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Pro-Environmental Purchase Behaviour and Attitudinal Drivers of Electric Vehicle Adoption in India

Kanan Nagar [1], Dr. Gargi Sharma [2]
[1]*Research Scholar, Department of Management, IIS University, Jaipur, India*
[2]*Associate Professor, Department of Management, IIS University, Jaipur, India*

Abstract
The objective of this study is to examine the factors affecting Pro-Environmental Purchase Behaviour (PEPB) of individuals, principally the psychological and perceptual drivers, including Perceived Economic Benefit (PEB), Environmental Concern (EC), Social Influence (SI), Self-Image (SIM), and Online Reviews (OR). Thereby, the research investigates the mediating role played by the Behavioural Intention (BI) between these constructs and PEPB. The data collection unfolded through the distribution of a structured questionnaire to 366 respondents from varying demographic backgrounds. The study used Partial Least Squares Structural Equation Modelling (PLS-SEM) to test the hypothesised relationships. The analysis showed that PEB, EC, SI, SIM, and OR exerted a positive influence on PEPB, the strongest impacts being exerted by Online Review and Perceived Economic Benefit. In addition, it was discovered that Behavioral Intention mediates significantly the relationship between PEB, EC, and PEPB, thus emphasizing the view that intention should be considered when studying environmentally friendly purchasing decisions. Our study was limited to a digital-savvy population given the nature of the data collected from an online survey, and the findings would have otherwise not been generalized to any non-tech-savvy groups. Future studies can therefore consider taking longitudinal approaches and other factors such as information transparency, risk perception etc. This research extends the domain of Pro-Environmental Purchase Behaviour by including factors such as self-image, social influence, and online reviews. Theoretically and practically, this study contributes by giving importance to behavioural intention in promoting environmentally conscious consumer behaviour. The findings provide actionable insights that marketers and policymakers can use to promote sustainable consumption.

Keywords: *Pro-Environmental Purchase Behaviour, Behavioural Intention, Perceived Economic Benefit, Environmental Concern, Social Influence, Self-Image, Online Reviews*

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I. INTRODUCTION

The global transition toward sustainable transportation has been catching up over the past few years with EVs now being a practical alternative to conventional fossil-fuel-powered automobiles (Suganya et al., 2025). In addition to pressing environmental challenges such as climate change, air pollution, and the depletion of non-renewable resources, greener mobility solutions have emerged as a top priority for governments, industries, and consumers alike (Tariq, 2024). In India, as one of the world's fastest-growing automobile markets and a committed participant in global climate goals, a range of opportunities, policy incentives, and initiatives have been introduced to accelerate the adoption of electric vehicles (Dutta & Padmanaban, 2025). But adoption has stayed relatively modest in India despite a good amount being spent on infrastructure and fiscal incentives (Mittal et al., 2024). Hence it becomes a matter of study to understand the behavioural drivers on consumer adoption to bridge the gap between environmental awareness and pro-environment purchase decisions.

The research deals with the study of attitudinal and psychological fators affecting pro-environmental purchase behaviour, especially concerning electric vehicle adoption in India. Rooted in behavioural theories and sustainability studies, it investigates how factors such as perceived economic benefit, environmental concern, self-image, social influence, and online reviews influence behavioural intention and constitute the causal antecedents of real-world purchase behaviour (Ashwini & Aithal, 2023). While most literature concentrates on technological, infrastructural, or policy aspects, the consumer mindset remains unexplored. This becomes a big gap especially in emerging economies such as India, where an extremely diverse cultural, social, and economic context will ask questions about behavioural intention.

The investigation investigates the structural relations between these attitudinal constructs and their influence on pro-environmental purchase actions, using PLS-SEM. It further identifies psychological and demographic determinants that influence consumer decision-making. Hence, the study contributes to both theory

and practice by providing an enriched understanding of how the translation of behavioural intention into environmentally conscious consumer behaviour occurs in the domain of electric vehicle adoption.

Objectives of the study:

i. To examine structural relationships between major attitude factors like perceived economic benefit, environmental concern, self-image, social influence, and online reviews, and behavioural intention to adopt electric vehicles using PLS-SEM in India.

The study is structured to examine the factors influencing electric vehicle adoption in India. Section 1 introduces the research context, objectives, and questions. Section 2 reviews relevant literature and develops hypotheses. Section 3 outlines the methodology, while Section 4 presents the data analysis and results. Section 5 concludes with key findings, implications, limitations, and future research directions.

II. REVIEW OF LITERATURE

Literature review brings about a theoretical framework for grasping factors influencing electric vehicle adoption in India.

- **Attitudinal Drivers of Electric Vehicle Adoption**

Consumer adoption of electric vehicles (EVs) is shaped by both intrinsic motivations, such as environmental concern and personal values, and extrinsic factors including government incentives, charging infrastructure, and fuel savings (Mekić & Rešidović, 2025; Zhang et al., 2018). Balancing these drivers requires policies and awareness initiatives that help translate intention into actual adoption.

