STRATEGIC MANAGEMENT, Vol. 31 (2026), No. 1, pp. 052-062

DOI: 10.5937/StraMan2500007V

Received: March 24, 2025
Revised: August 01, 2025
Accepted: September 03, 2025
Published online: September 29, 2025

Identifying segments of consumers willing to buy an electric car using Choice Based Conjoint method

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Abstract

Background: Whatever product we buy today, we should all take sustainability into account. This applies to everyday consumer goods, the use of environmentally friendly materials, and the field of transportation. A wide range of mobility options is available to meet modern transportation demands, and the steady increase in the number of vehicles used for daily travel has become clear in recent years. The increasing diversification of mobility needs has made car ownership – typically at least one vehicle per household – nearly indispensable. Increased traffic and the ever-increasing number of vehicles are also a threat to our environment. In addition to noise pollution, air pollution has worsened in recent decades largely because of the continuous emission of carbon dioxide from transportation. If all transport vehicles were electrically powered, urban noise and air pollution would be significantly reduced, thereby contributing to sustainability and enhancing the overall liveability of cities. However, the uptake of electric cars remains challenging due to the trade-offs involved, and there is ongoing debate regarding the extent to which they contribute to cleaner transportation.

Purpose: This paper aims to examine consumer segments from the dataset of a previously conducted online survey, based on their attribute preferences related to electric vehicle purchasing decisions.

Study design/methodology/approach: In an online questionnaire survey conducted in February 2023, we collected responses from 206 participants. Their answers enabled us to apply conjoint analysis to determine the characteristics of the ideal electric vehicle. The present study aims to identify which electric vehicle attributes are considered most important in the purchase decision-making process across different consumer groups. To achieve this, we segmented the respondents into well-defined groups, examined their preferences, and estimated the utility values associated with each sub-attribute level.

Findings/conclusions: During the segmentation process, three distinct consumer groups were identified: “City Comforters”, “Long Haul Luxers” and “Eco Hatch Explorers”. Although their preferences vary in relative weight, all three segments prioritize price, driving range, and vehicle design when considering the purchase of an electric vehicle. The analysis also presents the relative importance of attribute levels within each group.

Limitations/future research: The vast majority of respondents to the online questionnaire underlying this study were individuals with a pre-existing interest in automobiles and driving. While this target group provided valuable insights, more robust and generalizable findings could be obtained through a larger and more demographically diverse sample. Additionally, analyzing the demographic background of the identified segments could yield further meaningful insights and is therefore recommended as a promising avenue for future research. A further methodological limitation is that the applied model does not account for noncompensatory decision rules – situations in which a respondent considers one attribute so essential that it overrides all other considerations. In such cases, a respondent will consistently choose the same attribute level regardless of the trade-offs. To better accommodate this type of decision-making behavior, future studies may benefit from applying the Adaptive Choice Based Conjoint method.

Keywords

electric car, consumer behavior, sustainability, segmentation, Choice Based Conjoint

