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Technology acceptance in electric mobility: A bibliometric review and research agenda

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Abstract

This study maps the intellectual and conceptual development of technology acceptance research within the electric vehicle (EV) domain using a comprehensive bibliometric science-mapping approach. A total of 272 peer-reviewed Scopus-indexed articles published between 2011 and 2025 were systematically analyzed following the PSALSAR protocol and PICOC framing. Performance analysis and network-based mapping techniques including co-word, bibliographic coupling, co-citation, thematic mapping, and thematic evolution were applied using Biblioshiny and VOSviewer. The results demonstrate rapid publication growth, increasing international collaboration, and consolidation of behavioral acceptance frameworks as the dominant analytical foundation of the field. Technology acceptance model, theory of planned behavior, and UTAUT/UTAUT2 emerge as the central theoretical cores structuring EV adoption research, with recent thematic evolution shifting toward behavioral intention, sustainability orientation, and environmental concern. The study reconstructs conceptual architecture, identifies underexplored behavioral domains, and provides an integrated epistemic foundation for cumulative theory development in electric vehicle technology acceptance research.

Introduction

Technology acceptance is a psychological and social process that describes the extent to which individuals are willing to adopt and utilize new technology in their lives. This behavior is influenced by various factors. Acceptance is not only related to technical functions, but also to value perception, conformity to lifestyle, as well as trust in the innovations offered (Venkatesh et al., 2012). The trend of research regarding the acceptance of technology for electric vehicles (EV) has increased significantly in recent years. This is in line with global attention to climate change, energy sustainability, and the transition to low-carbon transportation. Consumers are now faced with new technology options such as electric cars that offer environmental benefits but still bring uncertainty, both in terms of price, supporting infrastructure, and technical performance (Malik et al., 2025). Recent studies show that the decision to accept electric vehicles is not only rational-functional, but also emotional and social, such as comfort of use, image of environmentally friendly technology, and community encouragement (Tilly et al., 2024).

A number of previous studies have tried to explain the factors that affect the acceptance of electric vehicles with quantitative, qualitative, and mixed approaches. Research in developed countries shows that perception of long-term benefits, environmental concerns, and fiscal incentives play an important role in strengthening users' intention to switch to electric vehicles (Lashari et al., 2021). However, in developing countries, issues such as the perception of high prices, limited charging infrastructure, and low technological literacy are the main obstacles to consumer acceptance (Hakam & Jumayla, 2024). In general, although technology acceptance frameworks have been widely applied, the intellectual and conceptual development of acceptance

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research within the EV adoption domain has not yet been comprehensively mapped from a bibliometric perspective.

Previous studies like Singh et al. (2023) conducted bibliometric review of 1.800 Scopus-indexed articles published between 2011 and 2022 and showed that research on EV adoption has increasingly focused on technological, economic, social-influence, organizational, and sustainability. Bryła et al. (2023) provide a systematic literature review of 57 article between 2015 and 2022 and highlighting major barriers such as risk and lack of confidence in performance, safety, and range. Tahir et al. (2025) map 122 studies on EVs and renewable energy using bibliometrics and show research attention that is shifting from technical issues toward sustainable mobility and policy. Prakhar et al. (2025) conducted a systematic literature review using the TCCM framework in 24 scopus articles and showed that the adoption of electric vehicles is influenced by various factors and collectively shapes consumer intentions and behaviors in adopting EVs. Ali et al. (2025) conduct a large-scale bibliometric analysis with 85.246 papers on electric vehicles, identifying 15 thematic clusters and highlighting sustainability, China's dominance, hydrogen research growth, and emerging AI-driven EV infrastructure as key trends in the global EV scholarship.

However, despite the extensive growth of EV studies, there is still no bibliometric review that explicitly show the intellectual and conceptual structure of technology acceptance research within the electric vehicle context. Existing reviews predominantly approach EV adoption from technical, policy, or sustainability perspectives and remain limited to descriptive trend reporting. Consequently, the acceptance literature related to EV has not yet been systematically mapped to reveal the configuration, interaction, and historical evolution of dominant behavioural constructs.

This study adopts a science mapping perspective and conducts a comprehensive bibliometric of technology acceptance research in the EV domain through integrated performance analysis, network analysis, and thematic evolution analysis. The analysis encompasses multiple acceptance frameworks in order to identify dominant conceptual clusters, structural relationships, and evolutionary trajectories. This mapping provides a consolidated epistemic structure of the field and establishes a foundation for theory positioning, gap identification, and cumulative research development in technology acceptance studies on electric vehicle adoption.

The structure of this paper is organized as follows: Section 2 outlines the research methodology in detail, including an in-depth description of the selected database, the implemented search strategy, and the application of the PSALSAR and PICOC frameworks. Section 3 presents the results of the bibliometric analysis, which covers performance evaluation, science mapping, identification of trending research topics, and valuable insights for future research directions. Section 4 offers a discussion on current scholarly developments and outlines recommendations for future studies. Finally, Section 5 provides the conclusion along with a discussion of the study's limitations.

Methods

In line with the latest methodological trends in scientific research (Donthu et al., 2021), this study uses a bibliometric approach to map the intellectual and conceptual development of technology acceptance research within the electric vehicle adoption domain. The bibliometric approach was chosen because of its ability to review and synthesize large amounts of academic data quantitatively, as well as reveal the intellectual structure and dynamics of the development of a field of study (Aria et al., 2020). This process also allows for the mapping of conceptual and collaborative relationships between authors, institutions, and countries in related research domains. To ensure transparency and replication of the process, this study referred to the PSALSAR framework, PSALSAR stands for the six steps in the framework: protocol, search, appraisal (inclusion and exclusion), synthesis, analysis and report (Result and Discussion)(Mengist et al., 2020).

Review protocol

Systematic protocols are used starting from the search stage, selection, to publication analysis. To define the scope of the research, the PICOC approach (Mengist et al., 2020), is used, which helps in formulating the search focus and screening of scientific publications.

Table 1. PICOC Framework to the Determined Objectives

Component	Description
Population.	Scientific literature examining behavioural technology acceptance constructs within the electric vehicle adoption.
Intervention.	Investigation of behavioral factors for technology acceptance related to electric vehicles.
Comparison.	Comparison of cross-country, cross-social context, and temporal trends in technology acceptance research.
Outcome(s).	Identify key themes, research trends, influential authors and institutions, and research gaps.
Background.	Studies in the context of electric vehicles (BEV, EV), eco-friendly transportation, and adoption of new technologies in society.

Source: Modified from Mengist et al. (2020)

The study was designed to answer the following questions:

- RQ1. How has technology acceptance research in electric vehicle studies evolved over time?
- RQ2. What dominant acceptance constructs, thematic clusters, and conceptual relationships structure this literature?
- RQ3. What underexplored the behavioural acceptance construct space indicate research gaps in electric vehicle adoption studies?

Search strategy

The literature search was conducted exclusively through the Scopus database. The search strategy is focused on identifying publications that address the topic of technology acceptance and electric vehicles. Searches are limited to publication until 2025, including peer-reviewed journal articles. Only English-language publications are included. Keywords are formulated using Boolean combinations to ensure broad coverage of previous EV research (Ali et al., 2025; Bryła et al., 2023; V. Singh et al., 2023b; Tahir et al., 2025). The search string operationalizes technology acceptance as a unified multi-theory behavioural construct and their extended models within the electric vehicle context. The final Boolean query is as follows:

("Tech* Accept*" OR "Behav* Intention" OR "User Accept*" OR "Performance Expectancy" OR "Effort Expectancy" OR "Social Influence" OR "Facilitating Conditions" OR "Hedonic Motivation" OR "Price Value" OR "Habit") AND ("Electric Vehicle" OR "Battery Electric Vehicle" OR "Electric Car" OR BEV OR EV)

Applying this search criteria, the Scopus database yielded a total of 1.106 documents published between 2011 and May 1, 2025. Then at the screening stage, it is carried out with Scopus filters for document type, publication status, source type, and language. This refined query yielded 309 documents. The final Boolean search query applied in the Scopus database is presented below:

TITLE-ABS-KEY (("Tech* Accept*" OR "Behav* Intention" OR "User Accept*" OR "Performance Expectancy" OR "Effort Expectancy" OR "Social Influence" OR "Facilitating Conditions" OR "Hedonic Motivation" OR "Price Value" OR "Habit") AND ("Electric Vehicle" OR "Battery Electric Vehicle" OR "Electric Car" OR BEV OR EV)) AND (LIMIT-TO (SUBJAREA, "SOCI") OR LIMIT-TO (SUBJAREA, "BUSI") OR LIMIT-TO (SUBJAREA, "ECON")) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (PUBSTAGE, "final")) AND (LIMIT-TO (SRCTYPE, "j")) AND (LIMIT-TO (LANGUAGE, "English"))

Inclusion and exclusion criteria

In the appraisal phase, the selected documents were screened based on predefined inclusion and exclusion criteria to ensure the relevance and quality of the studies. The criteria applied are presented in Table 2.

A manual screening was then conducted based on titles, abstracts, keywords, and, where necessary, full texts (Lundberg et al., 2006). To reduce bias, journal and author identities were masked during review. Inclusion focused on conceptual relevance, while studies lacking alignment with the core keywords or research scope were excluded. The screening followed established bibliometric protocols consistent with the study objectives (Marzi et al., 2025). The PRISMA flow in Figure 1 summarizes the process, resulting in 272 eligible articles.