A review by Prakhar et al. (2025), using the TCCM framework, showed that research on EV adoption commonly draws on models such as the Theory of Planned Behaviour, Innovation Diffusion Theory, Technology Acceptance Model, and UTAUT. Key influences identified include perceived risk, effort expectancy, social norms, government policy, and ecological knowledge (Jain et al., 2022). **Perceived Economic Benefit (PEB)** captures beliefs about cost advantages such as savings on fuel and maintenance (Yildiz et al., 2024; Sutanto et al., 2025). **Environmental Concern (EC)** reflects awareness and motivation to act on ecological issues (Han et al., 2021; Gifford & Nilsson, 2014). **Social Influence (SI)** represents the perceived social pressure to adopt EVs from peers and society (Axsen et al., 2013). **Self-Image (SIM)** denotes alignment of EV adoption with personal identity and values (Bennett & Vijaygopal, 2018). **Online Reviews (OR)** act as electronic word-of-mouth influencing purchase credibility and perceptions (Nisar et al., 2020). Informed by the Theory of Planned Behaviour, **Behavioural Intention (BI)** is positioned as a direct antecedent of **Pro-Environmental Purchase Behaviour (PEPB)** (Irfan, 2024), and is also hypothesised to mediate the influence of attitudinal drivers.

Perceptions of financial advantages are consistently cited as a key determinant of EV adoption. Lower fuel and maintenance costs create strong economic appeal (Yildiz et al., 2024; Sutanto et al., 2025). Prior studies confirm that perceived economic value strengthens purchase intention, particularly in price-sensitive markets such as India. This underpins Hypothesis (**H1).**

H1: Perceived Economic Benefit (PEB) has a positive effect on Behavioural Intention (BI).

Environmental awareness and ecological values significantly predict pro-environmental consumption. Individuals who express concern about climate change and sustainability are more inclined to adopt EVs as part of their green lifestyle (Han et al., 2021; Onel, 2017). Research also suggests that environmental concern not only influences intention but can directly translate into green purchase behaviour (De Canio et al., 2021). This dual pathway justifies following hypotheses **H2** and **H3**.

H2: Environmental Concern (EC) has a positive effect on Behavioural Intention (BI).

H3: Environmental Concern (EC) has a positive effect on Pro-Environmental Purchase Behaviour (PEPB).

Social norms and peer expectations exert strong effects on consumer behaviour. Studies on EV adoption and green consumption demonstrate that family, friends, and societal pressures encourage sustainable choices (Axsen et al., 2013; Johnstone & Hooper, 2016). Since social influence can directly shape purchase behaviour, following hypothesis (**H4)** proposes its effect on PEPB.

H4: Social Influence (SI) has a positive effect on Pro-Environmental Purchase Behaviour (PEPB).

Green consumption has been linked to identity expression. Consumers adopt pro-environmental products to align their self-concept with socially responsible and environmentally conscious values (Bennett & Vijaygopal, 2018). Evidence suggests that EVs can serve as symbolic goods representing ecological identity (Rahma et al., 2025). Thus, following hypothesis (H5) positions self-image as a predictor of PEPB.

H5: Self-Image (SIM) has a positive effect on Pro-Environmental Purchase Behaviour (PEPB).

Electronic word-of-mouth is a critical information source in technology adoption. Reviews enhance perceived credibility, reduce uncertainty, and shape consumer trust in sustainable products (Sotiriadis & Van Zyl, 2013; Nisar et al., 2020). In the EV context, online reviews influence performance perceptions and can directly encourage purchase. This justifies following hypothesis:

H6: Online Reviews (OR) have a positive effect on Pro-Environmental Purchase Behaviour (PEPB).

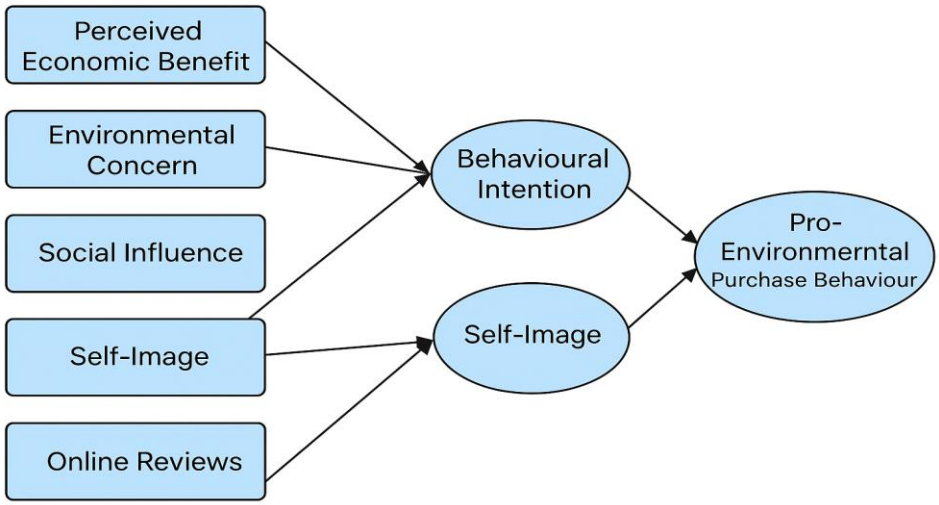
- **Conceptual Framework and Hypotheses Development**