Introduction

As sustainability has evolved beyond a mere buzzword (Gyurácz-Németh et al., 2021), virtually no domain is untouched by it today. According to the Brundtland Report on sustainable development, resources should be utilized in a manner that ensures their availability and usability for future generations (Lele, 2013). Although the need to reframe our patterns of consumption is increasingly recognized (Hofmeister-Tóth et al., 2010), achieving more conscious consumer behavior is difficult in a socio-economic context where continuous growth is not only the norm but often an expectation. At the same time, products that support sustainable lifestyles are gaining prominence (Brewer, 2019), and various industries – some more decisively than others – are being compelled to develop sustainable solutions (Sodiq et al., 2019; Glass & Newig, 2019). These developments collectively enable consumers to pursue more sustainable everyday practices (Brand, 2016). Since transportation is one of the sectors that contributes most significantly to greenhouse gas emissions (Han et al., 2017), the search for alternatives in this area has also become necessary. Consumers express a desire for sustainable products (Wunderman Thompson Intelligence, 2021), a trend that has also emerged in the field of transportation. However, the use of sustainability-promoting products that involve certain compromises appears to be problematic (Verma, 2020), as they may somewhat limit the accustomed, carefree lifestyle (Avram, 2014). A similar situation can be observed in the case of electric vehicles (EVs). When it comes to everyday mobility, electric driving represents a relatively new, yet increasingly prominent topic that garners considerable interest. Our research indicates that over the years, public awareness and opinion regarding the use of EVs have grown steadily, alongside a rising number of both domestic and international studies addressing the subject (Tóth, 2017; Németh & Kovács, 2022; Pónusz & Klinszky, 2024). While many consider EVs a sustainable solution for transportation, others argue that they may, in fact, contribute to environmental harm, raising various concerns about their actual impact (Gelmanova et al., 2018). One frequently cited issue is the questionable recyclability of EV batteries (Blomgren, 2016), and the fact that electricity generation for charging often still relies on fossil fuels such as oil (Ortar & Ryghaug, 2019). Nevertheless, it is indisputable that EVs, lacking internal combustion engines, produce no emissions, thereby eliminating direct air pollutants from urban environments (Martins et al., 2021). The battery systems used in EVs store energy to power electric motors, allowing for noise-free operation (Sendek-Matysiak, 2018) and emission-free driving during use (Sobol & Dyjakon, 2020). While the electric vehicle has emerged in public awareness as a sustainable transportation alternative, consumers are not adopting it at the pace manufacturers had anticipated (Prakhar et al., 2024). Ongoing uncertainty regarding the environmental benefits of electric vehicles continues to hinder consumers from replacing their traditional vehicles (Xue et al., 2024).

1. Electric cars in transition: From technological promise to consumer reality

There are many arguments for and against the use of electric cars. The most important advantage, besides greener transport, is that it is cheaper to maintain, both in terms of maintenance and running costs (Scorrano et al., 2020). A petrol or diesel car, due to its technology, has a lot of rotating and wearing parts that age, wear out and need to be replaced over time (Cotterman et al., 2024). In addition to these parts, there is of course the regular periodic service, which means, for example, changing the engine oil. Since electric vehicles contain significantly fewer rotating and wearing parts (Cotterman et al., 2024) and do not require engine oil at all, their service needs – and associated costs – are considerably lower (Metso et al., 2020), with maintenance expenses potentially reduced by up to 40% (Albatayneh, 2024). Also, cheaper operation is ensured by the number plates available in many countries that distinguish electric cars from conventional cars (Li et al., 2023). While in Germany, for example, an extra "E" character appears on the official registration plate (Ferner, 2024), in Hungary the basic color of the number plate is green (Villanyautosok, 2024). There are differences in which countries offer discounts to e-car drivers (Zhuge et al., 2020). For instance, in Hungary e-car users are exempted from paying registration tax, vehicle tax and property acquisition tax (Katona, 2016). Moreover, although the number of such cities is decreasing, there are still many cities – including the capital, Budapest – where they can park for free in pay zones (Bukovics, 2021). In addition to public incentives (Breetz & Salon, 2018) and cheaper maintenance costs, electric cars promise a whole new way of travelling for drivers, as they imply a more conscious and enjoyable (comfortable, unique, dynamic) way of travelling compared to conventional cars. However, while there are many advantages to be gained from electric cars, there are also some factors that make the adoption slower. One of these is price (Vilchez et al., 2019). Despite the low maintenance costs, car manufacturers want to recover the development costs of e-cars as quickly as possible, so the purchase price of electric cars is particularly high. Car manufacturers justify the high purchase price with the cost of producing the batteries, but these costs are steadily decreasing (Soulopoulos, 2017), even if this is not reflected in the price tag of the new cars (Larson et al., 2014). For example, looking at Hyundai's Hungarian website, their Kona model would cost approximately EUR 24,000 with a conventional petrol engine, approximately EUR 28,000 with a hybrid system (combustion engine plus electric drive), and approximately EUR 33,300 for a pure electric model in early 2025 (Hyundai, 2025). However, a growing number of electric vehicles are now available on the second-hand market, where more cost-effective options can be found. Another drawback is that even today's most advanced electric cars have a shorter driving range (Albatayneh et al., 2020) and slower charging compared to any conventional petrol or diesel car. We are used to being able to travel 700-800 or even 1000 kilometers on one single fuel tank, while even the most advanced electric cars can only travel 400-500 kilometers on a single electric charge (Philipsen et al., 2018). We have also become accustomed to the fact that it typically takes no more than 10 minutes to fill up a conventional car, while e-cars can only "fill up" a fraction of the total range in that time. In return, however, we can charge our e-car at home during the night, which we cannot do with a conventional car (Baresch & Moser, 2019). Home charging – particularly when sourced from solar panels – is not only emission-free (Adeh et al., 2019), but also incurs no ongoing energy costs, aside from the initial investment in the solar infrastructure. Consequently, electric vehicles charged this way enable virtually cost-free driving on a per-kilometer basis.