Table 2. Inclusion and Exclusion Criteria

Description	Criteria Type
Articles published in peer-reviewed journals	Inclusion
Studies written in English	Inclusion
Studies focusing on Technology Acceptance or *EV*	Inclusion
Studies containing relevant keywords in the title, abstract, or keywords section	Inclusion
Studies in Business, Management and Accounting, Economics, Econometrics and Finance, Social Sciences Subject area	Inclusion
Grey literature (e.g., theses, dissertations, reports, working papers)	Exclusion
Non-English language publications	Exclusion
Studies not directly related to Technology Acceptance or *EV*	Exclusion
Duplicate records across databases	Exclusion

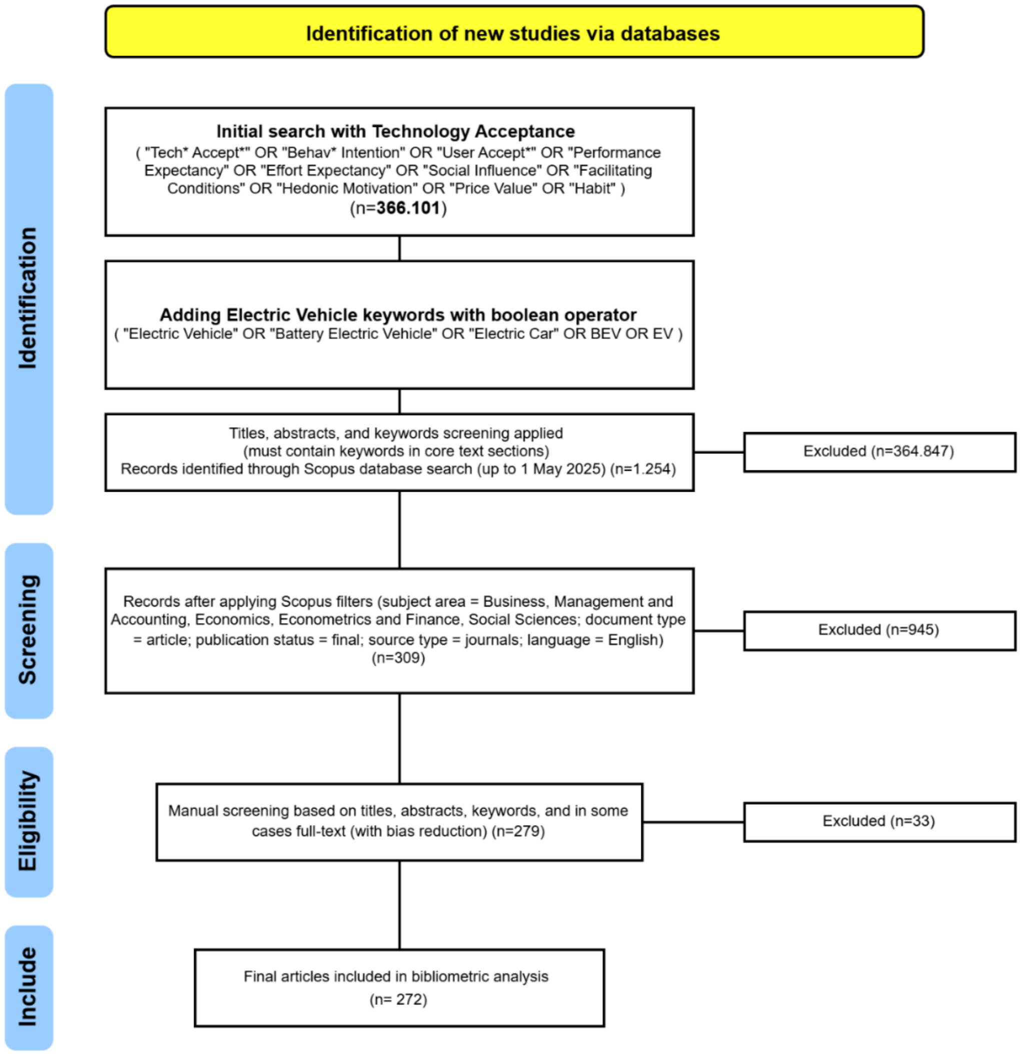

Figure 1. PRISMA Diagram

Synthesis and data extraction

The bibliographic data of the search results is exported in CSV format from Scopus, including titles, abstracts, keywords, authors, and publication sources. Manual selection is carried out to ensure compliance with the inclusion criteria. The filtered dataset is fed into Biblioshiny, the interface of the Bibliometrix package (Aria & Cuccurullo, 2017), to perform quantitative bibliometric analysis and visual mapping.

Analysis

The analysis is carried out in two main categories, performance analysis and scientific mapping. The performance analysis evaluates the contributions of authors, institutions, and journals to the topic of EV technology acceptance. Meanwhile, scientific mapping is carried out through co-citation, bibliographic coupling, and co-word analysis techniques to understand the conceptual structure and direction of the topic's evolution (Aria et al., 2022; Aria & Cuccurullo, 2017; Donthu et al., 2021). Visualizations such as thematic maps and collaboration networks are used to display the findings.

Results

Table 3. Descriptive Summary of Bibliometric Data (2011–2025)

Category	Description	Result
Time Span	Year range of included publications	2011–2025
Total Documents	Number of publications analyzed	272
Sources	Journals, books, and conference proceedings	112
Average Growth Rate	Annual increase in publication output	26.20%
Average Document Age	Mean age of publications	3.32 years
Average Citations/Document	Scholarly impact per publication	36.98
Total References	Number of cited references in dataset	17.091
Author Keywords	Number of unique keywords provided by authors	918
Keywords Plus	System-generated keywords from cited refs	1,348
Total Authors	Number of distinct contributing authors	886
Single-Authored Docs	Documents written by only one author	21
Co-Authors per Document	Degree of collaboration per article	3.58
International Co-authorship Rate	Percentage of cross-country collaboration	30.51%
Document Type	All documents included were peer-reviewed articles	Article (272)

Source: Biblioshiny in R

Bibliometric results of 272 articles for the period 2011–2025 show that scientific interest in the topic of acceptance of electric vehicle technology is growing rapidly, reflected in the average annual publication growth of 26.2% and high academic impact with 36.98 citations per article. This field is also relatively up-to-date with an average article age of 3.32 years. Scientific collaboration is fairly strong with 3.58 authors per article and 30.51% of publications involving cooperation between countries, confirming the global relevance of this issue. In terms of content, there are 918 author keywords and 1,348 Keywords Plus.

Table 4. Average Citations Per Year

Year	MeanTCperArt	N	MeanTCperYear	CitableYears
2011	9	1	0.6	15
2012	200	1	14.29	14
2013	106.5	2	8.19	13
2014	69.29	7	5.77	12
2015	126.8	5	11.53	11
2016	95	3	9.5	10
2017	198.86	7	22.1	9
2018	81.09	11	10.14	8
2019	79.56	18	11.37	7
2020	54.4	20	9.07	6
2021	58.26	23	11.65	5
2022	33.83	35	8.46	4
2023	13.28	47	4.43	3
2024	3.98	66	1.99	2
2025	0.65	26	0.65	1

Source: Biblioshiny in R

Table 4 shows the 2012 and 2017 issues having the highest impact with an average of citations per year of 14.29 and 22.10 respectively, indicating a lasting scientific influence. In contrast, new articles in 2024–2025 have a low citation average (1.99 and 0.65) mainly due to the still very short citation window. This pattern shows the peak of citation performance around 2017, then a gradual decline even though the number of publications increases sharply in 2024, resulting in a divergence between the volume of publications and the impact of citations per article.

Performance analysis of literature

This section presents a performance analysis to answer RQ1, using Biblioshiny in R data that includes the most influential sources of publications, authors, institutions, countries, and documents. Table 5 shows the journals with the greatest impact, Table 6 shows the most prolific and influential authors, Table 7 exposes the institutions with the highest output, Table 8 illustrates geographical distribution and international collaboration, while Table 9 identifies the most cited articles. These findings map the intellectual landscape and patterns of knowledge production in this field of study.

Table 5. Source Performance Overview

Source	h_index	g_index	m_index	TC	NP	PY_start
Sustainability (Switzerland)	20	36	1.818	1326	38	2015
Journal of Cleaner Production	11	16	0.917	889	16	2014
Transportation Research Part A: Policy and Practice	11	18	0.917	1001	18	2014
Transportation Research Part D: Transport and Environment	11	15	0.917	1096	15	2014
Technological Forecasting and Social Change	8	11	0.571	806	11	2012
Transportation Research Part F: Traffic Psychology and Behaviour	8	10	0.889	843	10	2017
Case Studies on Transport Policy	7	8	1.400	241	8	2021
Transportation Research Part C: Emerging Technologies	6	6	0.600	348	6	2016
Research in Transportation Business and Management	5	7	1.250	298	7	2022
Transport Policy	4	8	0.400	226	8	2016
Transportation Research Interdisciplinary Perspectives	4	4	0.800	90	4	2021
International Journal of Sustainable Transportation	3	4	0.500	66	4	2020
Technology in Society	3	3	0.750	45	3	2022
Transportation	3	3	0.500	51	3	2020
Environment, Development and Sustainability	2	5	0.667	30	5	2023

Source: Biblioshiny in R

Table 5 shows that Sustainability (Switzerland) is the most influential source with an h-index of 20, a g-index of 36, 1326 citations, and 38 publications since 2015, indicating a combination of high productivity and impact. A number of Transportation Research journals (Parts A, D, and F) also stood out with an h-index of ≥ 11 and a total citation of 843–1096, followed by cross-disciplinary journals such as Technological Forecasting and Social Change and the Journal of Cleaner Production. Some newer journals show strong citation performance despite their short publication periods.

Table 6 shows that Singh V was the most influential contributor with the highest h-index and g-index (6) as well as 647 citations since 2020, signaling strong productivity and impact in a relatively short period. Wang S, Liao F, and Li J also stand out with a large total citation. Some new authors such as Adu-Gyamfi G, Obuobi B, and Shanmugavel N have a high m-index (0.75), indicating rapid citation growth since 2022.