Previous research on green mobility adoption provides valuable theoretical grounding for understanding consumer behaviour. Gumasing (2025), for instance, examined e-bike adoption among Filipino commuters through the combined lenses of the Diffusion of Innovation (DOI) and Technology Acceptance Model (TAM). Using PLS-SEM with 340 respondents, the study found behavioural intention to be the strongest predictor of actual usage, with perceived usefulness, ease of use, social influence, and awareness emerging as immediate antecedents. Infrastructure and trialability enhanced these perceptions, while government policies showed little direct relevance, highlighting the importance of contextual barriers. Similarly, Zhao et al. (2024) investigated green purchase intention (GPI) through a dual-method framework (PLS-SEM and NCA), demonstrating the mediating roles of perceived environmental responsibility (PER) and self-efficacy (PSE). Their findings underscored the importance of perceptions of responsibility, efficacy, and green value in strengthening pro-environmental purchase behaviour, and pointed to the practical need for stronger green education and certification systems.

Building on these insights, the present study integrates attitudinal and behavioural theories to explore **Pro-Environmental Purchase Behaviour (PEPB)** and the **attitudinal drivers of electric vehicle (EV) adoption in India**. The model considers five independent constructs—**Perceived Economic Benefit (PEB), Environmental Concern (EC), Social Influence (SI), Self-Image (SIM), and Online Reviews (OR)**—which influence **Behavioural Intention (BI)** and **PEPB**.

The conceptual model given below in figure1, thus hypothesizes the influence of key attitudinal factors upon behavioural intention and pro-environmental purchase behaviour with regard to electric vehicle adoption. The model casts perceived economic benefit, environmental concern, social influence, self-image and online reviews as independent variables, with behavioural intention as mediator and pro-environmental purchase behaviour as the dependent variable.

Figure 1: Conceptual Model



Source: Author's Creation for this study

III. RESEARCH METHODOLOGY

A structured questionnaire was administered to 400 respondents, of which 366 valid responses were retained after removing incomplete entries. Purposive sampling targeted consumers aware of sustainable practices and online reviews, with basic demographics such as age, gender, and education collected. Verbal consent was obtained from all participants prior to data collection, and no monetary incentives were offered. Responses were recorded on a five-point Likert scale. Exploratory Factor Analysis (EFA) confirmed data adequacy (KMO and Bartlett's tests), while Partial Least Squares Structural Equation Modelling (PLS-SEM) in SmartPLS 4 tested the conceptual framework. Reliability and validity were assessed through Cronbach's Alpha, Composite Reliability, AVE, and HTMT ratios, with bootstrapping (10,000 resamples) establishing path significance. PLS-SEM was preferred over CB-SEM for its predictive accuracy and suitability for exploratory models, ensuring robustness and generalizability of findings. Sampling adequacy was supported by a KMO value of 0.894, while Bartlett's Test of Sphericity indicated a highly significant chi-square value of 11611.95 ($p < 0.001$), showing that the data were fit for factor analysis (Shrestha, 2021). Six factors were retained in the above conceptual diagram, namely

Perceived Economic Benefit (PEB), Environmental Concern (EC), Social Influence (SI), Self-Image (SIM), Online Reviews, and Behavioural Intention (BI), with all eigenvalues above 1(Cliff, 1988) and with factor loadings greater than 0.6 and accounting for 69.412% of total variance. From the reliability analysis, all Cronbach's alphas were above 0.80 for all constructs, confirming their suitability for further structural model analysis (Shelby, 2011).

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.894
Bartlett's Test of Sphericity	Approx. Chi-Square	11611.955
	df	630
	Sig.	0.000
Communalities		
	Initial	Extraction
[When there is a choice, I always choose the product that contributes to the least amount of environmental damage.]	1.000	.673
[I have switched products for environmental reasons.]	1.000	.627
[If I understand the potential damage to the environment that some products can cause, I do not purchase those products.]	1.000	.588
[I do not buy household products that harm the environment.]	1.000	.629
[Whenever possible, I buy products packaged in reusable or recyclable containers.]	1.000	.625
[I make every effort to buy paper products (paper bags, tissues, etc.) made from recycled paper.]	1.000	.698
[I will not buy a product if I know that the company that sells it is socially irresponsible.]	1.000	.655
[I do not buy products from companies that I know use sweatshop labor, child labor, or other poor working conditions]	1.000	.867
[I have paid more for environmentally friendly products when there is a cheaper alternative.]	1.000	.841
[I have paid more for socially responsible products when there is a cheaper alternative.]	1.000	.785
[I would recommend the adoption of an electric vehicle to others]	1.000	.779
[I would speak favorably about the electric vehicle to others.]	1.000	.674
[I would definitely adopt an electric vehicle.]	1.000	.794
[I want to adopt an electric vehicle because of increased air pollution]	1.000	.764
[The Electric vehicle can contribute to the environment for saving the future generation.]	1.000	.651
[I am familiar with environmental benefits offered by the electric vehicle.]	1.000	.691
[I want to conserve the environment using the electric vehicle over the conventional vehicle.]	1.000	.739
[People will react positively when they see an electric vehicle on the road]	1.000	.740
[I think I am more likely to adopt an electric vehicle if my friends and relatives adopt it.]	1.000	.666
[People whose opinions are important to me find electric vehicles good]	1.000	.526
[Possessing an electric vehicle would be a status symbol for me.]	1.000	.721
[Driving an electric vehicle fits my style.]	1.000	.763
[Driving an electric vehicle will reflect my personality.]	1.000	.765
[Eco-friendly people will opt the electric vehicle.]	1.000	.769
[My knowledge about the electric vehicle will improve my image.]	1.000	.547
[I am favorably inclined to switch to an electric vehicle.]	1.000	.749
[Driving an electric vehicle will be a wise decision.]	1.000	.732
[It makes sense to use an electric vehicle instead of a conventional vehicle.]	1.000	.785
[I think I can fulfil all my transport needs with an electric car that has a range of 100 miles before recharging]	1.000	.664

