USER ACCEPTANCE OF PUBLIC CHARGING INFRASTRUCTURE – A LITERATURE REVIEW

Vanessa Sucietto, PhD Student
Burgas Free University

Abstract: *This research paper investigates factors influencing user acceptance of public charging infrastructure to support the widespread adoption of electric mobility. Based on a systematic literature review, key factors are identified. These factors include the availability, accessibility and reliability of charging stations as well as user-centered factors such as convenience features, user-friendliness and digital services. Moreover, the standardization and interoperability of systems as well as the integration of renewable energies and a supportive legal framework are crucial to increase user acceptance. The results show that an integrated approach for the development of public charging infrastructure is required to increase user acceptance and accelerate the transition to electric mobility.*

Keywords: *Electric Mobility, Public Charging Infrastructure, User Acceptance, Influencing Factors, Integrated Approach*

1. Introduction

Electric mobility plays a crucial role in achieving the European Union's (EU) climate targets which aim to decarbonise the economy by 2050 (cf. European Council, 2025). These ambitious climate goals have resulted in stricter legal requirements and comprehensive national programs designed to successfully transition from traditional combustion engines to electric mobility (cf. Pape, 2021, p. 1). The changed framework conditions in the transportation sector as well as the emergence of financially attractive new markets have led to increased international competition. This has contributed to falling vehicle prices and a growing variety of models which has increased sales of electric vehicles (cf. Tschiesner et al., 2024). For electric mobility to be widely accepted in society and to achieve long-term success, public charging infrastructure plays a crucial role. In addition to charging at home, electric vehicle users need the ability to charge regardless of their location to travel longer distances. This is particularly relevant in urban areas, where range anxiety is more pronounced and private charging options are often limited (cf. Hildebrand/Kummer, 2024, p. 7).

In recent years, governments and private companies worldwide have made significant investments in expanding public charging infrastructure. Despite these efforts, there are still significant challenges and uncertainties regarding user acceptance of public charging infrastructure (cf. Bhat et al., 2024, pp. 177-178).

Further analysis of the factors influencing user acceptance of public charging infrastructure can increase acceptance and use of the infrastructure, thus contributing to the success of electric mobility.

This study aims to systematically analyse the current state of research on factors influencing user acceptance of public charging infrastructure and to identify future research needs.

2. Theoretical framework

Public charging infrastructure, as a key driver in electric mobility adoption, refers to charging stations that are publicly accessible and typically owned by the public sector (cf. Reinke, 2014, pp. 38-39). Various charging technologies are used which differ in terms of power supply, charging capacity and application. These technologies can be categorized into three main types: alternating current (AC), direct current (DC) and high-power charging (HPC).

- **AC Charging:** AC charging stations typically deliver 3.7 to 22 kilowatts (kW) and are suitable for longer parking durations.
- **DC Charging:** DC charging, with up to 100 kW, is considered fast charging.
- **HPC Charging:** HPC charging, with up to 350 kW, is considered ultra-fast charging. Fast and ultra-fast charging allow for significantly shorter charging times and are therefore primarily used for quick charging at important nodes (cf. e-mobil BW GmbH, 2021, pp. 15-17).

As successful adoption of public charging infrastructure depends on both technical aspects and user acceptance, the Technology Acceptance Model (TAM) is useful for understanding user behaviour. According to the TAM, the acceptance and actual use of a technology depends significantly on two central perceptions: perceived usefulness and perceived ease of use. Both constructs influence the behavioural intention which in turn determines the actual usage behaviour (cf. Davis, 1989, p. 333). A further development of the model shows that several external factors influence perceived usefulness and perceived ease of use (cf. Venkatesh/Bala, 2008, pp. 276-279).

The specific manifestation of these influencing factors is crucial for the acceptance and adoption of an innovation.

