

Research Article

The Path to Green Mobility: Assessing the Determinants of EV Adoption in Emerging Economies

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Abstract: As we approach the transition to sustainable transportation, electric vehicles (EVs) are considered a critical component of global decarbonization strategies, particularly in emerging economies, which are not only experiencing rapid urbanisation and rising energy demand but are also contributing to environmental degradation. Despite substantial governmental initiatives and technological advancements, EV adoption rates in emerging markets remain comparatively low due to economic, infrastructural, technological, and behavioural barriers(). This study investigates the determinants of consumers' behavioural intention to adopt electric vehicles by integrating the Theory of Planned Behaviour (TPB) and the Technology Acceptance Model (TAM). A total of 456 valid responses were analysed using Structural Equation Modelling (SEM). The proposed framework examined the influence of perceived usefulness, perceived ease of use, attitude, subjective norms, perceived behavioural control, environmental concern, government support, and charging infrastructure on behavioural intention toward EV adoption.

Keywords: Electric Vehicles, Green Mobility, EV Adoption, Emerging Economies, TPB, TAM, Sustainable Transportation, Consumer Behaviour.

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INTRODUCTION FOR NEED OF ELECTRIC VEHICLES (EVs)

The transportation sector is considered one of the largest contributors to global greenhouse gas emissions and environmental degradation, and is responsible for a substantial share of carbon dioxide emissions worldwide at that technological advancement, environmental awareness, and governmental support significantly influence EV adoption behavior (Wang et al., 2016; Zhang et al., 2013).

Research conducted by Davis (1989) established that perceived usefulness and perceived ease of use are fundamental predictors of technology acceptance. Similarly, Ajzen (1991) proposed that attitude, subjective norms, and perceived behavioural control significantly influence behavioural intention. However, empirical integration of TPB and TAM in the context of EV adoption within emerging economies remains relatively underexplored.

The present study addresses this research gap by proposing and empirically testing an integrated TPB–TAM framework incorporating environmental concern, government support, and charging infrastructure as additional determinants influencing EV adoption intention. By focusing on emerging economies like India, the study contributes to sustainable transportation literature and provides empirical evidence relevant for policymakers, manufacturers, and infrastructure developers seeking to accelerate green mobility adoption.

Several studies have shown that positive attitudes toward environmental sustainability and social acceptance significantly influence consumers' intention to adopt electric vehicles (Paul et al., 2016, Wang et al., 2016). In addition, other study on EV adoption suggest that consumers are more likely to adopt EVs if they perceive them as efficient, cost-effective, and easy to operate (Jaiswal & Kant, 2018). Environmental concern represents consumers' awareness and increased awareness

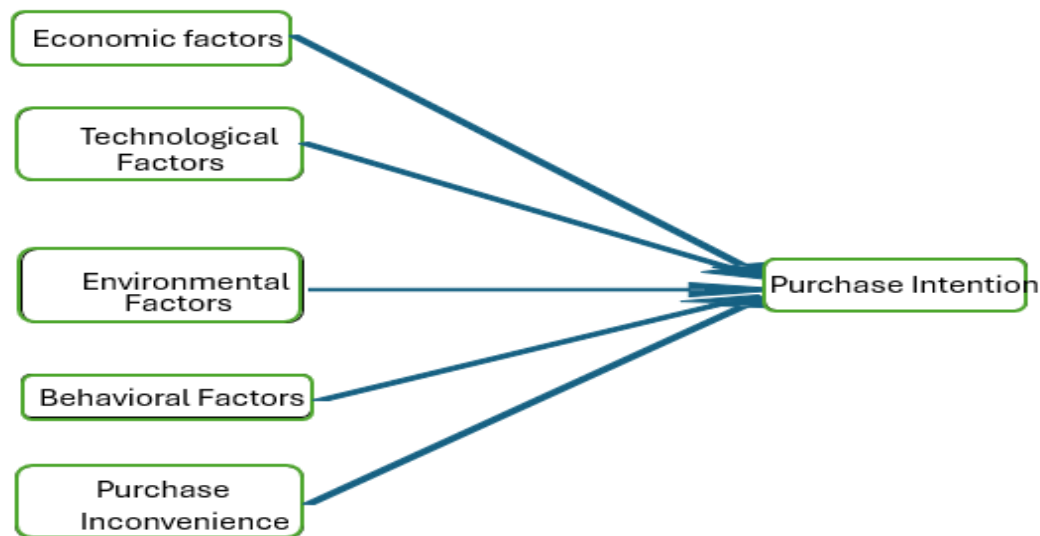
regarding climate change and pollution positively influences consumers' willingness to adopt eco-friendly technologies such as electric vehicles (Yadav & Pathak, 2017, Rezvani et al., 2015).