[Electric cars are relatively more expensive to purchase but can pay for themselves in lower fuel costs]	1.000	.656
[I would value the ability to refuel my car from home]	1.000	.776
[I think it would be easy for me to find places to plug in an electric car]	1.000	.710
[Electric cars are less reliable than conventional cars]	1.000	.788
[I would feel relatively less safe in an electric car]	1.000	.745
[I think electric cars would be complicated to use]	1.000	.779
[Electric cars don't offer enough performance]	1.000	.537
Extraction Method: Principal Component Analysis.		

Total Variance Explained

Component	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	13.443	37.342	37.342	13.443	37.342	37.342	4.407	12.242	12.242
2	2.719	7.552	44.894	2.719	7.552	44.894	3.942	10.950	23.192
3	2.466	6.849	51.743	2.466	6.849	51.743	3.591	9.975	33.166
4	1.968	5.466	57.210	1.968	5.466	57.210	3.520	9.777	42.944
5	1.724	4.789	61.999	1.724	4.789	61.999	3.499	9.721	52.664
6	1.531	4.254	66.253	1.531	4.254	66.253	3.484	9.678	62.343
7	1.137	3.159	69.412	1.137	3.159	69.412	2.545	7.069	69.412
Extraction Method: Principal Component Analysis.									

Rotated Component Matrix[a]

	Component						
	1	2	3	4	5	6	7
	BI	EC	NA	PA	PEB	SI	SIM
[I would recommend the adoption of an electric vehicle to others]	0.871						
[I would speak favorably about the electric vehicle to others.]	0.877						
[I would definitely adopt an electric vehicle.]	0.864						
[I want to adopt an electric vehicle because of increased air pollution]		0.550					
[The Electric vehicle can contribute to the environment for saving the future generation.]		0.816					
[I am familiar with environmental benefits offered by the electric vehicle.]		0.871					
[I want to conserve the environment using the electric vehicle over the conventional vehicle.]		0.868					
[Electric cars are less reliable than conventional cars]			0.883				
[I would feel relatively less safe in an electric car]			0.857				
[I think electric cars would be complicated to use]			0.883				
[Electric cars don't offer enough performance]			0.613				
[I am favorably inclined to switch to an electric vehicle.]				0.780			
[Driving an electric vehicle will be a wise decision.]				0.823			
[It makes sense to use an electric vehicle instead of a conventional vehicle.]				0.812			
[I think I can fulfil all my transport needs with an electric car that has a range of 100 miles before recharging]				0.815			
[Electric cars are relatively more expensive to purchase but can pay for themselves in lower fuel costs]				0.770			
[I would value the ability to refuel my car from home]				0.727			
[I think it would be easy for me to find places to plug in an electric car]				0.750			
[I will save on fuel expenses, as running cost should be lower in case of an electric vehicle.]					0.881		

[The maintenance cost for an electric vehicle will be less.]					0.847		
[Overall cost of owning an electric vehicle will be low due to government incentives (incentives = lower road tax/less insurance premium/cheaper loan)]					0.885		
[I am fully familiar with the economic benefits offered by the electric vehicle.]					0.851		
[Driving an electric vehicle fits my style.]							0.878
[Driving an electric vehicle will reflect my personality.]							0.877
[Eco-friendly people will opt the electric vehicle.]							0.883
[My knowledge about the electric vehicle will improve my image.]							0.595
[People will react positively when they see an electric vehicle on the road]						0.812	
[I think I am more likely to adopt an electric vehicle if my friends and relatives adopt it.]						0.774	
[People whose opinions are important to me find electric vehicles good]						0.546	
[Possessing an electric vehicle would be a status symbol for me.]						0.627	
Extraction Method: Principal Component Analysis. Rotation Method: Varimax with Kaiser Normalization.							
Rotation converged in 6 iterations.							

IV. ANALYSIS AND INTERPRETATION

The study had 366 valid respondents. In terms of age distribution, most respondents were between 21 and 30 years of age (40.3%), closely followed by those below 21 years (37.6%), which clearly shows that the sample was considered mainly young. Gender-wise, 57.7% were females and 42.3% males. In terms of educational qualification, the majority of respondents were graduates (41.0%), followed by postgraduates (30.7%) and those who had completed their 12th standard (12.4%). Only some few held professional qualifications (4.7%) or doctorates (11.2%). With regard to their occupation, students represented the highest number (53.6%), followed by employment in educational institutions (20.0%) and corporate sectors (13.9%). These were followed by categories of owning a business (4.7%), freelancing (4.5%), government employment (2.1%), and unemployment (1.1%). Considering annual household income, the responses were fairly distributed with 34.8% each falling in the 1–5 lakh and 5–12 lakh brackets, an 18.9% of people earning more than 12 lakhs, whilst 11.6% reported income less than 1 lakh.