3. Methodological Approach

This study adopted a literature review as a data collection method to identify the factors influencing user acceptance of public charging infrastructure. According to Hunziker/ Blankenagel (2021, pp. 238-240), the review followed a multi-step approach:

1) Selection of initial sample

Suitable selection criteria for literature include the publisher, year of publication, language, database and topic. The following selection criteria were used for this research purpose:

- **Journals:** Energy Policy; Energy Reports; Transport Policy; Transportation Research; Sustainable Transportation; Case Studies on Transport Policy; Transportation Research Procedia; Procedia Manufacturing; Sustainable Cities and Society; International Journal of Economics; International Journal of Economics, Business, and Entrepreneurship; International Journal of Business Ecosystem & Strategy
- **Other literature:** International Energy Agency Publications, McKinsey Center for Future Mobility, PaperASIA, position papers, working papers
- **Publication years:** 2015-2025
- **Languages:** English, German
- **Databases:** Science Direct, Google Scholar, Research Gate, SpringerLink, EconStor, Wiley Online Library, IEEE Xplore, JSTOR

2) Topic: Factors influencing user acceptance of public charging infrastructure

Definition of search strings

To ensure a broad but thematically focused search spectrum, a combination of general terms relating to electric mobility and specific terms relating to charging infrastructure and user acceptance was used, including:

Electric mobility, public charging infrastructure, charging network, user acceptance, user satisfaction, consumer preferences, success factors, influencing factors, barriers to EV adoption, diffusion of electric mobility, electric vehicle adoption

3) Screening and analysis

Once the framework had been set and the data had been collected, any unusable data was excluded. A screening of the included data was then conducted. This revealed interactions between different data. The highlighted data was then analysed inductively by forming categories and assigning individual parts of the data to them (cf. Mayring, 2010, p. 83).

4. Findings

As part of the literature review, a total of 16 international studies from 2015 to 2025 were analysed to systematically identify factors influencing user acceptance of public charging infrastructure. An overview of these studies is provided in the appendix.

When conducting the literature review in terms of influencing factors, different clusters were formed using the summarizing content analysis (cf. chapter 2). As a result, eleven clusters can be revealed. Table 1 presents an overview of the clusters.

No.	Cluster	Factors influencing user acceptance	Mentions
1	**Availability and accessibility**	• Accessibility • Availability • Charging station locations/ distribution • Density of charging points	19
2	**Additional services and amenities**	• Amenities • Possibility to use Wi-fi • Potential to access food and drink • Possible pastime in the area • Public toilets nearby • Roof above the chaging station • Habit compatibility • Dual use • Connection to public transportation • Real-time information • Transprent	12
3	**Ease of use and convenience**	• Convenience • Simple • Payment ease • User-friendly services • Certain connectors available • Connected cable available	10
4	**Charging speed and duration**	• Charging speed/time • Reservation system	10
5	**Pricing and costs**	• Cost/Pricing • Flexible pricing • Charging in off-peak hours	10

6	**Reliability and safety**	• Reliability • Safety • Charging station lightning	7
7	**Energy and environment**	• Renewable energy sources • Collaboration with energy providers	6
8	**Technology and compatibility**	• Charging station types • Interoperability framework • Load management systems	4
9	**Physical and cognitive location factors**	• Walking distance • Visibility • Educaton campaigns	4
10	**Political and economic conditions**	• Economic incentives • Policy incentives • Regulatory framework	3
11	**Other factors**	• Necessity	1

Table 1: Identified clusters of influencing factors on user acceptance

The following sections will provide detailed explanations of each cluster to give a better understanding of the factors influencing user acceptance of public charging infrastructure.

1) Availability and accessibility

The availability and accessibility of charging stations is one of the most frequently cited influencing factors regarding user acceptance. A high density of charging points and their widespread distribution, particularly in urban areas and along major transport routes, increases the likelihood significantly that user will find a station available at any time (cf. Globisch et al., 2018, p. 19; Globisch et al., 2019, pp. 59–61; Anuar et al., 2023, pp. 92-93). Studies from Spain and Norway emphasize the importance of strategic allocation and easily accessible locations (cf. Otero-Romero et al., 2025, pp. 21-23; Schulz/Rode, 2022, p. 18). In further European studies, barrier-free accessibility and interoperability are also cited as important factors (cf. Tomás/Marqués, 2023, p. 566).