Government incentives, subsidies, tax benefits, and policy initiatives play a crucial role in encouraging EV adoption that resulted in policy making framework change in many emerging economies (Zhang et al., 2013, (International Energy Agency, 2023).

Although previous studies have explored EV adoption behaviour, limited research has integrated TPB and TAM frameworks in the context of emerging economies. Furthermore, the combined influence of environmental concern, purchase support, and economical factors requires further empirical investigation. Based on that proposed Model is suggested as follow.

PROPOSED MODEL

Figure 1: Proposed Model



Source: Author Compiled

Theoretical Framework and Hypothesis Development

The present study integrates TPB and TAM to explain EV adoption behaviour. The framework includes Purchase Inconvenience, Behavioural Factors, Environmental concern, Technology Factors and Economical Factors to check impact of Customer Satisfaction as mediating variable that leads to Purchase Intention.

Hypotheses Development

- H1: Economical Factors influences Purchase Intention toward EV adoption.
- H2: Technology Factors influences Customer Satisfaction toward EV adoption.
- H3: Environmental concern influences Customer Satisfaction toward EV adoption.
- H4: Behavioural Factors influences Customer Satisfaction toward EV adoption.
- H5: Purchase Inconvenience influences Customer Satisfaction EV adoption.

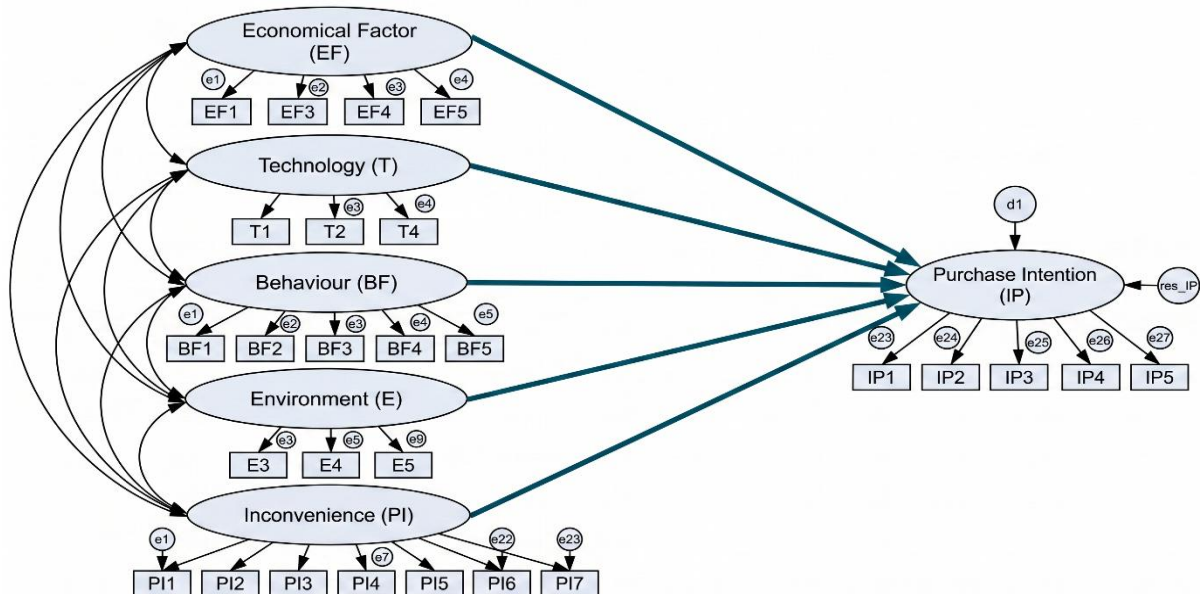
METHODOLOGY AND SAMPLING

To measure each construct, scale from previous literature is adopted. Economic Factors (EF1 to EF5) measured with five statement scale adopted from 10 Hardman (2019) and 11 Axsen et al. (2012). Technology factors (TF1 to TF5) measured using five statement scale adopted from Franke et al. (2013) and Zhou et al. (2019). Environmental Factors (E1 to E5) measured using five statement scale adopted from Sovacool et al. (2021) and Hofmann et al. (2016). Behavioural Factors (BF1 to BF5) measured using five statement scale adopted from Bamberg et al. (2007) and Gefen et al. (2003). Purchase Inconvenience (PI1 to PI7) measured using seven statement scale adopted from Dixon et al. (2010). And dependent variable Intention to Purchase (IP1 to IP5) measured using seven statement scale adopted from Senecal, et al. (2004).

Total 32 statement used for response that required minimum 320 (White, 2021). As per the population-based calculation 384 sample required. However, 500 responses are collected for the research and out of that 456 data point used for analysis after elimination of outliers. IBM SPSS AMOS 28 version used for data analysis and structure equation modeling based on proposed model relationships. Google form is created for questionnaire and 500 responses across India collected for check

MODEL TESTING AND DATA ANALYSIS

Figure 2: Path diagram



Source: IBM SPSS AMOS 28 final path diagram for analysis compiled by Author