Table 6. Author Contribution and Impact

Author's	h_index	g_index	m_index	TC	NP	PY_start
Singh V	6	6	1	647	6	2020
Wang S	4	4	0.444	519	4	2017
Adu-Gyamfi G	3	3	0.75	55	3	2022
Axsen J	3	3	0.231	240	3	2013
Li J	3	3	0.375	342	3	2018
Liao F	3	4	0.333	654	4	2017
Liu Y	3	3	0.273	149	3	2015
Mohamed M	3	3	0.3	245	3	2016
Nketiah E	3	3	0.75	55	3	2022
Obuobi B	3	3	0.75	55	3	2022
Shanmugavel N	3	4	0.75	124	4	2022
Asamoah An	2	2	0.5	48	2	2022
Balakrishnan J	2	2	0.5	75	2	2022
Bell K	2	2	0.333	162	2	2020
Curtale R	2	2	0.4	123	2	2021

Source: Biblioshiny in R

Table 7 shows that the University of Science and Technology of China is the most productive institution with 13 articles, followed by Universiti Sains Malaysia (12 articles) and McMaster University and Nanjing University of Science and Technology (10 articles each). The main contributors were dominated by universities in Asia and Europe, confirming that research in this area is growing strongly in the region, particularly China and Malaysia, with significant support from leading European universities.

Table 7. Institutional Productivity

Affiliation	Articles
University of Science and Technology of China	13
Universiti Sains Malaysia	12
Mcmaster University	10
Nanjing University of Science and Technology	10
Delft University of Technology	9
Politecnico di Torino	9
Central South University	8
Eindhoven University of Technology	8
Purdue University	8
University Of Campania Luigi Vanvitelli	8
Rajamangala University of Technology Isan	7
RWTH Aachen University	7
Symbiosis International (Deemed University)	7
Universitas Gadjah Mada	7
Universiti Teknologi Petronas	7

Source: Biblioshiny in R

Table 8 shows that China was the major contributor with 227 publications and the highest total citations (1961), followed by India and Germany. However, Australia, Canada, and Denmark recorded the highest average citations per article (more than 100) despite fewer publications, indicating a high-impact contribution. Some small countries such as Iceland and Hong Kong have an MCP ratio = 1.0, indicating that all publications are carried out through international collaboration. Overall, there is a pattern of high volumes led by China and India, while countries with fewer publications stand out in terms of quality and global collaboration.

Table 8. Geographical Distribution and International Collaboration

Country	TC	Average Article Citations	N	SCP	MCP	MCP_Ratio
China	1961	35.7	227	42	13	0.236
India	1191	36.1	107	25	8	0.242
Germany	982	51.7	70	15	4	0.211
Netherlands	818	90.9	33	3	6	0.667
USA	560	37.3	65	12	3	0.2
Australia	449	112.2	16	1	3	0.75
Canada	431	107.8	16	2	2	0.5
Denmark	336	112	2	3	0	0
United Kingdom	317	39.6	35	5	3	0.375
Malaysia	267	26.7	48	4	6	0.6
Iceland	200	200	5	0	1	1
Korea	183	45.8	10	3	1	0.25
Hong Kong	114	114	1	0	1	1
Indonesia	114	28.5	20	1	3	0.75
Thailand	109	12.1	25	7	2	0.222

Source: Biblioshiny in R

Table 9. Highly Cited Documents and Citation Metrics

Document	DOI	Year	LC	GC	LC/GC Ratio (%)	NLC	NGC
(Liao et al., 2017)	10.1080/01441647.2016.1230794	2017	24	531	4.52	2.47	2.67
(Wu et al., 2019)	10.1016/j.trf.2018.09.029	2019	28	333	8.41	9.69	4.19
(S. Wang et al., 2018)	10.1016/j.tra.2018.08.014	2018	40	309	12.94	5.87	3.81
(Degirmenci & Breitner, 2017)	10.1016/j.trd.2017.01.001	2017	30	309	9.71	3.09	1.55
(Sang & Bekhet, 2015)	10.1016/j.jclepro.2014.12.045	2015	8	273	2.93	1.48	2.15
(V. Singh et al., 2020)	10.1016/j.trd.2020.102436	2020	0	268	0	0	4.93
(Shafiei et al., 2012)	10.1016/j.techfore.2012.05.011	2012	5	200	2.5	1	1
(Shi et al., 2017)	10.1016/j.jclepro.2017.01.108	2017	2	193	1.04	0.21	0.97
(Schmalfuß et al., 2017)	10.1016/j.trf.2017.01.004	2017	0	187	0	0	0.94
(Axsen et al., 2013)	10.1016/j.ecolecon.2013.08.009	2013	12	186	6.45	2	1.75
(Kim et al., 2014)	10.1016/j.tra.2014.08.016	2014	8	181	4.42	2.55	2.61
(Tu & Yang, 2019)	10.3390/su11143863	2019	0	174	0	0	2.19
(Featherman et al., 2021)	10.1016/j.techfore.2021.120847	2021	2	171	1.17	0.84	2.94
(Mohamed et al., 2016)	10.1016/j.tranpol.2016.07.006	2016	10	159	6.29	2	1.67
(Jaiswal et al., 2021)	10.1016/j.techfore.2021.121089	2021	3	149	2.01	1.25	2.56
(Khurana et al., 2020)	10.1177/0972262919875548	2020	12	148	8.11	11.43	2.72
(Jain et al., 2022)	10.1016/j.rtbm.2021.100730	2022	0	143	0	0	4.23
(Rezvani et al., 2018)	10.1002/bse.2074	2018	10	141	7.09	1.47	1.74
(Moons & De Pelsmacker, 2015)	10.3390/su7056212	2015	13	136	9.56	2.41	1.07
(Dixon & Bell, 2020)	10.1016/j.etran.2020.100059	2020	1	127	0.79	0.95	2.33
(Will & Schuller, 2016)	10.1016/j.trc.2016.07.006	2016	5	126	3.97	1	1.33
(Sovacool, 2017)	10.1016/j.erss.2017.02.014	2017	12	121	9.92	1.24	0.61
(Herrenkind et al., 2019)	10.1016/j.trd.2019.08.003	2019	8	117	6.84	2.77	1.47
(Lai et al., 2015)	10.3390/su70912564	2015	4	114	3.51	0.74	0.9
(Keszey, 2020)	10.1016/j.trc.2020.102732	2020	0	110	0	0	2.02

Source: Biblioshiny in R

Table 9 shows highly cited documents, namely Liao et al. (2017) with 531 GC and 24 LC. Followed by Wu et al. (2019) with 333 GC and 28 LC, and Wang et al. (2018) with 309 GC and the highest LC, which is 40. Degirmenci and Breitner (2017) are also strong with 309 GC and 30 LC. Meanwhile, Sang and Bekhet (2015) recorded 273 GCs and 8 LCs, and Singh et al. (2020) had 268 GCs but no LCs. In general, Wang et al. (2018) were most dominant in terms of local relevance (LC/GC = 12.94%), while Liao et al. (2017) led in terms of global impact.

Science mapping analysis

To gain a comprehensive understanding of the intellectual structure and knowledge development in the field of technology acceptance for electric vehicles, a series of bibliometric analyses was conducted using two primary tools: VOSviewer and Biblioshiny in R. The analyses covered three key approaches, co-occurrence, bibliographic coupling, and co-citation with each visualized and summarized in the following tables and figures. The minimum occurrence and citation thresholds were applied as structural filtering criteria to isolate the core intellectual network and suppress peripheral noise in accordance with established science mapping principles for power-law distributed bibliometric networks (Donthu et al., 2021; van Eck & Waltman, 2010).

Figure 2 and Table 10 present the results of the co-occurrence analysis of author keywords, generated using VOSviewer. Out of 918 total keywords identified, only 37 met the threshold of a minimum of five occurrences, highlighting the most frequently co-mentioned themes across the literature.

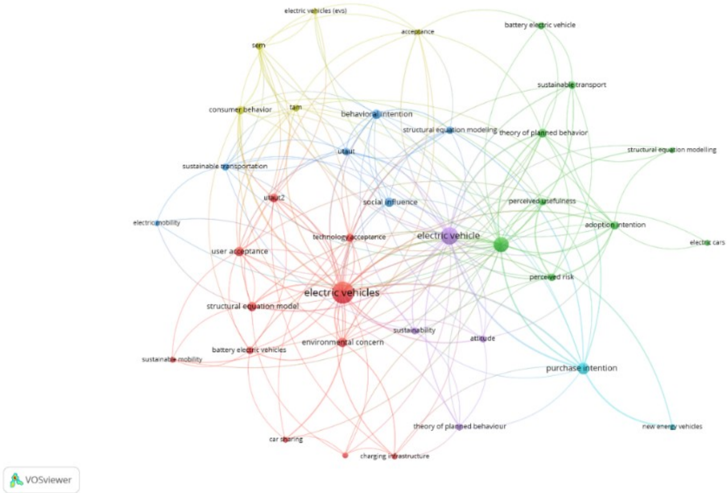

Figure 2. Co-Occurrences Analysis of Authors Keywords
Source: VOSviewer

Table 10. Map File Co-Occurrences Analysis of Authors Keywords

Label	Links	Total Link Strength	Occurrences	Avg. Citations	Avg. Norm. Citations
electric vehicles	26	64	62	50.53	0.91
electric vehicle	25	48	39	47.10	1.00
technology acceptance model	26	46	30	38.50	1.06
theory of planned behavior	12	18	10	37.50	1.68
utaut2	12	19	10	20.90	1.87
technology acceptance	12	15	9	34.22	2.11
environmental concern	11	18	12	67.17	2.85
perceived risk	10	16	8	98.88	2.29
adoption intention	13	19	9	63.67	1.99
consumer behavior	12	18	9	42.56	1.94
battery electric vehicles	9	11	8	53.38	2.60
structural equation modeling	9	13	8	87.25	1.58
attitude	8	10	6	70.00	1.18
sustainable transport	7	9	8	16.63	1.49
willingness to pay	6	6	5	45.80	1.46

Source: VOSviewer

Figure 3 and Table 11 illustrate the bibliographic coupling of documents, where documents sharing common references are grouped based on their citation relationships. Among 272 total documents analyzed, 123 met the minimum citation threshold of 15, indicating their central role in shaping the discourse within this research area.