Clearly, there are many arguments for and against electric cars. However, it is also worth considering that mass-produced electric technology has only been available to consumers for the last 20 years (Roberts, 2022), and that the most advanced petrol or diesel cars of today were not always so advanced either. Although the range of e-cars is unlikely to increase significantly (Ruffo, 2021), battery charging times are expected to become much faster, as the trend shows, and the development of charging networks to facilitate charging is ongoing. Despite the financial incentives, the above-mentioned drawbacks and counterarguments are slowing down the rapid spread of electric cars. At the same time, the number of e-cars is growing worldwide year by year. In Hungary, for instance, 5 years ago, there were 7,700 electric cars on Hungary's roads at the beginning of 2020, then 22,000 electric cars by the beginning of 2022, with their number already exceeding 70,000 by 2025, with 74,456 pure electric cars on the roads in February 2025 (Szűcs, 2024). As traditional petrol or diesel cars have been in our daily lives for so long, the transition to e-cars is causing complications at all levels, from manufacturers, infrastructure developers to consumers. To achieve zero emissions in transportation, the European Union has set a target to ban the distribution of cars with internal combustion engines from 2035 (European Commission, 2022). This decision will challenge European car manufacturers to adapt their production lines and completely rethink their portfolio in a relatively short time. They will also face difficulties in developing the charging infrastructure for e-cars. As indicated above, charging electric cars can be done at home or at work, but public charging stations are also needed, for example for those who cannot charge their cars at home (Jochem et al., 2022). However, the development of charging infrastructure is a long process, and the number of charging stations does not follow the growth in the number of electric cars (Szabó, 2023). The standardization of charger connectors and the widespread implementation of charging hubs are developments that have yet to be fully realized (Matjaz et al., 2019; Vereckei-Poór, 2023). Finally, the transition to e-cars will bring a big change to the lives of consumers. In a survey of 1,000 people representative of the Hungarian population in 2022, in which attitudinal statements were formulated (Vereckei-Poór & Törőcsik, 2023), 53.0% of consumers agreed that e-cars are beneficial for the environment, while 46.5% also thought that the spread of e-cars will not stop global warming. 48.7% indicated that they were sympathetic to this means of transport and only