2) Additional services and amenities

Additional services and amenities in the environment around the charging station are increasingly recognised as a factor influencing acceptance. The availability of toilets, wi-fi, roofs above the charging station, seating areas as well as shopping and catering facilities increases the attractiveness of charging locations (cf. NOW GmbH, 2020, pp. 38-39). Moreover, having transparency in terms of real-time information on charging station availability and charging status is a helpful addition that increases planning security (cf. Otero-Romero et al., 2025, p. 23). Furthermore, it has been shown that people prefer charging locations that fit their habits, such as places they visit regularly. In some cases, direct access from the charging station to public transport is also advantageous (cf. Anderson et al., 2017, p. 9; Philipsen et al., 2015, p. 2797).

3) Ease of use and convenience

Another decisive factor for many users is a simple and intuitive charging process. Studies emphasise the importance of simple authentication and payment processes (cf.

NOW GmbH, 2020, p. 7; Illahi et al., 2024, pp. 9-12; Anuar et al., 2023, pp. 92-93; IEA, 2025, p. 111). Moreover, compatible plug standards as well as an integrated cable also contribute to user-friendliness. Overall, user-friendly services are a significant factor in increasing user acceptance of public charging infrastructure. The more convenient the charging experience, the higher the likelihood of use (cf. Tomás/Marqués, 2023, p. 566; NOW GmbH, 2020, pp. 38-39).

4) Charging speed and duration

The duration of the charging process is another key factor when it comes to user acceptance of public charging infrastructure (cf. Globisch et al., 2019, pp. 59-62). Specifically, fast charging reduces the waiting time and increases the willingness to use (cf. Brückmann/Bernauer, 2023, pp. 5, 9; Fischer et al., 2024). Bhat et al. (2024, p. 187) demonstrate that users expect an offer of different charger types with different charging speeds to meet their individual needs. Avoiding long waiting times and optimizing charging times are perceived as crucial factors. In this context, a reservation system could help to reduce waiting times. This would further increase user acceptance by enabling customers to plan their charging sessions more reliably (cf. Brückmann/Bernauer, 2023, p. 9).

5) Pricing and costs

Furthermore, transparent and flexible pricing is one of the most important factors for user acceptance. Many users show a low willingness to pay which requires cheaper tariff models (cf. Letmathe et al., 2025, pp. 154-156; Globisch et al., 2018, p. 19; Brückmann/ Bernauer, 2023, p. 5; Fischer et al., 2024; Anuar et al., 2023, pp. 92-93). Studies propose flexible pricing models, depending on station type and charging capacity (cf. Otero-Romero et al., 2025, p. 23). Moreover, targeted charging during off-peak times can also offer cost advantages (cf. Rochd et al., 2023, p. 232).

6) Reliability and safety

The reliability and safety of the charging infrastructure is another frequently cited acceptance factor. Users expect charging stations to be functional at any time. Error messages and technical defects lead to frustration and a loss of trust (cf. Letmathe et al., 2025, pp. 154-157; IEA, 2025, p. 106; Philipsen et al., 2015, p. 2796). The safety of the location also influences the decision to use it. Users prefer centrally located, well-lighted charging stations. In contrast, isolated and poorly lighted locations negatively impact user acceptance (cf. Philipsen et al., 2015, pp. 2796-2797; NOW GmbH, 2020, pp. 38-39).

7) Energy and environment

Sustainability is increasingly gaining importance in the context of charging. The integration of renewable energy sources into the charging system is perceived as a quality feature. Users want environmentally friendly solutions that emphasise the ecological advantage of electric vehicles (cf. Brückmann/Bernauer, 2023, p. 5; Rochd et al., 2023, p. 232; Bhat et al., 2024, p. 188; Anuar et al., 2023, pp. 92-93). Therefore, studies recommend stronger cooperations with energy providers to strengthen the grid and to ensure the integration of renewable energy sources into the charging system (cf. Otero-Romero et al., 2025, p. 23).

8) Technology and compatibility

Technological factors also play a significant role in the acceptance of public charging infrastructure. The factors that influence acceptance include compatibility of different plug standards, charging performance and load management systems (cf. NOW GmbH, 2020, pp. 38-39; Rochd et al., 2023, p. 232). European studies suggest that an interoperable

system enabling roaming between different provider is particularly user-friendly (cf. Tomás/Marqués, 2023, p. 566).