4.1 Measurement Model Assessment

The measurement model assessment aims at testing the reliability and validity of constructs used in the study. This involves testing the internal consistency, convergent validity, and discriminant validity to support the use of these reflective scales in measuring constructs with validated properties.

Outer loadings and VIF value of Measurement Model

	Outer loadings	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	VIF
Bi_1 <- behavioural intention	0.718	0.717	0.026	27.140	0.000	2.751
Bi_2 <- behavioural intention	0.693	0.692	0.028	24.543	0.000	2.141
Bi_3 <- behavioural intention	0.731	0.731	0.026	28.376	0.000	2.566
Bi_4 <- behavioural intention	0.743	0.743	0.024	30.529	0.000	2.639
Bi_5 <- behavioural intention	0.741	0.741	0.025	29.828	0.000	2.549
Bi_6 <- behavioural intention	0.759	0.759	0.023	33.064	0.000	3.161
Cbb_1 <- pro- environmental purchase behaviour	0.840	0.840	0.015	55.043	0.000	3.087
Cbb_2 <- pro- environmental purchase behaviour	0.821	0.822	0.016	52.857	0.000	2.828
Cbb_3 <- pro- environmental purchase behaviour	0.799	0.799	0.021	38.784	0.000	2.268
Cbb_4 <- pro- environmental purchase behaviour	0.817	0.817	0.019	42.723	0.000	2.720
Cbb_5 <- pro- environmental purchase behaviour	0.750	0.750	0.030	25.173	0.000	2.378
Cbb_6 <- pro- environmental purchase behaviour	0.782	0.781	0.024	33.255	0.000	2.884

Cbb_7 <- pro- environmental purchase behaviour	0.767	0.767	0.024	31.586	0.000	2.338
Ec_2 <- environmental concern	0.854	0.853	0.019	45.754	0.000	1.864
Ec_3 <- environmental concern	0.890	0.890	0.012	75.793	0.000	2.239
Ec_4 <- environmental concern	0.885	0.885	0.014	65.058	0.000	2.188
PA_1 <- Online reviews	0.823	0.823	0.020	42.183	0.000	2.614
PA_2 <- Online reviews	0.840	0.840	0.016	53.975	0.000	2.591
PA_3 <- Online reviews	0.842	0.842	0.016	51.340	0.000	2.922
PA_4 <- Online reviews	0.826	0.826	0.017	49.411	0.000	2.388
PA_5 <- Online reviews	0.796	0.796	0.019	42.395	0.000	2.133
PA_6 <- Online reviews	0.668	0.666	0.039	17.213	0.000	2.051
PA_7 <- Online reviews	0.695	0.694	0.032	21.687	0.000	2.153
Peb_1 <- perceived economic benefit	0.881	0.881	0.012	71.236	0.000	2.117
Peb_2 <- perceived economic benefit	0.881	0.881	0.012	74.342	0.000	2.112
Peb_3 <- perceived economic benefit	0.865	0.865	0.014	62.035	0.000	1.951
Si_1 <- social influence	0.888	0.889	0.012	75.913	0.000	2.404
Si_2 <- social influence	0.866	0.867	0.017	50.130	0.000	2.430
Si_4 <- social influence	0.488	0.482	0.073	6.733	0.000	2.616
Sim_1 <- self-image	0.878	0.878	0.011	80.643	0.000	1.215
Sim_2 <- self-image	0.874	0.875	0.011	79.330	0.000	1.816
Sim_3 <- self-image	0.888	0.888	0.012	73.821	0.000	1.763
Sim_4 <- self-image	0.593	0.591	0.045	13.234	0.000	1.067

In the present study of pro-environmental purchase behaviours towards electric vehicles, in assessing indicator reliability by outer loadings, it was found that the measurement model is robust. Outer loadings above 0.70 indicate that item reliability is satisfactory (Kamis et al., 2020), with most indicators being above this threshold. The VIF values of all indicators were well below the more conservative threshold of 3.3 for checking multicollinearity issues (Diamantopoulos & Siguaw, 2006). Summarily, the outer loading results obviously uphold the measurement model as satisfactory for evaluating those factors influencing pro-environmental purchase intentions in the domain of electric vehicles.

4.2.2 Construct Reliability and Convergent Validity Assessment

All constructs proved to have good reliability, with Cronbach's alpha values ranging from 0.631 (Social Influence) to 0.904 (Pro-Environmental Purchase Behaviour), all exceeding the minimum fiducial level of 0.60. Composite reliability (rho_c) of all constructs was much higher than the 0.70 threshold, while Online Reviews (0.919) and Pro-Environmental Purchase Behaviour (0.924) were more than well internally consistent.

Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Behavioural Intention	0.825	0.826	0.873	0.534
Environmental Concern	0.849	0.849	0.908	0.768
Online Reviews	0.896	0.902	0.919	0.620
Perceived Economic Benefit	0.848	0.848	0.908	0.767
Pro- Environmental Purchase Behaviour	0.904	0.905	0.924	0.635
Self-Image	0.826	0.856	0.887	0.669
Social Influence	0.631	0.721	0.805	0.593

Convergent validity is evidenced by AVE values that were all above 0.50, which implies that the latent variables absorb more than 50% of the variance relative to error measurement. Environmental Concern with 0.768, Perceived Economic Benefit with 0.767, and Self-Image with 0.669 recorded high AVE, thus confirming strong

convergent validity (G. W. Cheung et al., 2024). Social Influence with its lower Cronbach's alpha of 0.631 found its acceptance with the composite reliability of 0.805 and an AVE of 0.593, all deemed acceptable based on its theoretical relevance. Overall, the measurement model shows good construct reliability and convergent validity, warranting further structural model analysis.

4.2.3 Assessment of Discriminant Validity

Discriminant validity is concerned with the extent to which multiple constructs in a model are indeed distinct (Rönkkö & Cho, 2022; Shaffer et al., 2016). As far as the study on pro-environmental purchase behaviour is concerned, two major criteria- the Fornell–Larcker criterion, and the Heterotrait–Monotrait Ratio (HTMT) were put to use to infer discriminant validity. The Fornell–Larcker criterion suggests that the square root of the Average Variance Extracted (AVE) for each construct should be higher than the correlation observed with any other latent variables (Ab Hamid et al., 2017). This condition stands true in our case, as all the diagonal values in the table are higher than their inter-construct correlations off the diagonal. For instance, the square root of AVE for Environmental Concern (0.876) is higher than the correlation between Social Influence (0.745) and other constructs. This also suggests that one could speak of discriminate validity here.

Discriminant validity-Heterotrait-monotrait ratio (HTMT) - Matrix							
	Behavioural intention	Environmental concern	Online reviews	Perceived economic benefit	Pro- environmental purchase behaviour	Self-image	Social influence
Behavioural intention							
Environmental concern	0.570						
Online reviews	0.792	0.598					
Perceived economic benefit	0.698	0.549	0.672				
Pro- environmental purchase behaviour	0.754	0.629	0.805	0.776			
Self-image	0.514	0.425	0.549	0.531	0.663		
Social influence	0.693	0.844	0.768	0.665	0.793	0.803	
Fornell-Larcker criterion							
	Behavioural intention	Environmental concern	Online reviews	Perceived economic benefit	Pro- environmental purchase behaviour	Self-image	Social influence
Behavioural intention	0.731						
Environmental concern	0.480	0.876					
Online reviews	0.672	0.517	0.787				
Perceived economic benefit	0.586	0.466	0.581	0.876			
Pro- environmental purchase behaviour	0.657	0.552	0.715	0.679	0.797		
Self-image	0.430	0.357	0.463	0.443	0.578	0.818	
Social influence	0.477	0.745	0.555	0.466	0.562	0.490	0.770

In addition, the HTMT values further confirm that constructs are separate. As per **(Henseler et al., 2015)**, a conservative threshold considers HTMT values less than 0.85, whereas more liberal thresholds accept values less than 0.90. Most HTMT values in this study lie below the 0.85 cut-off. Thus, by both standards, all constructs display proper discriminant validity to foster their distinctiveness in the structural model.