26.0% agreed that it would keep the limitless travel within bounds. Although operating an e-car is generally more straightforward than using a conventional car, its shorter driving range – and the associated limited driving range – necessitate a more deliberate and well-planned approach to travel. It is therefore evident that while numerous arguments support electric vehicles (EVs), there are also several counterarguments that contribute to consumers' uncertainty regarding their willingness to purchase EVs. Among the many factors, government incentives (Pamidimukkala et al., 2023), purchase price (Pamidimukkala et al., 2024), infrastructure development (Zhang et al., 2024), technological innovation and related challenges (Dwipayana, 2023) or even demographic factors (Tao et al., 2024) play a crucial role in shaping consumer demand for electric vehicles. Incentives such as tax exemptions, purchase subsidies, and free parking directly influence the perceived value and cost-benefit ratio of EVs from the buyer's perspective. Meanwhile, the availability and accessibility of charging infrastructure affect the convenience of daily usage and long-distance travel, which are often major concerns among prospective EV buyers. Technological advancements – particularly in battery range, charging speed, and smart vehicle functions – also contribute to shaping consumer expectations. These factors do not operate in isolation: they interact with consumer preferences, shaping both the perceived usefulness and ease of use of EVs and therefore align closely with the key constructs of the Technology Acceptance Model. Numerous studies have investigated EV adoption through the lens of the Technology Acceptance Model (TAM) developed by Fred Davis (Davis, 1989). The TAM comprises two core components: perceived usefulness (PU) and perceived ease of use (PEOU), which are key predictors of consumer attitudes and purchase intentions. In the context of EVs, PU reflects the extent to which consumers view the use of the vehicle as beneficial – for instance, due to lower operational costs, environmental benefits, or innovative features – while PEOU encompasses factors such as infrastructure availability, charging convenience, and ease of user interaction. Empirical evidence suggests that both PU and PEOU significantly influence EV purchase intentions. For example, a Malaysian study found that both factors are strongly correlated with EV purchase willingness (Poon et al., 2024). A Chinese study demonstrated that environmental knowledge, PU, PEOU, and perceived risk (PR) all significantly affect purchase intention, where perceived risk has a negative effect, while environmental knowledge positively enhances both PU and PEOU (Jaiswal et al., 2022). Furthermore, a 2024 study conducted in Brazil using structural equation modelling confirmed that infrastructure readiness, PEOU, and Green Utility (i.e., the perception of the technology's environmental benefits) positively influence the intention to adopt EV technology. Interestingly, environmental concern did not show a direct effect on behavioral intention in this sample (Oliveira et al., 2024). Overall, in the EV context, the TAM can be extended by incorporating variables such as PU and PEOU, perceived risk, knowledge level, infrastructure accessibility, and optionally, social and psychological factors (e.g., attitudes and subjective norms), which together offer a more comprehensive explanation of both purchase and acceptance intentions.

2. Research background

The segmentation presented in this study is based on an online survey conducted in February 2023 with 206 respondents. The survey employed the Choice Based Conjoint (CBC) method to identify the characteristics of the ideal electric car as perceived by participants (Vereckei-Poór & Ujházi, 2023). This method was selected due to the relatively limited variety of electric vehicles currently available on the market, especially when compared to the broader range of conventional petrol and diesel vehicles. Conjoint techniques are well suited for product development to create products that meet market needs (Wittink et al., 1994). In CBC analyses, consumers are forced to forego other attributes in order to obtain one attribute in their decision making, and the attributes that are most useful are selected on this basis (Bernáth & Szabó, 2019). Each product can be described in terms of its attributes, which can have multiple attribute levels. Based on these, we create fictitious products, represent them on cards (Malhotra, 2005), and ask respondents to rate them depending on the type of conjoint analysis. The CBC method involves creating hundreds of cards and showing at least 3 but no more than 5 cards to the research subjects and asking them to choose the one that best matches their expectations from the cards they have just seen. From the resulting data, we can calculate the relative importance of attributes, the part-worth utilities of attribute levels, and individual utility values, which can be used as segmentation criteria even with relatively small sample sizes (Mahajan et al., 1982). While the study provides valuable insights into consumer preferences, it is important to note that the sample used was non-representative and relatively small (n=206), which may limit the generalizability of the findings to the broader population. However, the use of the Choice Based Conjoint (CBC) method in combination with the Latent Class Multinomial Logit (LCMNL) modelling allows for meaningful segment-level preference estimation even with limited sample sizes (Mahajan et al., 1982). The segmentation and insights presented here should therefore be interpreted as indicative and exploratory, offering a basis for future research with more diverse and representative samples.

Our non-representative online survey asked participants to imagine what their ideal electric car would be. Based on the above, we created fictitious electric cars with the following attributes (CBC attribute levels): condition (new or used), design (cabriolet, sedan hatchback, station wagon, sport, minivan, SUV, pickup), range (from 150 km to 950 km), equipment (1: basic, 2: comfort, 3: full extra), price (from €12,500 to more than €125,000) which can be seen in Table 1. The attributes were developed in line with the dilemmas associated with electric vehicle usage, as identified in our earlier research, the findings of which have been previously published (Vereckei-Poór, 2025). To define the attribute levels, we relied on professional automotive websites and the search filters of used car portals. By randomly combining the attribute levels, 300 cards were created, each representing a fictitious electric car. Respondents were presented with 4 cards each time (Figure 1 as an example), from which they had to choose the option they liked best, and if they could not decide, they could indicate that they would not choose any of them. The decision situation was asked to be repeated 12 times, during which the respondents were always presented with new cards and thus a new decision situation. The result of our research is that the most important factor for an imagined electric car purchase is the price, followed by the car's design, its range, then its equipment and condition.