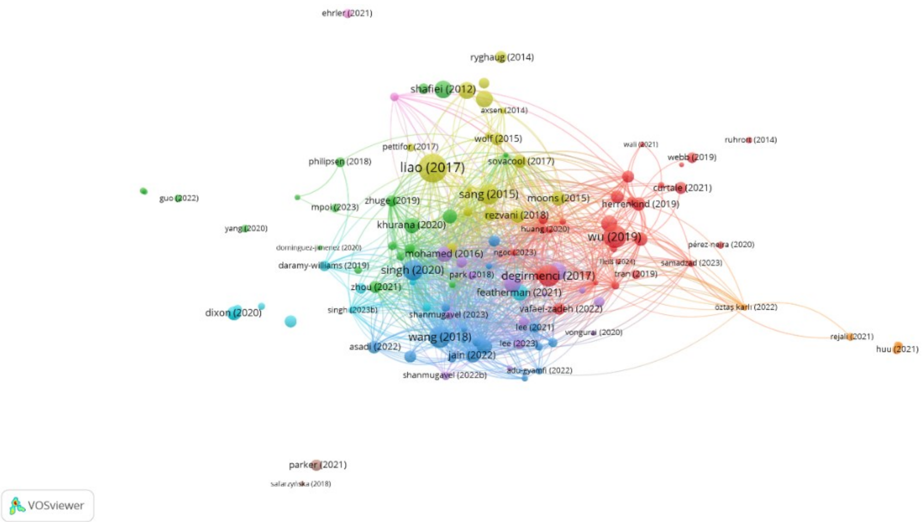

Figure 3. Bibliography Coupling of Documents
Source: VOSviewer

Table 11. Map File Bibliography Coupling of Documents

Label	Links	Total Link Strength	Citations	Norm. Citations	Year
jain (2022)	84	433	143	4.2272	2022
higueras-castillo (2024)	75	243	21	5.27	2024
nguyen-phuoc (2024)	80	366	15	3.7643	2024
fleiß (2024)	62	83	16	4.0152	2024
xiao (2022)	75	151	59	1.7441	2022
ngoc (2023)	89	329	26	1.9583	2023
feys (2020)	48	90	34	0.625	2020
featherman (2021)	85	266	171	2.9351	2021
manca (2020)	71	128	27	0.4963	2020
roemer (2022)	83	285	22	0.6503	2022
abbasi (2021)	94	422	58	0.9955	2021
chada (2023)	74	158	15	1.1298	2023
samadzad (2023)	80	223	36	2.7115	2023
shanmugavel (2023)	90	407	52	3.9167	2023
singh (2023a)	76	285	44	3.3141	2023

Source: VOSviewer

Figure 4 and Table 12 display the results of the co-citation analysis of references, which maps the references most frequently cited together in the dataset. From over 16,000 cited references, 146 met the minimum threshold of five citations, providing insight into the most influential theoretical and methodological foundations of EV technology acceptance studies.

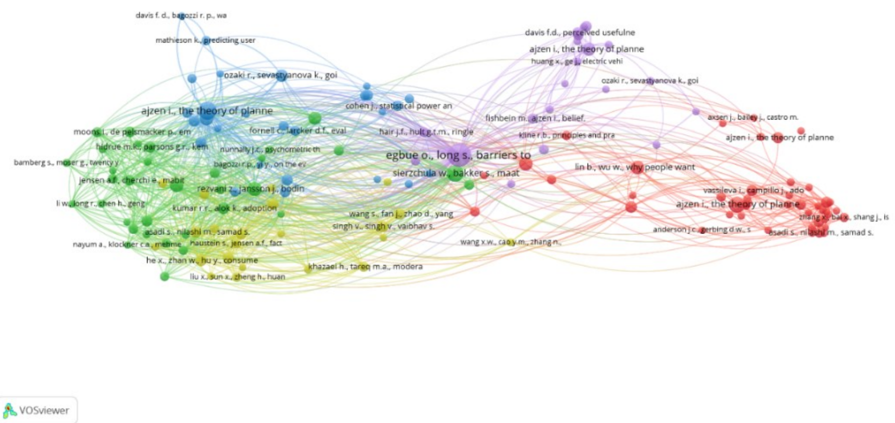

Figure 4. Co-citation Analysis of Reference
Source: VOSviewer

Table 12. Map File Co-Citaions Analysis of Reference

Authors	Links	Total Link Strength	Citations
Egbue & Long (2012) – Barriers to EV adoption	129	359	46
Ajzen (1991) – Theory of Planned Behavior	88	242	27
Degirmenci & Breitner (2017) – Green vs. Price & Range in EV adoption	73	152	10
Liao et al. (2017) – Consumer preferences: literature review	70	134	10
He & Zhan (2018) – Moral norm & EV adoption (NAT theory)	74	121	8
Han et al. (2017) – Functional & non-functional values	79	142	11
Kim et al. (2018) – Perceived value & gov. support	80	127	12
Kumar & Alok (2020) – Literature review & sustainability	76	150	12
Jensen et al. (2013) – Before & after EV experience	64	113	9
Li et al. (2017) – Review of factors influencing BEV adoption	50	87	6
Franke & Krems (2013) – Range preferences	43	78	8
Helveston et al. (2015) – Subsidies & preferences in US-China	52	77	6
Graham-Rowe et al. (2012) – Qualitative responses on EV driving	61	104	8
Davis. (1989) – Perceived usefulness, TAM (MISQ)	21	41	9
Davis et al. (1989) – TAM model comparison (Management Science)	16	24	6

Source: VOSviewer

In addition, Figure 5 and

Table **13**, developed using Biblioshiny in R, present the thematic map that classifies research themes based on their centrality and density, offering a strategic overview of conceptual positioning in the field. Finally,

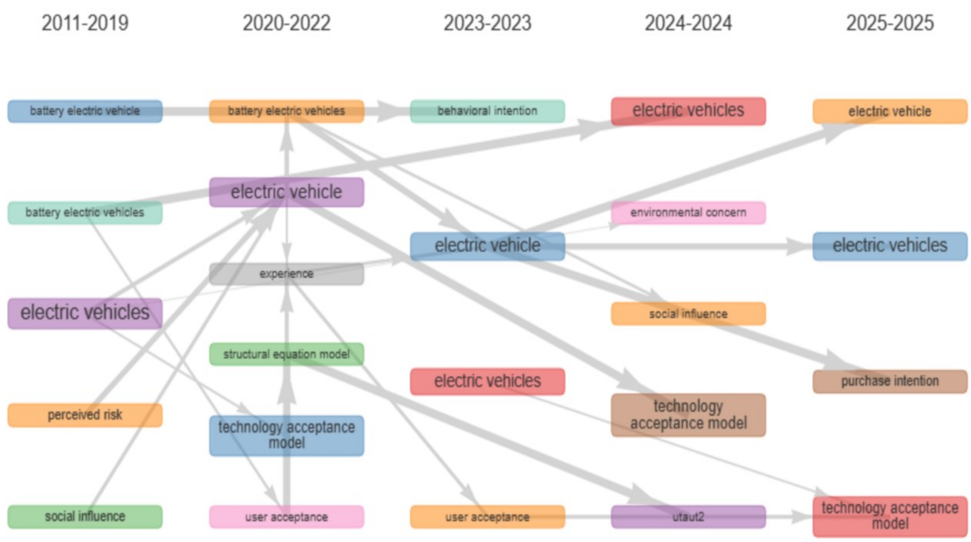

Figure **6** and Table 14 show the thematic evolution of the literature, illustrating how the focus of research has shifted over time, from early emphasis on technology and perceived risk to more recent attention on behavioral models, sustainability, and the integration of advanced acceptance frameworks.