9) Physical and cognitive location factors

Moreover, the perception of a charging station as an influencing factor in usage behaviour should not be underestimated. Visibility plays a decisive role here (cf. Philipsen et al., 2015, p. 2796). For users who do not have access to a private charging station at home, physical proximity plays a decisive role in selecting a charging station. The closer the station is to home, the higher the probability of use (cf. Letmathe et al., 2025, pp. 155-157). Furthermore, Otero-Romero et al. (2025, p. 24) emphasise that targeted information and education campaigns can enhance user knowledge and build trust in the charging infrastructure. Such measures are intended to reduce information deficits, increase awareness and lower the barrier to use.

10) Political and economic conditions

Political incentives and regulatory frameworks also support the acceptance of charging infrastructure. International literature highlights the importance of economic subsidies, reliable regulations and simplified permitting processes as key enablers. These measures provide a stable framework for the seamless deployment of charging infrastructure. This has a positive effect on the number and availability of charging stations which in turn makes users more likely to use them (cf. Otero-Romero et al., 2025, p. 24).

11) Other factors

Another influencing factor is the subjective perception of the need for public charging infrastructure. Users accept charging infrastructure not only for reasons of comfort or personal preference but also when they perceive it as essential for their own mobility (cf. Philipsen et al., 2015, p. 2797).

5. Discussion

The findings identified show that user acceptance of public charging infrastructure is influenced by a variety of factors. These factors are not only crucial for the individual user experience but also play a crucial role in the successful transformation of the transport sector towards sustainable mobility. The following section provides a detailed discussion of the identified key factors.

1) Basic requirement: Availability, accessibility and reliability

The literature identifies widespread availability and accessibility of charging stations as key prerequisites for acceptance. A high density and strategic placement of charging points, particularly in urban areas and along major transport routes, are essential to address range anxiety and ensure everyday usability. The reliability and safety of charging points are further central aspects. Defective or insecure stations lead to frustration and a loss of trust, having a negative impact on acceptance.

2) User experience: Comfort, additional services and digital solutions

In addition to the basic requirements, additional services and a positive user experience are becoming increasingly important. Convenience offerings such as toilets, wi-fi, roofs, seating areas as well as shopping and food options significantly increase the experience. Real-time information on availability, charging speed and reservation options also improves planning security and reduces uncertainty for users. Furthermore, simple authentication and payment systems as well as transparent pricing models reduce barriers to entry and increase user satisfaction.

3) Standardisation and interoperability

Another key issue is the standardisation of plugs, authentication and payment systems. Cross-provider compatibility is crucial to overcoming market fragmentation and offering a seamless user experience.

4) Sustainability and renewable energy integration

Integrating renewable energies into the charging system is increasingly perceived as a quality feature and contributes to the credibility of sustainable mobility concepts. Users positively evaluate environmentally friendly solutions, particularly in the context of the European zero-emission targets. Therefore, cooperation between charging infrastructure providers and energy suppliers must be further expanded to promote sustainable business models.

5) Regulatory framework and political guidance

In addition to funding research and development, the expansion of the charging network can be accelerated by targeted subsidies, simplified permitting processes and clear regulatory guidelines.

Further research is needed to identify effective measures for increasing user acceptance of public charging infrastructure. It should address the interactions between infrastructure deployment, user behaviour and technological development. This will form the basis for developing recommendations that support the sustainable and user-centered expansion of public charging infrastructure.

6. Conclusion

This review highlights that user acceptance of public charging infrastructure is influenced by an interaction of infrastructural, user-centric and policy related factors. While technical aspects such as availability, reliability and charging speed are crucial, subjective perceptions such as simplicity in use are equally important. To gain widespread acceptance of public charging infrastructure, all relevant players must pursue an integrated strategy to ensure a seamless, user-centered charging experience. Such an integrated approach is essential to enable public charging infrastructure to drive market penetration of electric mobility and help achieve climate goals.