During our research, we identified several studies that segmented consumer groups based on their electric vehicle usage. The objective of these studies is to develop value-based, targeted marketing and business strategies tailored to specific segments. A 2022 study used the RFM model, two-stage clustering, and the Entropy Weight Method to cluster EV owners, thereby identifying various EV user groups, characteristic consumer value categories, and consumer preferences (Hu et al., 2022). In a study from 2024 involving Filipino electric vehicle owners, K-means clustering was applied, with a specific focus on demographic, income, and lifestyle data. The study defined segments that reflect the varying purchasing capacities for electric vehicles across different demographic backgrounds (Uy et al., 2024).

Based on the results of our previous research, we think it is worthwhile to examine the sample of our research conducted in February 2023 to identify which consumer segments could be created among those who would buy an electric car. Once the segments have been defined, we thought it would be interesting to compare these groups, to see which of the attributes identified are considered most important. By defining the segments, we can also find out which factors help or hinder the purchase of a pure electric car. On this basis we can make recommendations to car manufacturers on which attributes they should improve. Our segmentation procedure, the Latent Class Multinomial Logit (LCMNL) model, divides respondents into segments with similar preferences based on which card they chose in each decision situation in the previous CBC questionnaire (Ogawa, 1987; Vriens et al., 1996). It simultaneously estimates the segmental utilities, and the probability of which segment respondents belong to (DeSarbo et al., 1995; Lenk et al., 1996).

Table 1 Product attributes used for CBC analysis and their attribute levels

UTAUT variable	Expected Performance			Hedonistic motivation	Price-value perception
CBC attributes	**Condition**	**Design**	**Range**	**Equipment**	**Price (EUR/€)**
CBC attribute levels	new	cabriolet	150 km	1 – basic	€12,500
	used	sedan	300 km	2 – comfort	€25,000
		hatchback	450 km	3 – full extra	€37,500
		station wagon	600 km		€50,000

CBC attribute levels		sport	950 km		€62,500
		minivan			€75,000
		SUV			€100,000
		pickup			€125,000
					> €125,000

Source: the authors

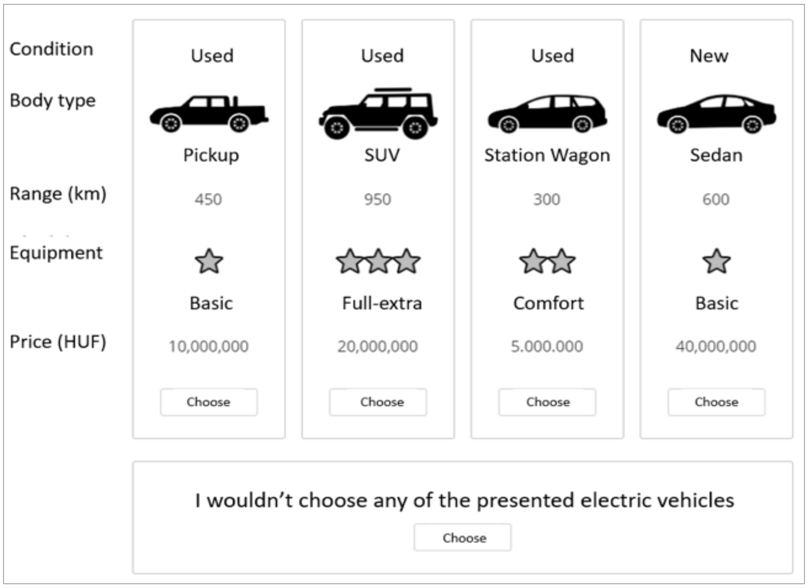

Figure 1 One of the decision scenarios used in the process of data collection
Source: Ujházi & Vereckei-Poór, 2023