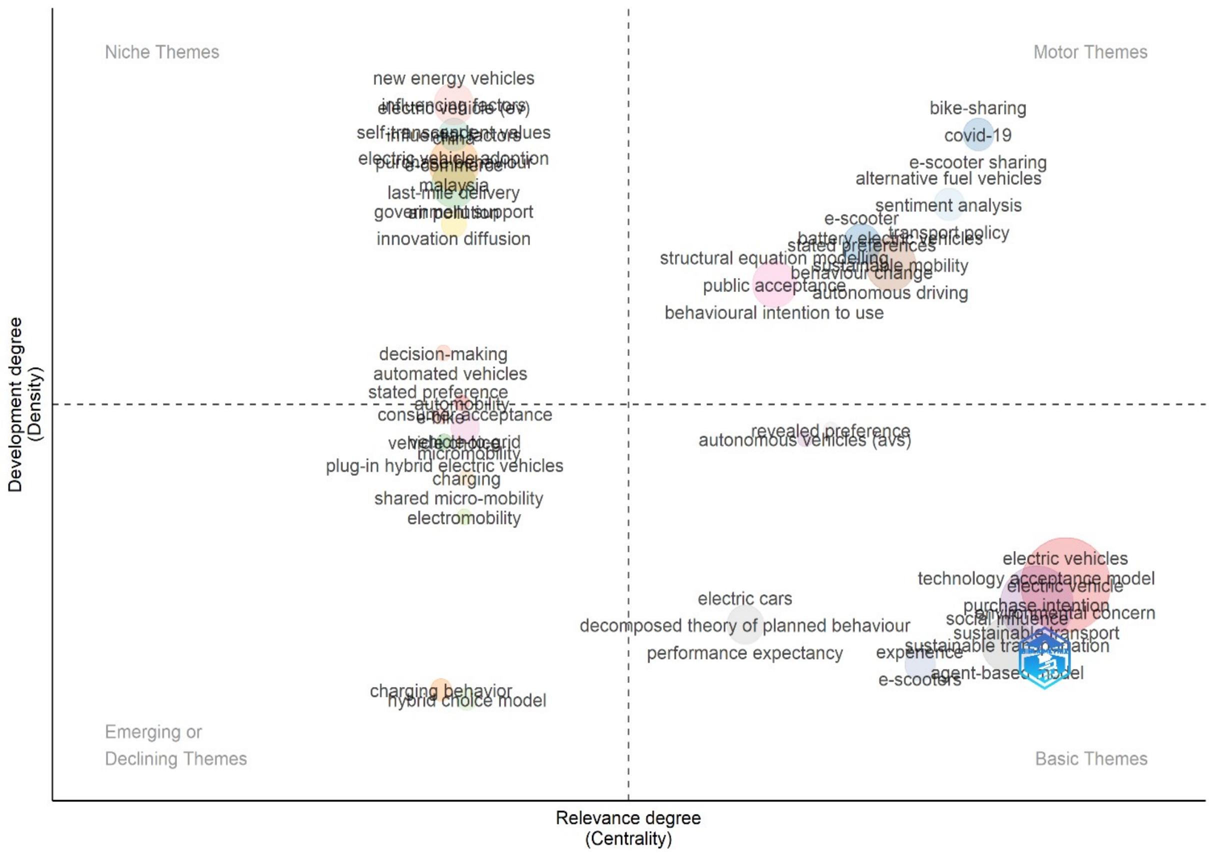

Figure 5. Thematic Map
Source: Biblioshiny in R

Table 13. Top 20 Thematic Map

Rank	Term	Cluster	Cluster Label	Occurrences	Betweenness Centrality	Closeness Centrality	PageRank Centrality
1	Electric vehicles	1	electric vehicles	62	5969.338	0.002020	0.054908
2	Electric vehicle	1	electric vehicles	39	4434.966	0.001969	0.039494
3	Technology acceptance model	4	technology acceptance model	30	3562.171	0.002000	0.031355
4	Purchase intention	4	technology acceptance model	17	1248.951	0.001686	0.019279
5	Environmental concern	1	electric vehicles	12	575.557	0.001730	0.011232
6	Social influence	8	social influence	12	1678.137	0.001842	0.012093
7	Behavioral intention	1	electric vehicles	11	2026.225	0.001953	0.013770
8	Structural equation model	1	electric vehicles	11	1006.052	0.001745	0.013029
9	User acceptance	1	electric vehicles	11	1515.863	0.001832	0.012246
10	Theory of planned behavior	1	electric vehicles	10	973.594	0.001815	0.010977
11	Utaut2	1	electric vehicles	10	620.920	0.001701	0.011818
12	Adoption intention	1	electric vehicles	9	791.717	0.001773	0.010849
13	Consumer behavior	1	electric vehicles	9	549.490	0.001842	0.011341
14	Technology acceptance	1	electric vehicles	9	1919.313	0.001845	0.012463
15	Perceived risk	1	electric vehicles	8	401.049	0.001715	0.009948

16	Structural equation modeling	1	electric vehicles	8	802.514	0.001733	0.010297
17	Utaut	1	electric vehicles	8	623.890	0.001789	0.011083
18	Sustainable transport	4	technology acceptance model	8	523.852	0.001637	0.007912
19	Battery electric vehicles	6	battery electric vehicles	8	641.263	0.001656	0.008509
20	Perceived usefulness	1	electric vehicles	7	452.433	0.001842	0.009646

Source: Biblioshiny in R

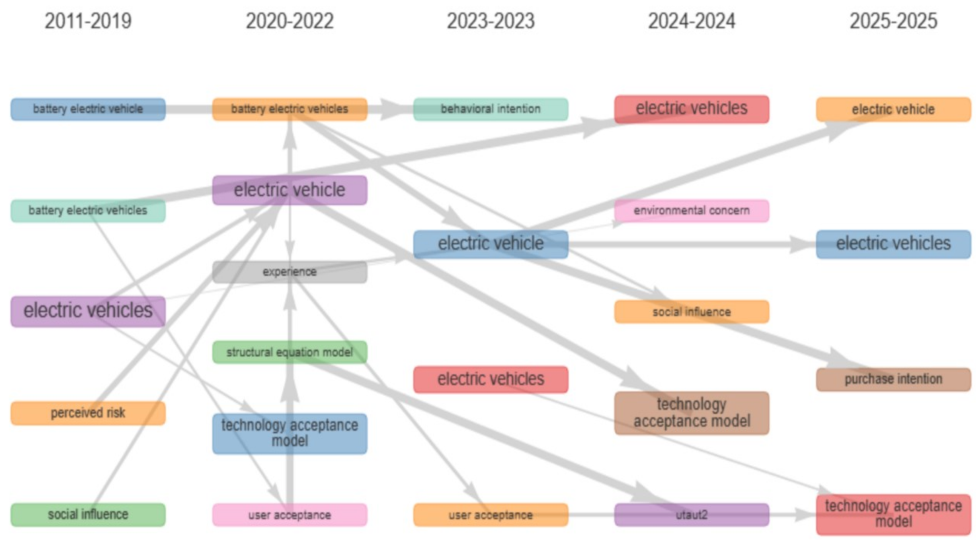

Figure 6. Thematic Evolution of Literature
Source: Biblioshiny in R

Table 14. Thematic Evolution

Period	Key Themes	Notes
2011–2019	Battery Electric Vehicles, EVs, Perceived Risk, Social Influence	Early focus on technology and perceived barriers
2020–2022	TAM, Structural Equation Model, User Acceptance, Environmental Concern	Shift to behavioral models and evaluation methods
2023	Behavioral Intention, TPB, Purchase Intention	Transition to user behavior and decision-making
2024	Sustainability, UTAUT2, Consumer Behavior	Emphasis on long-term value and environmental impact
2025	TAM, Purchase Intention, Environmental Concern	Consolidation of behavior and environmental themes

Source: Biblioshiny in R

Discussion

This study's thematic evolution and clustering analysis reveal a clear trajectory in research surrounding battery electric vehicles (BEVs). Current research trends, as observed in the 2023–2025 time frame, emphasize behavioral models, particularly the technology acceptance and its extensions alongside growing interest in purchase intention and sustainability. These dominant themes reflect a maturing body of literature focused on understanding consumer acceptance and environmental alignment of BEV adoption. However, the emergence of newer, less explored themes, such as hybrid choice models, social and cultural dimensions, and the economic framing of sustainability and highlights valuable opportunities for future research. These future directions offer the potential to deepen insights into BEV adoption by integrating psychological, sociocultural, and economic perspectives beyond the boundaries of existing models.

Research trends

Based on the clusters and keywords that appeared in the most recent time span (2023–2025), the most dominant themes today include:

Acceptance model and its variants

From 2020 to 2025, behavioral models such as the technology acceptance model (TAM), the theory of planned behavior (TPB), and the unified theory of acceptance and use of technology (UTAUT/UTAUT2) have become foundational in understanding the adoption of electric vehicle (EV) technology. The integration of these models reflects an academic effort to capture the complex psychological dimensions of user acceptance, including perceived ease of use, usefulness, social norms, and performance expectations. The consistent appearance of keywords like "technology acceptance model," "user acceptance," and "theory of planned behavior" demonstrates these models' continued relevance and predictive strength in explaining consumer intention and usage of battery electric vehicles (BEVs). Moreover, the rising interest in UTAUT2 in recent years suggests a shift toward more comprehensive behavioral frameworks (Duangekanong, 2023; Han et al., 2025; Selvi & Önem, 2025; X. Zhang & Chang, 2023), including variables such as social influence, facilitating conditions, and hedonic motivation. The evolution of these models provides room for cross-cultural applications and international comparisons, as EV adoption is heavily shaped by local policy, infrastructure readiness, and societal norms (Tyagi & Vishwakarma, 2022). Moving forward, a key challenge lies in enriching these models by incorporating contextual factors such as perceived risk and environmental values, dimensions that are still underrepresented in classical acceptance models but critical to the EV context.

Behavioral intention & purchase intention

The growing emphasis on behavioral intention and purchase intention highlights a pivotal shift in EV research from understanding general acceptance to analyzing actual consumer decision-making processes. Recent studies aim to identify the key drivers behind consumers' willingness or reluctance to purchase BEVs (Ahmad et al., 2024; Augurio et al., 2025; Rong et al., 2025). This focus has become increasingly important as EVs move beyond early adopters and into the mainstream market, where decisions are influenced by more practical and emotional considerations. The prominence of these keywords and their close linkage suggests that behavioral outcomes are now central to discussions about adoption. This trend also enhances the strategic and policy relevance of EV research, as a deeper understanding of consumer intentions can guide marketing interventions, policy incentives, and product development. Techniques such as structural equation modeling (SEM) are frequently employed to explore the relationships between variables like trust, perceived risk, and perceived value. Future research should consider incorporating longitudinal approaches to track intention over time and expand on socioeconomic and affective factors, which are often underexplored in conventional purchase intention studies. Additionally, there is a need to bridge the intention-behavior gap by examining actual buying behaviors post-intention.