There were five iterations performed before finalising path diagram based on reliability (Cronbach's alpha) parameter. After removing E2, EF2, T3, E1 and T5 in each iteration, final reliability achieved as per cutoff. Hence, as per figure 2 final analysis is performed after confirmation of discriminant validity check as per Table 1.

Table 1: Discriminant Validity

Construct	EF	T	BF	E	PI	IP
EF	0.637					
T	0.659	0.806				
BF	0.627	0.527	0.657			
E	0.477	0.521	0.434	0.684		
PI	0.620	0.661	0.629	0.527	0.564	
IP	0.664	0.600	0.662	0.494	0.647	0.683
Note: Bold diagonal values represent the square root of the AVE						

Source: Author compiled from AMOS result output

After a systematic refinement of latent variables, indicator noise removed and achieved higher consistency of the model. The overall model showing significant explanation of variance 59.1 percent for IP ($R^2 = 0.591$; $F = 129.5$; $p < 0.01$). The construct reliability parameters and validity achieved well within limits. Table 2 indicates result of significance for each structural path and hypothesis as per AMOS output. Each null hypothesis is rejected, hence showing significance of alternate hypothesis. Not only that intensity of relationship which can be measured through beta showing highest influence of Behavioural Factors as expected based on TPB model.

Table 2: Hypothesis results

Hypothesis	Path	β	t-value	p-value
H1	EF $\rightarrow$ IP	0.248	5.457	0.000
H2	T $\rightarrow$ IP	0.111	2.449	0.015
H3	BF $\rightarrow$ IP	0.287	6.792	0.000
H4	E $\rightarrow$ IP	0.093	2.493	0.013

H5	PI → IP	0.190	4.095	0.000
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Source: Author compiled from AMOS result output

Even all assumed relationship are empirically evident, Behavioural Factors (BF) showing highest influence on Purchase Intention (IP) ($\beta = 0.287, t = 6.792, p < 0.001$) that is supported by theoretical TPB model. However, as expected Indian consumers are always concern about economic benefit of any product and services Economic Factors (EF) showing second highest impact on IP ($\beta = 0.248, t = 5.457, p < 0.001$). Purchase Inconvenience (PI) stands at third $\beta = 0.190, t = 4.095, p < 0.001$. and other two construct Technology (T) and Environmental Concern (E) are the significant but least influencing among all. These clearly shows that Indian consumer is yet more concern about Economic benefits (Short term) compare to Environment benefits (Long term).

DISCUSSION AND IMPLICATIONS

The present study examined the determinants influencing electric vehicle adoption intention in emerging economies through an integrated TPB–TAM framework. The empirical findings provide significant theoretical and practical insights into consumer behaviour toward sustainable mobility.

The results clearly indicate that BF used from original TPB model is till date considered as one of the most important constructs. However, low beta value of T factor indicates lower importance of technology due to dynamic and fast changing technology consumer adopted its shocks. Hence, low influence on final purchase intention.