List ob Abbreviations

AC	Alternating current
DC	Direct current
EU	European Union
HPC	High-power charging
IEA	International Energy Agency
kW	Kilowatt
TAM	Technology acceptance model

References:

1. Anderson, J. E., Lehne, M., Hardinghaus, M. (2018). What electric vehicle users want: Real-world preferences for public charging infrastructure. In International Journal of Sustainable Transportation, Vol. 12(5), pp. 341-352. Retrieved from https://doi.org/10.1080/15568318.2017.1372538
2. Anuar, N. K., Harun, H. N., Khir, S. N. M. (2023). The critical success factors for electric vehicle adoption among Malaysian drivers. In PaperASIA, Vol. 39(6b), pp. 89-95. Retrieved from https://doi.org/10.59953/paperasia.v39i6(b).65
3. Bhat, F. A., Tiwari, G. Y., Verma, A. (2024). Preferences for public electric vehicle charging infrastructure locations: A discrete choice analysis. In Transport Policy, Vol. 149, pp. 177-197. Retrieved from https://doi.org/10.1016/j.tranpol.2024.02.004
4. Brückmann, G., Bernauer, T. (2023). An experimental analysis of consumer preferences towards public charging infrastructure. In Transportation Research Part D: Transport and Environment, Vol. 116, Art. 103626. Retrieved from https://doi.org/10.1016/j.trd.2023.103626
5. Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. In MIS Quarterly, Vol. 13(3), pp. 319-340. Retrieved from https://doi.org/10.2307/249008
6. eMobil BW GmbH (Ed.) (2021). Wirtschaftsfaktor Ladeinfrastruktur – Potenziale für Wertschöpfung in Baden-Württemberg. Retrieved from https://www.e-mobilbw.de/fileadmin/media/e-mobilbw/Publikationen/Studien/e-mobil_BW-Studie-Wirtschaftsfaktor-Ladeinfrastruktur.pdf [Accessed: June 15, 2025].
7. European Council (Ed.). (2025). EU action against climate change – A climate-neutral EU by 2050. Retrieved from https://www.consilium.europa.eu/en/policies/climate-change/ [Accessed: June 15, 2025].
8. Fischer, L., Rupalla, F., Sahdev, S., Tanweer, A. (2024). Exploring consumer sentiment on electric-vehicle charging. McKinsey & Company. Retrieved from https://www.mckinsey.com/features/mckinsey-center-for-future-mobility/our-insights/exploring-consumer-sentiment-on-electric-vehicle-charging [Accessed: June 14, 2025].
9. Globisch, J., Plötz, P., Dütschke, E., Wietschel, M. (2018). Consumer evaluation of public charging infrastructure for electric vehicles, No. S13/2018. Working Paper Sustainability and Innovation. Retrieved from https://www.econstor.eu/handle/10419/184649
10. Globisch, J., Plötz, P., Dütschke, E., Wietschel, M. (2019). Consumer preferences for public charging infrastructure for electric vehicles. In Transport Policy, Vol. 81, pp. 54-63. Retrieved from https://doi.org/10.1016/j.tranpol.2019.05.017
11. Hildebrand, N., Kummer, S. (2024). Systematic literature review of urban charging infrastructure planning over time. In Cleaner Energy Systems, Vol. 8, Art. 100123. Retrieved from https://doi.org/10.1016/j.cles.2024.100123
12. Hunziker, S., Blankenagel, M. (2021). Research Design in Business and Management: A practical guide for students and researchers. Wiesbaden: Springer.
13. Illahi, U., Egan, R., O'Mahony, M., Caulfield, B. (2024). Self-reported public fast charging infrastructure demand: What do existing and potential electric vehicle adopters want and where? In Sustainable Cities and Society, Vol. 116, Art. 105935. Retrieved from https://doi.org/10.1016/j.scs.2024.105935