Electric vehicles & sustainability

Research on electric vehicles is increasingly situated within the broader context of sustainability and environmental responsibility. Recent studies do not merely focus on the technological efficiency of BEVs, but also examine how their adoption contributes to broader sustainability goals, such as carbon emissions reduction, improved air quality, and the shift toward cleaner energy systems (Çallı & Çallı, 2024; Orji, 2024; N. Wang et al., 2024). The keywords reflect the growing integration between technological innovation and ecological consciousness. This signals a move toward understanding EV adoption as not only a personal choice but also a societal response to environmental challenges. Despite this, the sustainability lens in EV research still requires deeper exploration, particularly within consumer behavior frameworks. One of the key challenges is distinguishing between attitudinal support and actual behavioral commitment toward sustainability. While many consumers express environmental concern, this does not always relations into the purchase of eco-friendly vehicles (Gulzari et al., 2022; Yau et al., 2024). As such, future research would benefit from interdisciplinary approaches that incorporate value-belief-norm theory, assessments of long-term perceived benefits, and analyses of the social cost-benefit trade-offs of BEVs. These dimensions could enrich our understanding of how sustainability values truly influence consumer choices.

Future research

Strengthening social and cultural dimensions

While technological and psychological factors have dominated BEV adoption studies, the role of social and cultural dimensions remains underrepresented. Social influence, though present in the thematic map, has not been a central research theme, despite its high relevance in collectivist societies where family expectations, peer norms, and community values heavily shape purchasing behavior (Karami et al., 2025; Pandita et al., 2024; Samadzad et al., 2023). As BEV adoption moves into broader market segments, it is increasingly important to consider how local norms, religious values, or communal identity impact decision-making processes. Future research could explore these dynamics through cross-cultural comparative studies, ethnographic approaches, or mixed-methods frameworks that integrate qualitative insight with quantitative modeling (Higueras-Castillo et al., 2024; Joghee et al., 2024; Kumar et al., 2025). Examining the influence of family opinion, community role models, and peer networks could provide a more holistic view of behavioral intention, particularly in urban versus rural settings. Additionally, understanding how cultural narratives around sustainability, modernity, or status influence BEV perception could inform marketing strategies tailored to specific cultural contexts. Such studies would be crucial in creating inclusive policies that address both individual preferences and societal influences.

Hybrid choice models & willingness to pay

A promising but still emerging avenue in BEV research is the integration of hybrid choice models with willingness-to-pay assessments. While most existing studies rely on survey-based data and traditional structural models, hybrid choice models offers a more nuanced method by capturing both observed choices and unobservable latent variables, such as attitudes, perceptions, and risk tolerance (Pan & Liao, 2025). This approach is especially relevant in evaluating trade-offs between environmental benefits, cost savings, and vehicle performance, where consumer decisions are often not fully rational or linear. Future research should explore the integration of hybrid choice models with willingness-to-pay frameworks to simulate market responses under different pricing, subsidy, and policy scenarios (Meyer et al., 2025; Yu et al., 2023). For instance, combining stated preference data with revealed preferences can yield more accurate predictions of BEV adoption. This methodological advancement could also be used to segment consumers by their sensitivity to price or environmental incentives, which would be invaluable for policymakers and manufacturers designing tiered incentive programs or targeted marketing. The inclusion of willingness-to-pay also enables exploration of equity issues in access to sustainable mobility.

Sustainability integration with economic behavior

Although sustainability has gained traction in the literature, it often remains conceptually isolated from economic behavior models (Lee et al., 2023; Rong et al., 2025; S. Singh et al., 2025). There is a significant opportunity to bridge environmental motivations with economic rationality, particularly in understanding how fiscal incentives, interact with environmental concern to influence BEV purchase intention (Selvi & Önem, 2025; F. Zhang et al., 2025). This integration is critical for constructing a realistic profile of consumer behavior, especially in price-sensitive markets where consumers weigh long-term savings against high upfront costs. Future studies could build predictive models that include both environmental values and economic variables such as total cost of ownership, perceived value for money, and willingness to pay for green technology. These models could also explore how consumers value intangible environmental benefits versus tangible cost savings, especially across different income groups. Further, by embedding sustainability within economic choice modeling, researchers can evaluate the effectiveness of government interventions, forecast adoption rates under various policy conditions, and contribute to the development of cost-effective strategies for accelerating sustainable transport.

Transition from acceptance model to more comprehensive models

The acceptance model has provided a valuable foundation for BEV research, but its explanatory power is increasingly challenged by the complexity of real-world adoption dynamics. Acceptance model focus on perceived usefulness and ease of use, while important, may overlook critical variables like trust in new technology, perceived risk, emotional factors, and sociocultural context. As BEV markets expand and diversify, there is a growing need to move beyond acceptance model and adopt more comprehensive, hybrid models that reflect the multifaceted nature of consumer decision-making. Future research should experiment with integrating acceptance model with constructs from risk theory, trust frameworks, and cultural psychology. This could include building extended models that combine acceptance model with perceived risk and trust in infrastructure or government policy, or models that factor in cultural dimensions like uncertainty avoidance or collectivism. Additionally, advancements in AI and big data analytics open the door for AI-driven consumer profiling, allowing for dynamic, real-time modeling of user preferences based on behavioral data. Such innovation would significantly enhance the precision and practical utility of BEV adoption models, making them more responsive to market trends and user diversity.

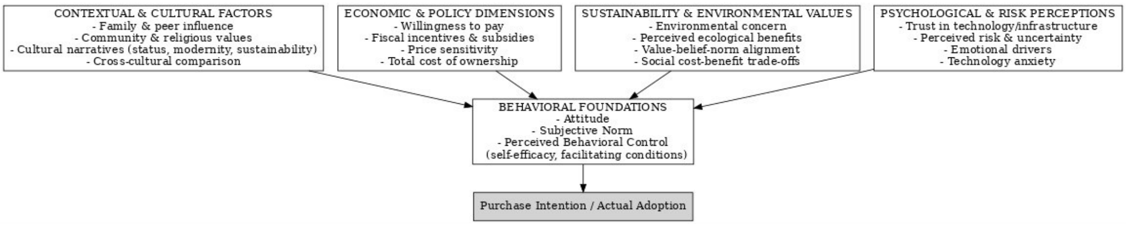

Figure 7. Future Research Representation Framework for Electric Vehicle Adoption
Source: Author Elaboration

While acceptance models highlight utility-based drivers such as performance, ease of use, and price value, they often overlook the role of risk perception and psychological coping mechanisms. Incorporating constructs from protection motivation theory (PMT) offers a more complete explanation of adoption behavior. Through threat appraisal (perceived vulnerability and severity of environmental risks) and coping appraisal (response efficacy, response cost, and self-efficacy), PMT captures how individuals balance the urgency of threats with their ability to respond. For BEVs, this means assessing both the seriousness of environmental problems and the confidence that adopting BEVs is an effective and feasible solution. By integrating PMT with acceptance models, future research can move beyond rational utility considerations to account for protective motivations. This hybrid approach provides a richer understanding of purchase intention, reflecting not only economic trade-offs but also psychological reassurance, thereby offering stronger insights for policymakers and industry stakeholders.

Conclusion

This study provides the first consolidated bibliometric mapping of technology acceptance research in the electric vehicle domain. The bibliometric evidence demonstrates that the literature has transitioned from early technology- and risk-oriented investigations toward consolidated behavioral acceptance frameworks centered on TAM, TPB, and UTAUT/UTAUT2. The intellectual structure is increasingly shaped by behavioral intention, environmental concern, and sustainability integration, indicating a maturing theoretical phase. Thematic evolution confirms that contemporary EV adoption research is no longer dominated by technical feasibility but by psychological, social, and value-based acceptance mechanisms. By reconstructing the conceptual architecture and evolutionary trajectory of this field, this study establishes a cumulative knowledge structure that supports systematic theory positioning, structured gap identification, and the development of integrated behavioral adoption models for future EV research.

Limitations

The analysis is limited to Scopus-indexed English-language journal articles, which may exclude regionally indexed or non-English contributions. Bibliometric mapping captures structural and thematic relationships but does not evaluate causal validity or empirical effect sizes of acceptance constructs. Keyword-based retrieval may omit studies addressing acceptance implicitly without explicit construct labeling. Finally, citation-based network dominance may overrepresent older highly cited publications while underrepresenting emerging theoretical contributions. In the future, these findings need to be complemented by a qualitative systematic review or cross-database meta-analysis so that the scope of the literature is more comprehensive and the theoretical meaning is sharper.

