016/j.tra.2018.05.011

Neves, S. A., Marques, A. C., & Fuinhas, J. A. (2019). Technological progress and other factors behind the adoption of electric vehicles: Empirical evidence for EU countries. *Research in Transportation Economics, 74*, 28–39. https://doi.org/10.1016/j.retrec.2018.12.001

Nordhoff, S., Louw, T., Innamaa, S., Lehtonen, E., Beuster, A., Torrao, G., Bjorvatn, A., Kessel, T., Malin, F., Happee, R., & Merat, N. (2020). Using the UTAUT2 model to explain public acceptance of conditionally automated (L3) cars: A questionnaire study among 9,118 car drivers from eight European countries. *Transportation Research Part F: Traffic Psychology and Behaviour, 74*, 280–297. https://doi.org/10.1016/j.trf.2020.07.015

Oliver, J. D., & Rosen, D. E. (2010). Applying the environmental propensity framework: A segmented approach to hybrid electric vehicle marketing strategies. *Journal of Marketing Theory and Practices, 18*(4), 377–393. https://doi.org/10.2753/MTP1069-6679180405

Pahari, S., Ghosal, I., Prasad, B., & Dildar, S. M. (2023). Which determinants impact consumer purchase behavior toward online purchasing of organic food products? *Prabandhan: Indian Journal of Management, 16*(1), 25–41. https://doi.org/10.17010/pijom/2023/v16i1/172667

Parasuraman, A., Zeithaml, V. A., & Malhotra, A. (2005). E-S-QUAL: A multiple-item scale for assessing electronic service quality. *Journal of Service Research, 7*(3), 213–233. https://doi.org/10.1177/1094670504271156

Phipps, M., Ozanne, L. K., Luchs, M. G., Subrahmanyan, S., Kapitan, S., Catlin, J. R., Gau, R., Naylor, R. W., Rose, R. L., Simpson, B., & Weaver, T. (2013). Understanding the inherent complexity of sustainable consumption: A social cognitive framework. *Journal of Business Research, 66*(8), 1227–1234. https://doi.org/10.1016/j.jbusres.2012.08.016

Pita, P., Winyuchakrit, P., & Limmeechokchai, B. (2020). Analysis of factors affecting energy consumption and CO_2 emissions in Thailand's road passenger transport. *Heliyon, 6*(10), E05112. https://doi.org/10.1016/j.heliyon.2020.e05112

Rafique, S., & Town, G. E. (2018). Potential for electric vehicle adoption in Australia. *International Journal of Sustainable Transportation, 13*(4), 245–254. https://doi.org/10.1080/15568318.2018.1463416

Razak, M. I., Yusof, A. M., Mashahadi, F., Alias, Z., & Othman, M. Z. (2014). Intention to purchase hybrid cars in Malaysia: An overview. *International Journal of Economics, Commerce and Management, 2*(10), 1–13.

Reimers, P. (2021). The subsidized green revolution: The impact of public incentives on the automotive industry to promote alternative fuel vehicles (AFVs) in the period from 2010 to 2018. *Energies, 14*(18), 5765. https://doi.org/10.3390/en14185765

Saini, K., Khan, N., & Khan, M. (2024). A narrative review of stresses and conflicts of marketing in social organizations. *Prabandhan: Indian Journal of Management, 17*(1), 24–43. https://doi.org/10.17010/pijom/2024/v17i1/173289

Sajjad, A., Ibrahim, Y., Shamsuddin, J., & Sharif, S. (2023). Impact of entrepreneurial orientation on SME performance: The moderating role of environmental turbulence. *Prabandhan: Indian Journal of Management, 16*(5), 18–36. https://doi.org/10.17010/pijom/2023/v16i5/172823

Sehgal, A., Saxena, N., & Pradhan, S. (2022). Technical resilience in intrapreneurs for product innovations: An exploratory study. *Prabandhan: Indian Journal of Management, 15*(10), 28–46. https://doi.org/10.17010/pijom/2022/v15i10/172407