2.1. The subject of the research

We reached 206 people with the help of social media to respond to our non-representative online questionnaire in February 2023. We shared the survey in several groups involved in car and/or e-car use, as shown by the relatively high proportion of people in the sample who own a car or e-car. 97% of respondents have a driving license, 87% said they own a car or have a car in their environment that they can use on a daily basis. The vast majority own 1 or 2 cars, 60% of which are petrol, 38% diesel, 27% pure electric and 5% plug-in hybrid. 70% of respondents were male, 29% female and 1% selected the other option. 41% of the sample were aged between 29 and 43, 31% between 44 and 62, 25% between 18 and 28 and 3% between 63 and 77. 59% of the sample live in urban areas, 31% in agglomerations and 9% in other places. 54% of respondents have a university degree of some kind, 19% are still studying. 55% of the sample are in full-time employment, 15% own a business and 14% work in a managerial position.

3. Results

Through LCMNL segmentation, we were able to gain a deeper understanding of our respondents' preferences. After performing the segmentation, we could identify three groups that were significantly different from each other. The first group included 39.7% of respondents, the second 27.8% and the third 32.5%. The segments created are characterized by the relative importance of the attributes (Table 2) and the part-worth utilities of the attribute levels (Table 3).

Looking at the relative importance of the attributes, Table 2 shows that for **Segment 1**, the most important attribute is the purchase price (40.7%), followed by the design (30.13%), then the range of the car on a single charge (16.02%). The level of equipment (7.92%) is less important, and the condition (5.23%) is the least important for **Segment 1**. For **Segment 2**, the purchase price (79.76%) is the most important aspect, with range (8.92%) being only slightly more important than the design (8.04%), and the least important attributes being the equipment level (1.80%) and the condition of the car (1.48%). **Segment 3**, unlike the previous two, did not consider the purchase price to be the most important attribute, but the car's design (45.89%), followed by the purchase price (21.44%), the range (20.78%) and the equipment level (11.75%). As in the previous segments, the condition of the car was not an important attribute for them either.

Table 2 Relative importance of attributes by group expressed as a percentage

Attributes	Segment 1	Segment 2	Segment 3
Condition	5,23%	1,48%	0,13%
Design	30,13%	8,04%	45,89%
Range	16,02%	8,92%	20,78%
Equipment	7,92%	1,80%	11,75%
Price	40,7%	79,76%	21,44%

Source: the authors

The partial utilities of the attribute levels for the three segments are shown in Table 3. **Segment 1** considers the lowest price range (EUR 12,500) to be the most attractive in terms of purchase price but would be willing to pay up to EUR 50,000 for the car. In terms of design, they would prefer to buy a hatchback, or a sedan, maybe a station wagon or a minivan, but certainly not a cabriolet or a pickup. In terms of range on a single charge, 600 km is the most attractive for them, followed by 950 km, then 450 km, and they would certainly not buy an e-car with a range of 150 km. Those in this segment would buy the highest equipped car in new condition. **Segment 1** would therefore buy a comfortable hatchback with a range of 600 km for EUR 12,500 in new condition. We label this group the "City Comforters".

Those in **Segment 2** also prefer the lowest purchase price but would be willing to pay EUR 100,000 for an e-car but would not pay EUR 125,000 or more. In terms of range, they would prefer the highest (950 km) but would be happy with a range of 450 km as well but would not accept anything below that. The second segment would prefer a sedan e-car, but would buy a station wagon, a pickup truck or even a minivan. They would not choose a cabriolet, sports car or SUV. This segment would also choose the highest equipment level and buy a new car in new condition. **Segment 2** would therefore buy a comfortable, new sedan with a 950 km range for EUR 12,500. We label this group the "Long Haul Luxers".

Segment 3 would mainly buy a hatchback, possibly a station wagon, sedan or minivan. They would prefer a price tag of EUR 12,500 but would be prepared to pay up to EUR 75,000 for a car but are not willing to spend more than that. In terms of range on a single charge, they would also prefer 950 km, followed by 450 km and 600 km. They would not buy a car with a range of 300 km or less. In terms of equipment, they prefer a high level, the condition of the car is not very important to them, and they would be satisfied with a used car. **Segment 3** would therefore prefer a comfortable used hatchback with a 950 km range for EUR 12,500. We label this group the "Eco Hatch Explorers".