14. International Energy Agency (IEA) (Ed.). (2025). Global EV Outlook 2025: Expanding sales in diverse markets. Retrieved from https://www.iea.org/reports/global-ev-outlook-2025
15. Letmathe, P., Sperling, D., Woeste, R. (2025). Consumer preferences for public EV charging tariffs and infrastructure reliability: A choice experiment. In Transport Policy, Vol. 170, pp. 147-162. Retrieved from https://doi.org/10.1016/j.tranpol.2025.05.010
16. Mayring, P. (2010). Qualitative Inhaltsanalyse: Grundlagen und Techniken (11th ed.). Weinheim: Beltz.
17. NOW GmbH (Ed.) (2020). Easy Charging: The charging experience as a user journey at public charging stations for electric vehicles now and in 2025. Retrieved from https://nationale-leitstelle.de/wp-content/uploads/2021/05/P733_20_204_Thesenpapier_UserJourney_en_210x210_RZgp_WEB.pdf
18. Otero-Romero, T., Castillo, C., Calero-Jiménez, J. M., Rollón, B. M., Alvarez-Palau, E. J. (2025). Are we ready to transition towards e-mobility? An analysis of electric vehicle public charging infrastructure in Barcelona. In Case Studies on Transport Policy, Vol. 21, Art. 101519. Retrieved from https://doi.org/10.1016/j.cstp.2025.101519
19. Pape, M. (2021). Sustainable and smart mobility strategy. European Parliamentary Research Service, PE 659.455. Retrieved from https://www.europarl.europa.eu/RegData/etudes/BRIE/2021/659455/EPRS_BRI(2021)659455_EN.pdf
20. Philipsen, R., Schmidt, T., Ziefle, M. (2015). A charging place to be – Users' evaluation criteria for the positioning of fast-charging infrastructure for electro mobility. In Procedia Manufacturing, Vol. 3, pp. 2792-2799. Retrieved from https://www.sciencedirect.com/science/article/pii/S235197891500743X
21. Reinke, J. (2014). Bereitstellung öffentlicher Ladeinfrastruktur für Elektromobilität: Eine institutionenökonomische Analyse. Doktorarbeit. Berlin: Technische Universität Berlin. Retrieved from https://depositonce.tu-berlin.de/items/8b7239f1-ac2c-4b02-9db1-b4f35fd83b0d
22. Rochd, A., Laamim, M., Benazzouz, A., Kissaoui, M., Raihani, A., Sun, H. (2023). Public charging infrastructure for EVs: A comprehensive analysis of charging patterns & real-world insights – Case study of Rabat City, Morocco. In Energy Reports, Vol. 9, pp. 216-234. Retrieved from https://doi.org/10.1016/j.egyr.2023.05.259
23. Schulz, F., Rode, J. (2022). Public charging infrastructure and electric vehicles in Norway. In Energy Policy, Vol. 160, Art. 112660. Retrieved from https://doi.org/10.1016/j.enpol.2021.112660
24. Tomás, M., Marqués, A. (2023). Full accessibility and user-friendly smart mobility services across the European charging infrastructure. In Transportation Research Procedia, Vol. 72, pp. 565-571. Retrieved from https://doi.org/10.1016/j.trpro.2023.11.440
25. Tschiesner, A., Hertzke, P., Schaufuss, P., Heuss, R., Labourier, D., de Dampierre, G., Paulitschek, J., Groth, M., Boers, M., Höfer, T. (2024). Europe's economic potential in the shift to electric vehicles. McKinsey & Company. Retrieved from https://www.mckinsey.com/industries/automotive-and-assembly/our-insights/europes-economic-potential-in-the-shift-to-electric-vehicles [Accessed: June 16, 2025].
26. Venkatesh, V., Bala, H. (2008). Technology acceptance model 3 and a research agenda on interventions. In Decision Sciences, Vol. 39(2), pp. 273-315. Retrieved from https://doi.org/10.1111/j.1540-5915.2008.00192.x