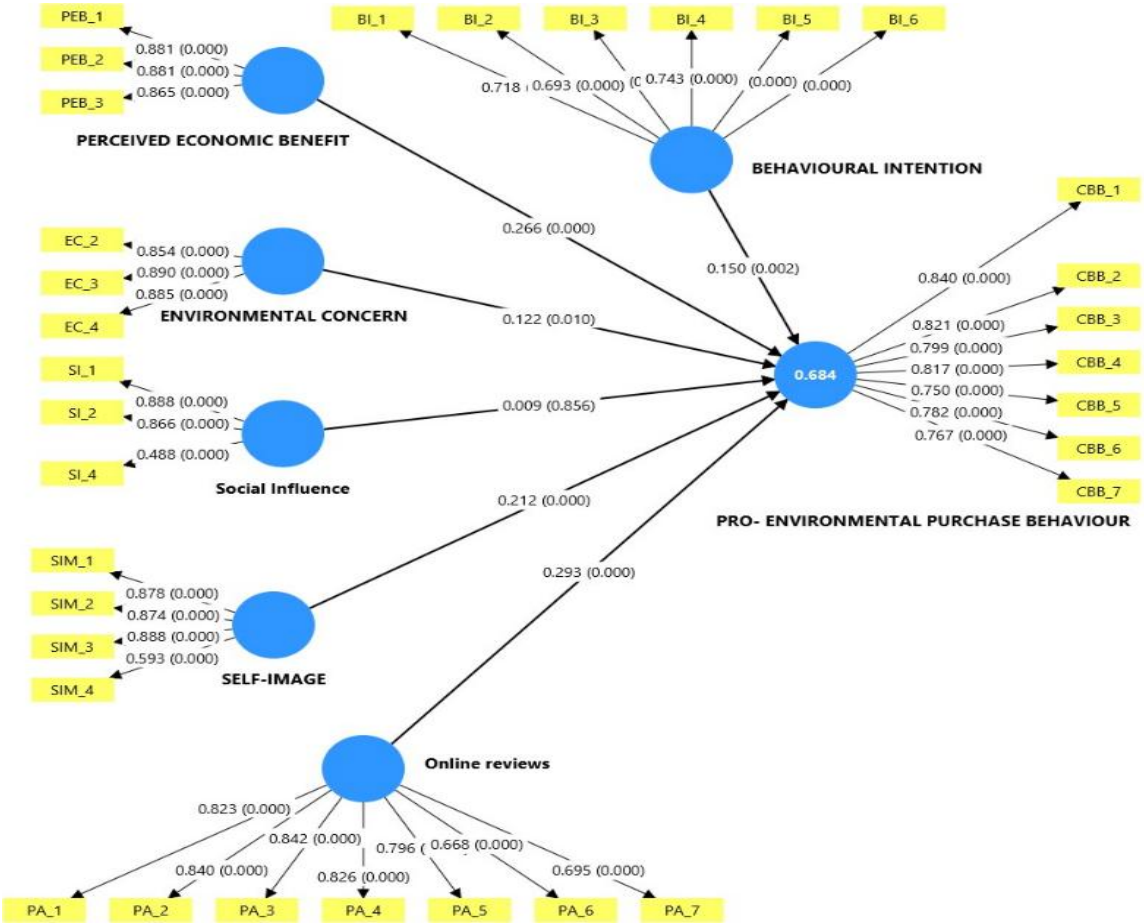
Pro-Environmental Purchase Behaviour (PEPB) were examined to assess the explanatory and predictive power of the structural model. The R^2 value came out to be 0.684 for PEPB, which means that about 68.4% of the variance in PEPB is explained by the six independent constructs. The adjusted R^2 for PEPB was 0.679, though slightly lower, still asserted strong model fit and explanatory relevance (Hair et al., 2019). SRMR value was 0.104 for both models. SRMR values below 0.08 are considered in general to be the best (Ximénez et al., 2022); however, in some exploratory situations, SRMR values less than 0.10 may be accepted. This means that the

discrepancy between observed and predicted correlations is reasonably acceptable. The last statistic produced was the NFI, which was found to be 0.890 for the model, just beneath the 0.90 threshold considered ideal (Bentler & Bonett, 1980) for a very good fit.

4.2.6 Path Coefficients

The structural model results yielded certain key constructs with meaningful influence on Pro-Environmental Purchase Behaviour. Among the predictors, it was especially Online Reviews (β = 0.293, p = 0.000) and Perceived Economic Benefit (β = 0.266, p = 0.000) that proved to be the most influential. This underscores the relevance of digital word-of-mouth communication, coupled with the value attached by consumers in the form of perceived economic benefit, as motivators for sustainable consumption. Self-Image (β = 0.212, p = 0.000) and Behavioural Intention (β = 0.150, p = 0.002), on the other hand, showed statistically significant and positive relationships within the model, thus demonstrating that internal drives and intent matter in driving eco-conscious purchase behaviour.

Another variable, Environmental Concern, also exerted a slight but noticeable positive major influence (β = 0.122, p = 0.010), implying that individual concerns for the environment shape green consumerism. On the contrary, Social Influence did not demonstrate significance (β = 0.009, p = 0.856), implying that normative pressure or peer influence in this setting may not dominate the dimensions of working on individual pro-environmental purchasing decisions.



The outcome of the structural model can provide support for the majority of hypotheses but with some reservations. *Hypothesis 1* stands supported, as with the increase in Perceived Economic Benefit (PEB), the Behavioural Intention (BI) also increased significantly with a positive coefficient (β = 0.266, p = 0.000). This corroborates the hypothesis that when consumers perceive actual economic value in sustainable products, their intention to buy anything pro-environmentally gets enhanced (Kim & Yun, 2019).

Path coefficients and Total effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (|O/STDEV|)	P values	Result of Hypothesis
Behavioural Intention -> Pro-Environmental Purchase Behaviour	0.150	0.150	0.048	3.107	0.002	H_0 is rejected at the 5% significance level.
Environmental Concern -> Pro-Environmental Purchase Behaviour	0.122	0.123	0.047	2.590	0.010	
Online Reviews -> PRO-ENVIRONMENTAL PURCHASE BEHAVIOUR	0.293	0.293	0.051	5.742	0.000	
Perceived Economic Benefit -> Pro-Environmental Purchase Behaviour	0.266	0.266	0.044	6.080	0.000	
Self-Image -> Pro- Environmental Purchase Behaviour	0.212	0.211	0.038	5.546	0.000	
Social Influence -> Pro- Environmental Purchase Behaviour	0.009	0.009	0.048	0.182	0.856	We fail to reject H_0, indicating insufficient evidence against it.

Hypotheses 2 claims Environmental Concern (EC) has a positive effect on BI, but this remained rejected. EC represents the individuals' cognitive awareness and emotional response toward the environment. Path analysis just showed no significant effect of EC on BI. This observation is in line with Moser (2015) earlier argument that concern by itself does not necessarily translate into behavioural intentions unless there are further motivating or contextual indications.