References

Ahmad, K., Huat, K. Y., Ismail, F., & Wei, C. S. (2024). Moving towards sustainable purchase behaviour: determinants of consumers' acceptance of electric vehicles in Malaysia. *Paper Asia*, *40*(4b), 145–150. https://doi.org/10.59953/paperasia.v40i4b.207

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes, 50*(2), 179–211. https://doi.org/10.1016/0749-5978(91)90020-T

Ali, A., Mirzaei, N., Yousefi, H., & Hajinezhad, A. (2025). Comprehensive bibliometric analysis of electric vehicle research: Trends , emerging topics , and sustainability insights. *Energy Strategy Reviews*, *62*: Article e101963. https://doi.org/10.1016/j.esr.2025.101963

Aria, M., & Cuccurullo, C. (2017). Bibliometrix: An R-tool for comprehensive science mapping analysis. *Journal of Informetrics*, *11*(4), 959–975. https://doi.org/10.1016/j.joi.2017.08.007

Aria, M., Cuccurullo, C., D'aniello, L., Misuraca, M., & Spano, M. (2022). Thematic analysis as a new culturomic tool: The social media coverage on COVID-19 pandemic in Italy. *Sustainability*, *14*(6), 3643. https://doi.org/10.3390/su14063643

Aria, M., Misuraca, M., & Spano, M. (2020). Mapping the evolution of social research and data science on 30 years of social indicators research. *Social Indicators Research*, *149*, 803–831. https://doi.org/10.1007/s11205-020-02281-3

Augurio, A., Castaldi, L., Mazzoni, C., & Matarazzo, O. (2025). EV purchase intention in Italy, Germany, France, and Denmark: Comparative analysis after the approval of the 2035 ban. *Journal of Cleaner Production*, *486*: Article e144212. https://doi.org/10.1016/j.jclepro.2024.144212

Axsen, J., Orlebar, C., & Skippon, S. (2013). Social influence and consumer preference formation for pro-environmental technology: The case of a U.K. workplace electric-vehicle study. *Ecological Economics*, *95*, 96–107. https://doi.org/10.1016/j.ecolecon.2013.08.009

Bryła, P., Chatterjee, S., & Ciabiada-Bryła, B. (2023). Consumer adoption of electric vehicles: a systematic literature review. *Energies*, *16*(1), 205. https://doi.org/10.3390/en16010205

Çallı, L., & Çallı, B. A. (2024). Value-centric analysis of user adoption for sustainable urban micro-mobility transportation through shared e-scooter services. *Sustainable Development*, *32*(6), 6408–6433. https://doi.org/10.1002/sd.3032

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

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User acceptance of computer technology: A comparison of two theoretical models. *Management Science, 35*(8), 982–1003. https://doi.org/10.1287/mnsc.35.8.982

Degirmenci, K., & Breitner, M. H. (2017). Consumer purchase intentions for electric vehicles: Is green more important than price and range? *Transportation Research Part D: Transport and Environment*, *51*, 250–260. https://doi.org/10.1016/j.trd.2017.01.001

Dixon, J., & Bell, K. (2020). Electric vehicles: Battery capacity, charger power, access to charging and the impacts on distribution networks. *ETransportation*, *4*, 100059. https://doi.org/10.1016/j.etran.2020.100059

Donthu, N., Kumar, S., Mukherjee, D., Pandey, N., & Lim, W. M. (2021). How to conduct a bibliometric analysis: An overview and guidelines. *Journal of Business Research*, *133*, 285–296. https://doi.org/10.1016/j.jbusres.2021.04.070

Duangekanong, S. (2023). Determining behavioral intention of logistic and distribution firms to use electric vehicles in Thailand. *Journal of Distribution Science*, *21*(5), 31–41. https://doi.org/10.15722/jds.21.05.202305.31

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

Featherman, M., Jia, S. J., Califf, C. B., & Hajli, N. (2021). The impact of new technologies on consumers beliefs: Reducing the perceived risks of electric vehicle adoption. *Technological Forecasting and Social Change*, *169*: Article e120847. https://doi.org/10.1016/j.techfore.2021.120847

Franke, T., & Krems, J. F. (2013). What drives range preferences in electric vehicle users? *Transport Policy, 30*, 56–62. https://doi.org/10.1016/j.tranpol.2013.07.005

Gulzari, A., Wang, Y., & Prybutok, V. (2022). A green experience with eco-friendly cars: A young consumer electric vehicle rental behavioral model. *Journal of Retailing and Consumer Services*, *65*: Article e102877. https://doi.org/10.1016/j.jretconser.2021.102877

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

Hakam, D. F., & Jumayla, S. (2024). Electric vehicle adoption in Indonesia: Lesson learned from developed and developing countries. *Sustainable Futures*, *8*: Article e100348. https://doi.org/10.1016/j.sftr.2024.100348

Han, W., Shum, C., & Wan, G. (2025). Charging during the stay: the effects of EV chargers' availability and pricing on consumer perceived utilitarian value and behavioral intentions. *Journal of Travel and Tourism Marketing*, *42*(1), 85–99. https://doi.org/10.1080/10548408.2024.2427171

Han, L., Wang, S., Zhao, D., & Li, J. (2017). The intention to adopt electric vehicles: Driven by functional and non-functional values. *Transportation Research Part A: Policy and Practice, 103*, 185–197. https://doi.org/10.1016/j.tra.2017.05.033

He, X., & Zhan, W. (2018). How to activate moral norm to adopt electric vehicles in China? An empirical study based on extended norm activation theory. *Journal of Cleaner Production, 172*, 3546–3556. https://doi.org/10.1016/j.jclepro.2017.05.088

Helveston, J. P., Liu, Y., Feit, E. M., Fuchs, E., Klampfl, E., & Michalek, J. J. (2015). Will subsidies drive electric vehicle adoption? Measuring consumer preferences in the U.S. and China. *Transportation Research Part A: Policy and Practice,* *73*, 96–112. https://doi.org/10.1016/j.tra.2015.01.002

Herrenkind, B., Brendel, A. B., Nastjuk, I., Greve, M., & Kolbe, L. M. (2019). Investigating end-user acceptance of autonomous electric buses to accelerate diffusion. *Transportation Research*

Part D: Transport and Environment, *74*, 255–276. https://doi.org/10.1016/j.trd.2019.08.003

Higueras-Castillo, E., Singh, V., Singh, V., & Liébana-Cabanillas, F. (2024). Factors affecting adoption intention of electric vehicle: a cross-cultural study. *Environment, Development and Sustainability*, *26*, 29293–29329. https://doi.org/10.1007/s10668-023-03865-y

Jain, N. K., Bhaskar, K., & Jain, S. (2022). What drives adoption intention of electric vehicles in India? An integrated UTAUT model with environmental concerns, perceived risk and government support. *Research in Transportation Business & Management*, *42*: Article e100730. https://doi.org/10.1016/j.rtbm.2021.100730

Jaiswal, D., Kaushal, V., Kant, R., & Kumar Singh, P. (2021). Consumer adoption intention for electric vehicles: Insights and evidence from Indian sustainable transportation. *Technological Forecasting and Social Change*, *173*: Article e121089. https://doi.org/10.1016/j.techfore.2021.121089

Jensen, A. F., Cherchi, E., & Mabit, S. L. (2013). On the stability of preferences and attitudes before and after experiencing an electric vehicle. *Transportation Research Part D: Transport and Environment, 25*, 24–32. https://doi.org/10.1016/j.trd.2013.07.006

Joghee, S., Kabiraj, S., Ramakrishnan, S., & Alzoubi, H. M. (2024). Consumer decision-making study regarding the SUV market in the Indian context. *Indian Journal of Marketing*, *54*(11), 8–25. https://doi.org/10.17010/ijom/2024/v54/i11/174628

Karami, A., Allahviranloo, M., & Samadzad, M. (2025). The impacts of personality traits on the acceptance of shared e-scooters: Evidence from Tehran. *Cities*, *158*: Article e105633. https://doi.org/10.1016/j.cities.2024.105633

Keszey, T. (2020). Behavioural intention to use autonomous vehicles: Systematic review and empirical extension. *Transportation Research Part C: Emerging Technologies*, *119*: Article e102732. https://doi.org/10.1016/j.trc.2020.102732

Khurana, A., Kumar, V. V. R., & Sidhpuria, M. (2020). A Study on the Adoption of Electric Vehicles in India: The Mediating Role of Attitude. *Vision: The Journal of Business Perspective*, *24*(1), 23–34. https://doi.org/10.1177/0972262919875548

Kim, M.-K., Oh, J., Park, J.-H., & Joo, C. (2018). Perceived value and adoption intention for electric vehicles in Korea: Moderating effects of environmental traits and government supports. *Energy, 159*, 799–809. https://doi.org/10.1016/j.energy.2018.06.064

Kim, J., Rasouli, S., & Timmermans, H. (2014). Expanding scope of hybrid choice models allowing for mixture of social influences and latent attitudes: Application to intended purchase of electric cars. *Transportation Research Part A: Policy and Practice*, *69*, 71–85. https://doi.org/10.1016/j.tra.2014.08.016

Kumar, R. R., & Alok, K. (2020). Adoption of electric vehicle: A literature review and prospects for sustainability. *Journal of Cleaner Production, 253*, Article 119911. https://doi.org/10.1016/j.jclepro.2019.119911

Kumar, V., Kaushik, A. K., Noravesh, F., Sindhwani, R., & Mathiyazhagan, K. (2025). Green drives: Understanding how environmental propensity, range and technological anxiety shape electric vehicle adoption intentions. *Technological Forecasting and Social Change*, *210*: Article e123859. https://doi.org/10.1016/j.techfore.2024.123859

Lai, I. K. W., Liu, Y., Sun, X., Zhang, H., & Xu, W. (2015). Factors influencing the behavioural intention towards full electric vehicles: An empirical study in Macau. *Sustainability*, *7*(9), 12564–12585. https://doi.org/10.3390/su70912564

Lashari, Z. A., Ko, J., & Jang, J. (2021). Consumers' intention to purchase electric vehicles: influences of user attitude and perception. *Sustainability*, *13*(12), 6778. https://doi.org/10.3390/su13126778

Lee, S. S., Kim, Y., & Roh, T. (2023). Pro-environmental behavior on electric vehicle use intention: Integrating value-belief-norm theory and theory of planned behavior. *Journal of Cleaner Production*, *418*: Article e138211. https://doi.org/10.1016/j.jclepro.2023.138211

Li, W., Long, R., Chen, H., & Geng, J. (2017). A review of factors influencing consumer intentions to adopt battery electric vehicles. *Renewable and Sustainable Energy Reviews, 78*, 318–328. https://doi.org/10.1016/j.rser.2017.04.076