Appendix

No.	Title of Paper	Author	Year	Publication Medium	Country	Factors influencing user acceptance
1	Consumer preferences for public EV charging tariffs and infrastructure reliability: a choice experiment	Letmathe et al.	2025	Transport Policy	Germany	• energy price • walking distance • reliability (pp. 154-157)
2	An experimental analysis of consumer preferences towards public charging infrastructure	Brückmann /Bernauer	2023	Transportation Research Part D	Switzerland	• fast charging & short waiting/queueing time • reservation system • price • energy source • amenities (pp. 5, 9)
3	Are we ready to transition towards e-mobility? An analysis of electric vehicle public charging infrastructure in Barcelona	Otero-Romero et al.	2025	Case Studies on Transport Policy	Spain	• quantity of charging stations • charging station locations/distribution • accessibility • charging station types • real-time information about charging availability • flexible pricing tailored to station type and location • collaboration with energy providers to strengthen the grid • economic incentives • education campaigns (pp. 21-24)
4	Public Charging Infrastructure and Electric Vehicles in Norway	Schulz/ Rode	2022	Energy Policy	Norway	• charging station availability (p. 18)
5	Public charging infrastructure for EVs: A comprehensive analysis of charging patterns & real-world insights—Case study of Rabat City, Morocco	Rochd et al.	2023	Energy Reports	Morocco	• availability • charging station locations • charging station types (fast chargers) • load management systems • charging in off-peak hours • renewable energy sources (p. 232)
6	Full accessibility and user-friendly smart mobility services across the European charging infrastructure	Tomás/ Marqués	2023	Transportation Research Procedia	Europe	• accessibility, • interoperability framework and platform to support roaming and improve users' accessibility to charging infrastructure • highly convenient charging systems

						• user-friendly services (p. 566)
7	Preferences for public electric vehicle charging infrastructure locations: A discrete choice analysis	Bhat et al.	2024	Transport Policy	India	• density • Mix of charging types (fast and slow) • charging time • waiting time • charging cost/ subsidies • distance • emissions/ renewable energy sources (pp. 187-188)
8	Consumer evaluation of public charging infrastructure for electric vehicles	Globisch et al.	2018	Working Paper Sustainability and Innovation	Germany	• charging duration • density of charging spots • (low) willingness to pay (p. 19)
9	Global EV Outlook 2025 Expanding sales in diverse markets	International Energy Agency (IEA) (Ed.)	2025	IEA Publications	Global	• accessibility • density of charging points • reliability and uptime • integration with renewables • user-friendly payment/authentication • policy incentives • regulatory frameworks (pp. 99-133)
10	Easy Charging. The charging experience as a user journey at public charging stations for electric vehicles now and in 2025	NOW GmbH (Ed.)	2020	Position Paper	Germany	• simple • always possible everywhere • transparent • safe • convenient (p. 7) • FAST CHARGING • CERTAIN PAYMENT METHODS AVAILABLE • CERTAIN CONNECTORS AVAILABLE AT THE CHARGING POINT • POTENTIAL TO ACCESS FOOD AND DRINK • PUBLIC TOILETS NEARBY • POSSIBLE PASTIME IN THE AREA • CHARGING STATION LIGHTING • CONNECTED CABLE AVAILABLE • ROOF ABOVE THE CHARGING STATION • POSSIBILITY TO USE WI-FI (pp. 38-39)

11	Consumer preferences for public charging infrastructure for electric vehicles	Globisch et al.	2019	Transport Policy	Germany	• charging time as the strongest driver of acceptance • density of charging points • pricing (pp. 59-62)
12	What electric vehicle users want: Real-world preferences for public charging infrastructure	Anderson et al.	2017	Sustainable Transportation	Germany	• infrastructure at common locations (work, shopping, leisure) • stations in all regional structures (urban, suburban, rural) • various charging power levels (slow, semi-fast, fast) • accessibility from users' point-of-view (private and public sector involvement) • multiple frequencies of use (daily, occasional backup) (p. 9)
13	A Charging Place to Be - Users' Evaluation Criteria for the Positioning of Fast-charging Infrastructure for Electro Mobility	Philipsen et al.	2015	Procedia Manufacturing	Germany	• dual use • habit compatibility • accessibility • visibility • reliability • safety • connection to public transportation • necessity (pp. 2796-2797)
14	Self-reported public fast charging infrastructure demand: What do existing and potential electric vehicle adopters want and where?	Illahi et al.	2024	Sustainable Cities and Society	Ireland	• availability • accessibility • reliability • cost • charging speed • payment ease (pp. 9-12)
15	Exploring consumer sentiment on electric vehicle charging	Fischer et al.	2024	McKinsey Center for Future Mobility	Worldwide	• charging speed • charging costs
16	The Critical Success Factors for Electric Vehicle Adoption Among Malaysian Drivers	Anuar et al.	2023	PaperASIA	Malaysia	• availability/ convenience • price • environmental aspect (pp. 92-93)