Hypothesis 3 is supported, with EC's direct and statistically significant effects on Pro-Environmental Purchase Behaviour (PEPB) ($\beta = 0.122$, $p = 0.010$), meaning that individuals with high EC may engage in sustainable consumption in the absence of intention, thereby confirming the value-belief-norm framework advocated by Stern et al. (1999).

Regarding *Hypothesis 4*, a contrary view is put forth. Social Influence (SI) has no significant effect on PEPB ($\beta = 0.009$, $p = 0.856$), which means social pressures or expectations from other people may be less important in shaping green purchasing behaviour in this context. This finding suggests a deviation from previous research (Ajzen, 1991) and could mean that environmental-related decisions in the contemporary world are moving on a more individualistic or value-based approach.

Hypothesis 5 finds strong empirical support, with Self-Image (SIM) having a direct and positive influence on PEPB ($\beta = 0.212$, $p = 0.000$). Hence, it supports the argument that self-concept and identity matters in driving sustainable behaviour. Those who perceive themselves as environmentally responsible will behave to strengthen this perception (Griskevicius et al., 2010).

Hypothesis 6 is very strongly supported. Among all predictors, Online Reviews (OR) yielded the strongest effect on PEPB ($\beta = 0.293$, $p = 0.000$). This emphasizes the fundamental role of digital word-of-mouth and peer references in affecting pro-environmental purchase behaviour, corroborating previous studies (C. M. K. Cheung & Thadani, 2012) on how compelling online information can be.

V. DISCUSSION AND IMPLICATIONS

The present research therefore contributes to an understanding of the psychological and behavioural bases of pro-environmental purchase behaviour, by testing the fit of a conceptual model that incorporates PEB, EC, SI, SIM, OR, and BI. The results reveal that Online Reviews, PEB, SIM, and EC have significant bearing on PEPB and that BI plays an important intermediate role in this relationship. Of these variables, Online Reviews was revealed to exert the greatest influence on PEPB, thereby highlighting how much digital peer influence has become dominant and the credibility that consumers attach to user-generated content in making sustainable choices. In so doing, this highlights how important managing brand narratives and consumer experiences in digital domains is becoming, more so for brands operating in environmentally conscious spaces. PEB had a direct effect on the PEPB, as well as an indirect effect through BI, implying that when green products are seen as economically beneficial, sustainable purchase behaviour is enhanced-once again providing crucial marketing insights on how to position green products not only as ethical but also as economically rewarding.

Conversely, SIM displayed a statistically significant influence on PEPB, strengthening the case that sustainable consumption has become an expression of self-concept and aspirational identity. The managerial implications of this finding are immense: thus, brand communications should appeal to the individual's need for personal alignment and social image by linking sustainability with pride, prestige, and modern lifestyle through communication messages. Contrary to that, the Social Influence failed to significantly predict PEPB, revealing a potential shrinkage in the role of external normative pressure and the increase of self-motivated behaviour in this

field. The insignificance of SI states that with time, green consumerism carries less weight in terms of group conformity and more with respect to individual cognition and values-thus channelling the marketing approach towards personalization and value. EC was a significant predictor of PEPB but not BI, underlining the fact that environmental concern may actually spur action independently of deliberate forethought-intuiting that awareness programs should strategize in moving beyond concern to triggering commitment.

VI. LIMITATIONS AND FUTURE SCOPE

While this study offers useful insights into attitudinal drivers of pro-environmental purchase behaviour, it has certain limitations. Being a cross-sectional survey, it could not track behavioural changes over time or establish causality, suggesting the need for longitudinal studies. The sample was limited to Indian consumers, many of whom are digitally aware, which restricts generalisability to other cultural or less tech-savvy contexts. Self-reported data may also differ from actual behaviour due to social desirability bias; thus, future research could incorporate observed purchase behaviour. Additionally, factors such as perceived control, product availability, and brand trust were not considered, though they may strengthen explanatory models. Finally, given the increasing role of digital reviews and AI-driven recommendations, future work should explore how trust in technology influences sustainable purchase decisions.

VII. CONCLUSION

This study was conducted to analyse the main factors affecting pro-environmental purchase behaviour of Indian consumers in today's digital world. Using structural equation modeling, it was found that green purchasing behaviour is significantly influenced by perceived economic benefit, online reviews, self-image, environmental concern, and behavioural intention. Further, social influence did not have a statistically significant effect, possibly highlighting how personal motivation and internal beliefs may be more relevant for eco-friendly decision-making than external pressure. Furthermore, behavioural intention was found to partially mediate between perceived economic benefits regarding purchase behaviour, while environmental concern did the same, concerning purchase behaviour in the Indian context. These results extend the theorization of green consumerism by way of integrating digital and psychological influences, therefore creating a compass for marketers and policymakers seeking to propagate sustainable choices.

From a general perspective, the study provides vital information on the way contemporary consumers are making decisions for environmental consideration as well as showing that such digital tools and personal values are becoming more important in the development of green consumption patterns. Future research can build on such findings by drawing on diverse populations, conducting real-time behavioural tracking, and approaching to grasp with emergent digital technologies, such as AI-powered references.

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