Liao, F., Molin, E., & van Wee, B. (2017). Consumer preferences for electric vehicles: a literature review. *Transport Reviews*, *37*(3), 252–275. https://doi.org/10.1080/01441647.2016.1230794

Lundberg, J., Fransson, A., Brommels, M., Skår, J., & Lundkvist, I. (2006). Is it better or just the same? Article identification strategies impact bibliometric assessments. *Scientometrics*, *66*, 183–197. https://doi.org/10.1007/s11192-006-0013-4

Malik, M. A. I., Kalam, M. A., Ikram, A., Zeeshan, S., & Raza Zahidi, S. Q. (2025). Energy transition towards electric vehicle technology: Recent advancements. *Energy Reports*, *13*, 2958–2996. https://doi.org/https://doi.org/10.1016/j.egyr.2025.02.029

Marzi, G., Balzano, M., Caputo, A., & Pellegrini, M. M. (2025). Guidelines for Bibliometric-systematic literature reviews: 10 steps to combine analysis, synthesis and theory development. *International Journal of Management Reviews*, *27*(1), 81–103. https://doi.org/10.1111/ijmr.12381

Mengist, W., Soromessa, T., & Legese, G. (2020). Method for conducting systematic literature review and meta-analysis for environmental science research. *MethodsX, 7*: Article e100777. https://doi.org/10.1016/j.mex.2019.100777

Meyer, D., Kraus, L., Husemann, L., & Proff, H. (2025). Willingness of employees to accept bidirectional charging at the workplace. *Transportation Research Part D: Transport and Environment*, *139*: Article e104517. https://doi.org/10.1016/j.trd.2024.104517

Mohamed, M., Higgins, C., Ferguson, M., & Kanaroglou, P. (2016). Identifying and characterizing potential electric vehicle adopters in Canada: A two-stage modelling approach. *Transport Policy*, *52*, 100–112. https://doi.org/10.1016/j.tranpol.2016.07.006

Moons, I., & De Pelsmacker, P. (2015). An extended decomposed theory of planned behaviour to predict the usage intention of the electric car: A multi-group comparison. *Sustainability*, *7*(5), 6212–6245. https://doi.org/10.3390/su7056212

Orji, I. J. (2024). Adopting electric bus for improving efficiency in the local public transport sector: Analysis of facilitating conditions and their nonlinear relationships. *Transportation Research Part A: Policy and Practice*, *180*: Article e103967. https://doi.org/10.1016/j.tra.2024.103967

Pan, X., & Liao, F. (2025). On effects of behavioral intention on travel preferences for electric car-sharing services: Empirical insights from the Netherlands. *Transportation Research Part F: Traffic Psychology and Behaviour*, *109*, 113–124. https://doi.org/10.1016/j.trf.2024.12.003

Pandita, D., Bhatt, V., Kumar, V. V. R., Fatma, A., & Vapiwala, F. (2024). Electrifying the future: analysing the determinants of electric vehicle adoption. *International Journal of Energy Sector Management*, *18*(6), 1767–1786. https://doi.org/10.1108/IJESM-06-2023-0004

Prakhar, P., Jabeen, F., Jaiswal, R., Gupta, S., Piccardi, P., & Jose, S. (2025). Mapping the electric vehicle adoption scholarship for sustainability: an integrated theoretical framework and future research directions. *Management of Environmental Quality*, *36*(1), 249–276. https://doi.org/10.1108/MEQ-04-2024-0153

Rezvani, Z., Jansson, J., & Bengtsson, M. (2018). Consumer motivations for sustainable consumption: The interaction of gain, normative and hedonic motivations on electric vehicle adoption. *Business Strategy and the Environment*, *27*(8), 1272–1283.

https://doi.org/10.1002/bse.2074

Rong, L., Zhao, M., & Xu, M. (2025). How do self-transcendent values and institutional forces influence consumer intentions to purchase new energy vehicles under subsidy withdrawal? Evidence from China. *Environment, Development and Sustainability*, *27*(3), 7843–7870. https://doi.org/10.1007/s10668-023-04224-7

Samadzad, M., Nosratzadeh, H., Karami, H., & Karami, A. (2023). What are the factors affecting the adoption and use of electric scooter sharing systems from the end user's perspective? *Transport Policy*, *136*, 70–82. https://doi.org/10.1016/j.tranpol.2023.03.006

Sang, Y.-N., & Bekhet, H. A. (2015). Modelling electric vehicle usage intentions: An empirical study in Malaysia. *Journal of Cleaner Production*, *92*, 75–83. https://doi.org/10.1016/j.jclepro.2014.12.045

Schmalfuß, F., Mühl, K., & Krems, J. F. (2017). Direct experience with battery electric vehicles (BEVs) matters when evaluating vehicle attributes, attitude and purchase intention. *Transportation Research Part F: Traffic Psychology and Behaviour*, *46*, 47–69. https://doi.org/10.1016/j.trf.2017.01.004

Selvi, M. S., & Önem, Ş. (2025). Impact of variables in the UTAUT 2 model on the intention to use a fully electric car. *Sustainability*, *17*(7), 3214. https://doi.org/10.3390/su17073214

Shafiei, E., Thorkelsson, H., Ásgeirsson, E. I., Davidsdottir, B., Raberto, M., & Stefansson, H. (2012). An agent-based modeling approach to predict the evolution of market share of electric vehicles: A case study from Iceland. *Technological Forecasting and Social Change*, *79*(9), 1638–1653. https://doi.org/10.1016/j.techfore.2012.05.011

Shi, H., Wang, S., & Zhao, D. (2017). Exploring urban resident's vehicular PM2.5 reduction behavior intention: An application of the extended theory of planned behavior. *Journal of Cleaner Production*, *147*, 603–613. https://doi.org/10.1016/j.jclepro.2017.01.108

Singh, S., Arora, M., Kaur, R., Rani, A., & Kathuria, P. (2025). Unpacking role of environmental awareness in the triad relationship of religious commitment, environmental values and intentions in Indian textile industry. *Social Responsibility Journal*, *21*(4), 776–792. https://doi.org/10.1108/SRJ-07-2024-0447

Singh, V., Singh, H., Dhiman, B., Kumar, N., & Singh, T. (2023a). Analyzing bibliometric and thematic patterns in the transition to sustainable transportation: Uncovering the influences on electric vehicle adoption. *Research in Transportation Business and Management*, *50*: Article e101033. https://doi.org/10.1016/j.rtbm.2023.101033

Singh, V., Singh, H., Dhiman, B., Kumar, N., & Singh, T. (2023b). Research in transportation business & management analyzing bibliometric and thematic patterns in the transition to sustainable transportation: Uncovering the influences on electric vehicle adoption. *Research in Transportation Business & Management*, *50*: Article e101033. https://doi.org/10.1016/j.rtbm.2023.101033

Singh, V., Singh, V., & Vaibhav, S. (2020). A review and simple meta-analysis of factors influencing adoption of electric vehicles. *Transportation Research Part D: Transport and Environment*, *86*: Article e102436. https://doi.org/10.1016/j.trd.2020.102436

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

Tahir, H., Erteza, H., El-ferik, S., Tayyab, M., & Khosravi, N. (2025). Electric vehicles and renewable energy for sustainable mobility : Insights from bibliometric , topic modeling , and societal impact analyses. *Energy Strategy Reviews, 61*: Article e101827. https://doi.org/10.1016/j.esr.2025.101827

Tilly, N., Yigitcanlar, T., Degirmenci, K., & Paz, A. (2024). How sustainable is electric vehicle adoption? Insights from a PRISMA review. *Sustainable Cities and Society*, *117*: Article e105950. https://doi.org/10.1016/j.scs.2024.105950

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

Tyagi, R., & Vishwakarma, S. (2022). Technology aspect of Electric Vehicles Initiative's social sustainability. *Technological Sustainability*, *1*(1), 24–41. https://doi.org/10.1108/TECHS-09-2021-0005

van Eck, N. J., & Waltman, L. (2010). Software survey: VOSviewer, a computer program for bibliometric mapping. *Scientometrics*, *84*, 523–538. https://doi.org/10.1007/s11192-009-0146-3

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://papers.ssrn.com/sol3/papers.cfm?abstract_id=2002388

Wang, N., Zhang, J., & Yu, X. (2024). Sustainability-driven technology road mapping: a strategic framework for sustainable development with moderation of ease of use. *International Journal of Information Systems and Change Management*, *14*(4), 406–422. https://doi.org/10.1504/IJISCM.2024.144422

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

Will, C., & Schuller, A. (2016). Understanding user acceptance factors of electric vehicle smart charging. *Transportation Research Part C: Emerging Technologies*, *71*, 198–214. https://doi.org/10.1016/j.trc.2016.07.006

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

Yau, A. T. L., Ismail, H., & Kamaruddin, N. I. (2024). Eco-friendly drive: extending the theory of planned behaviours towards electric vehicle adoption. *Paper Asia*, *40*(6b), 135–145. https://doi.org/10.59953/paperasia.v40i6b.265

Yu, T., Zhang, Y., Teoh, A. P., Wang, A., & Wang, C. (2023). Factors influencing university students' behavioral intention to use electric car-sharing services in Guangzhou, China. *Sage Open*, *13*(4). https://doi.org/10.1177/21582440231210551

Zhang, F., Lv, H., Kuai, C., & Feng, T. (2025). The battery-swapping revolution: Exploring user preferences in electric micro-mobility sector. *Transportation Research Part A: Policy and Practice*, *194*: Article e104416. https://doi.org/10.1016/j.tra.2025.104416

Zhang, X., & Chang, M. (2023). Applying the extended technology acceptance model to explore Taiwan's Generation Z's behavioral intentions toward using electric motorcycles. *Sustainability*, *15*(4), 3787. https://doi.org/10.3390/su15043787