Shokeen, A., Kumar, A., & Khanna, S. (2023). Understanding students' behavioral intention to adopt blended learning: Modified UTAUT model. *Prabandhan: Indian Journal of Management, 16*(11), 43–64. https://doi.org/10.17010/pijom/2023/v16i11/170915

Silvester, S., Beella, S. K., van Timmeren, A., Bauer, P., Quist, J., & van Dijk, S. (2013). Exploring design scenarios for large-scale implementation of electric vehicles; the Amsterdam Airport Schiphol case. *Journal of Cleaner Production, 48*, 211–219. https://doi.org/10.1016/j.jclepro.2012.07.053

Simsekoglu, Ö., & Nayum, A. (2019). Predictors of intention to buy a battery electric vehicle among conventional car drivers. *Transportation Research Part F: Traffic Psychology and Behaviour, 60*, 1–10. https://doi.org/10.1016/j.trf.2018.10.001

Sovacool, B. K. (2017). Experts, theories, and electric mobility transitions: Toward an integrated conceptual framework for the adoption of electric vehicles. *Energy Research & Social Science, 27*, 78–95. https://doi.org/10.1016/j.erss.2017.02.014

Statista. (2021, November 9). *Number of electric car (EV) sales in Asia-Pacific region in 2023, by selected country*. https://www.statista.com/statistics/1107823/apac-ev-sales-volume-by-country/

Sun, S. (2021, May 10). Sales of electric vehicles across India from financial year 2020 to 2021, by type. *Statista*. https://www.statista.com/statistics/1234761/india-electric-vehicle-sales-by-type/

Swachh Survekshan: Indore gets cleanest city tag for 5th year in a row; Chhattishgarh cleanest state. (2021, November 22). *The Economic Times*. https://economictimes.indiatimes.com/news/india/indore-cleanest-city-for-5th-time-in-row-in-centres-annual-cleanliness-survey/articleshow/87814180.cms?from=mdr

Tamor, M. A., Gearhart, C., & Soto, C. (2013). A statistical approach to estimating acceptance of electric vehicles and electrification of personal transportation. *Transportation Research Part C: Emerging Technologies, 26*, 125–134. https://doi.org/10.1016/j.trc.2012.07.007

Tran, V., Zhao, S., Diop, E. B., & Song, W. (2019). Travelers' acceptance of electric carsharing systems in developing countries: The case of China. *Sustainability, 11*(19), 5348. https://doi.org/10.3390/su11195348

Tu, J.-C., & Yang, C. (2019). Key factors influencing consumers' purchase of electric vehicles. *Sustainability, 11*(14), 3863. https://doi.org/10.3390/su11143863

U. S. Energy Information Administration. (2019). *What countries are the top producers and consumers of oil*? https://www.eia.gov/tools/faqs/faq.php?id=709&t=6

Venkatesh, V., Thong, J. Y., & Xu, X. (2012). Consumer acceptance and use of information technology: Extending the unified theory of acceptance and use of technology. *MIS Quarterly, 36*(1), 157–178. https://doi.org/10.2307/41410412

Vongurai, R. (2020). Factors affecting customer brand preference toward electric vehicle in Bangkok, Thailand. *The Journal of Asian Finance, Economics and Business, 7*(8), 383–393. https://doi.org/10.13106/jafeb.2020.vol7.no8.383

Wang, S., Fan, J., Zhao, D., Yang, S., & Fu, Y. (2016). Predicting consumers' intention to adopt hybrid electric vehicles: Using an extended version of the theory of planned behavior model. *Transportation, 43*(1), 123–143. https://doi.org/10.1007/s11116-014-9567-9

Wang, S., Wang, J., Li, J., Wang, J., & Liang, L. (2018). Policy implications for promoting the adoption of electric vehicles: Do consumer's knowledge, perceived risk and financial incentive policy matter? *Transportation Research Part A: Policy and Practice, 117*, 58–69. https://doi.org/10.1016/j.tra.2018.08.014