Similarly, it is very interesting fact found from current research that E remains lowest-ranked construct that proves no matter how clean the indicator made, “being green” take backseat to economic (EF) or BF. However, there is moderate impact showing purchase inconvenience (PI) to the IP. Hence, it clearly indicating need of governmental intervention through creating convenience and economically feasible reach of EVs to save environment for future generations.

CONCLUSION AND FUTURE RESEARCH DIRECTIONS

The transition toward sustainable mobility has become essential for achieving environmental sustainability and reducing fossil fuel dependency. This empirical study examined the determinants like EF, T, BF, E and PI influencing electric vehicles IP in emerging economies using an integrated TPB–TAM framework. This study found even all five determinants are significantly influencing IP, major focus of consumer remained on BF, EF and PI that indicating need of governmental influence and creation of awareness among EVs users.

This study focused only on purchase intention and limited to Indian consumer, future research can be conducted using cross country comparison and by taking actual purchase in consideration. In fact, similar kind of study can be proposed to government for funded project that my remove limitation of fund and help to cover more bigger size data to understand how government can help to improve use of alternative to oil dependent transportation of country.

REFERENCES

1. Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)
2. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
3. International Energy Agency. (2023). Global EV outlook 2023: Catching up with climate ambitions. <https://www.iea.org/reports/global-ev-outlook-2023>
4. Jaiswal, D., & Kant, R. (2018). Electric vehicle adoption in India: The role of consumer behaviour. *Journal of Cleaner Production*, 204, 122–130. <https://doi.org/10.1016/j.jclepro.2018.08.293>
5. Paul, J., Modi, A., & Patel, J. (2016). Predicting green product consumption using the theory of planned behaviour and reasoned action. *Journal of Retailing and Consumer Services*, 29, 123–134. <https://doi.org/10.1016/j.jretconser.2015.11.006>
6. Rezvani, Z., Jansson, J., & Bodin, J. (2015). Advances in consumer electric vehicle adoption research: A review and research agenda. *Transportation Research Part D: Transport and Environment*, 34, 122–136. <https://doi.org/10.1016/j.trd.2014.10.010>
7. United Nations Environment Programme. (2022). Emissions Gap Report 2022. <https://www.unep.org/resources/emissions-gap-report-2022>
8. 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 behaviour model. *Transportation*, 43(1), 123–143. <https://doi.org/10.1007/s11116-014-9567-9>
9. Yadav, R., & Pathak, G. S. (2017). Determinants of consumers’ green purchase behaviour in a developing nation.

- Journal of Cleaner Production, 135, 732–739. <https://doi.org/10.1016/j.jclepro.2016.06.097>
10. Zhang, X., Wang, K., Hao, Y., Fan, J. L., & Wei, Y. M. (2013). The impact of government policy on preference for NEVs: The evidence from China. *Energy Policy*, 61, 382–393. <https://doi.org/10.1016/j.enpol.2013.06.114>
 11. Ajzen, I. (1991). The theory of planned behaviour. *Organisational Behaviour and Human Decision Processes*, 50(2), 179–211. 10.1016/0749-5978(91)90020-T
 12. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340. <https://doi.org/10.2307/249008>
 13. Fishbein, M., & Ajzen, I. (1975). *Belief, attitude, intention and behaviour: An introduction to theory and research*. Addison-Wesley.
 14. Jaiswal, D., & Kant, R. (2018). Electric vehicle adoption in India: The role of consumer behaviour. *Journal of Cleaner Production*, 204, 122–130. 10.1016/j.jclepro.2018.09.021
 15. Rezvani, Z., Jansson, J., & Bodin, J. (2015). Advances in consumer electric vehicle adoption research: A review and research agenda. *Transportation Research Part D*, 34, 122–136. <https://doi.org/10.1016/j.trd.2014.10.010>
 16. 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 behaviour model. *Transportation*, 43(1), 123–143. 10.1007/s11116-014-9567-9
 17. Yadav, R., & Pathak, G. S. (2017). Determinants of consumers' green purchase behaviour in a developing nation. *Journal of Cleaner Production*, 135, 732–739. 10.1016/j.jclepro.2016.06.120
 18. Zhang, X., Wang, K., Hao, Y., Fan, J. L., & Wei, Y. M. (2013). The impact of government policy on preference for NEVs: The evidence from China. *Energy Policy*, 61, 382–393. <https://doi.org/10.1016/j.enpol.2013.06.062>