Wolf, A., & Seebauer, S. (2014). Technology adoption of electric bicycles: A survey among early adopters. *Transportation Research Part A: Policy and Practice, 69*, 196–211. https://doi.org/10.1016/j.tra.2014.08.007

Wu, J., Liao, H., Wang, J.-W., & Chen, T. (2019). The role of environmental concern in the public acceptance of autonomous electric vehicles: A survey from China. *Transportation Research Part F: Traffic Psychology and Behaviour, 60*, 37–46. https://doi.org/10.1016/j.trf.2018.09.029

Xu, Z., Zhang, K., Min, H., Wang, Z., Zhao, X., & Liu, P. (2018). What drives people to accept automated vehicles? Finding from the field experiment. *Transportation Research Part C: Emerging Technologies, 95*, 320–334. https://doi.org/10.1016/j.trc.2018.07.024

Yuen, K. F., Wong, Y. D., Ma, F., & Wang, X. (2020). The determinants of public acceptance of autonomous vehicles: An innovation diffusion perspective. *Journal of Cleaner Production, 270*, 121904. https://doi.org/10.1016/j.jclepro.2020.121904

Zhang, T., Tao, D., Qu, X., Zhang, X., Lin, R., & Zhang, W. (2019). The role of initial trust and perceived risk in public's acceptance of automated vehicles. *Transportation Research Part C: Emerging Technologies, 98*, 207–220. https://doi.org/10.1016/j.trc.2018.11.018

Zhang, T., Tao, D., Qu, X., Zhang, X., Zeng, J., Zhu, H., & Zhu, H. (2020). Automated vehicle acceptance in China: Social Influence and initial trust are key determinants. *Transportation Research Part C: Emerging Technologies, 112*, 220–233. https://doi.org/10.1016/j.trc.2020.01.027

Zhang, X., Liang, Y., Yu, E., Rao, R., & Xie, J. (2017). Review of electric vehicle policies in China: Content summary and effect analysis. *Renewable and Sustainable Energy Reviews, 70*, 698–714. https://doi.org/10.1016/j.rser.2016.11.250

Zhang, X., Xie, J., Rao, R., & Liang, Y. (2014). Policy incentives for the adoption of electric vehicles across countries. *Sustainability, 6*(11), 8056–8078. https://doi.org/10.3390/su6118056

Zhuge, C., Wei, B., Shao, C., Dong, C., Meng, M., & Zhang, J. (2020). The potential influence of cost-related factors on the adoption of electric vehicle: An integrated micro-simulation approach. *Journal of Cleaner Production, 250*, 119479. https://doi.org/10.1016/j.jclepro.2019.119479

Zoellick, J. C., Kuhlmey, A., Schenk, L., Schindel, D., & Blüher, S. (2019). Amused, accepted, and used? Attitudes and emotions towards automated vehicles, their relationships, and predictive value for usage intention. *Transportation Research Part F: Traffic Psychology and Behaviour, 65*, 68–78. https://doi.org/10.1016/j.trf.2019.07.009

About the Authors

Dr. Rekha Attri has a rich experience of more than 17 years as an academician, a researcher, and a trainer. Her core strength lies in the areas of brand management, sales management and business development, consumer behavior, and customer relationship management. She has worked on consulting assignments and has conducted workshops and FDPs. She has reviewed the book on *Brand Management and Rural Marketing* for Oxford Publication India Ltd. She has also developed content for the Australian Technical & Management College. Presently, Dr. Rekha Attri is working as a Professor and Dean - Student Affairs at Jaipuria Institute of Management.

Dr. Pooja S. Kushwaha is an academician and trainer with more than 16 years of experience in the field of information systems. An IBM Certified Analytics trainer has Google certification in the area of analytics and search engine optimization and digital marketing. She has conducted various MDP sessions for corporates. At present, she is working with Jaipuria Institute of Management, Indore, as an Associate Professor (Information Technology and Business Analytics).