In summary, the results show that all three groups prefer the lowest purchase price of EUR 12,500, but while **Segment 1** is the most price-sensitive, **Segment 2** would be willing to pay the most (up to EUR 100,000) for an e-car, and **Segment 3** is also willing to pay a high price. Looking at the design of car, it seems that sedans, station wagons, minivans and hatchbacks are the most popular among the 3 segments, but **Segment 2** would prefer a pickup instead of the latter. In terms of range on a single charge, **Segment 2** and **Segment 3** prefer 950 km, while **Segment 1** prefers 600 km, but all three groups are willing to compromise and would be happy with 450 km. In terms of equipment level, all groups prefer the highest of the three available categories. **Segment 1** and **Segment 2** would buy a new car, while **Segment 3** would prefer a used car.

Table 3 Part-worth utilities by Segments

	Segment 1	Segment 2	Segment 3
Condition			
new	13,07092	3,69778	-0,33326
used	-13,07092	-3,69778	0,33326
Design			
cabriolet	-74,88240	-25,66597	-43,94963
sedan	72,27767	14,51105	35,79475
hatchback	75,78175	1,53372	83,85207
station wagon	42,53039	12,07417	61,26645
sport	-24,81328	-9,90371	-15,05971
minivan	20,33980	3,26067	25,81116
SUV	-38,51162	-1,83136	-2,13305
pickup	-72,72232	6,02143	-145,58204
Range (in km)			
150 km	-51,85170	-24,99902	-60,78264
300 km	-20,86336	-13,49409	-6,29427
450 km	16,76699	7,08851	14,56479
600 km	28,24042	11,79991	9,37804
950 km	27,70764	19,60469	43,13408

Equipment			
1 - basic	-21,95107	-5,32042	-38,06924
2 - comfort	4,31615	1,64094	17,37595
3 full extra	17,63492	3,67948	20,69329
Price (in EUR/€)			
€12,500	95,09932	112,69172	38,74721
€25,000	61,60379	97,97445	22,58130
€37,500	65,93439	90,26022	18,38615
€50,000	6,60670	71,05176	23,41474
€62,500	-16,06729	56,89742	17,11556
€75,000	-40,78351	40,80935	16,18790
€100,000	-4,52590	16,01570	-19,16607
€125,000	-59,45094	-199,56853	-48,79389
> €125,000	-108,41656	-286,13210	-68,47290

Source: the authors

Conclusions

Despite the growing interest in electric vehicles, their widespread adoption remains limited by several factors. One key barrier is the lack of diversity in the current portfolios of EV manufacturers: electric models are not yet available across all vehicle segments and body types. A non-representative online survey conducted in 2023 (n=206), using the Choice Based Conjoint method aimed to identify the characteristics of an ideal electric vehicle from the perspective of Hungarian consumers (Ujházi & Vereckei-Poór, 2023). While the findings provide meaningful insights into consumer preferences, the limited and non-representative nature of the sample restricts the generalizability of the results to the broader population. The present study draws upon this dataset. The primary objective was to determine whether distinct consumer segments could be identified, and to explore their specific preferences. Applying the Latent Class Multinomial Logit (LCMNL) model, we identified three clearly differentiated segments. Based on the relative importance of various vehicle attributes and the partial utilities of specific attribute levels, we labelled the segments as follows: (1) “City Comforters”, (2) “Long Haul Luxers”, (3) “Eco Hatch Explorers”. Although a demographic background analysis could have provided deeper insight into each segment’s characteristics, this was beyond the scope of the current research. Nevertheless, we consider it a promising direction for future investigation. Segment preferences revealed that price, driving range, and design were the most critical factors influencing potential purchase decisions. These three elements also reflect broader structural limitations that hinder mass adoption of EVs. In particular, electric vehicles tend to have significantly higher purchase prices compared to internal combustion engine vehicles, and they are often associated with limited driving range and underdeveloped charging infrastructure, which together create substantial constraints for prospective buyers. While the SUV trend continues to dominate the automotive market, and the electrification of this segment is progressing rapidly, our findings suggest that there is also substantial latent demand for affordable, fully electric sedans, station wagons, and compact city hatchbacks. The decline of these previously popular body styles has made it increasingly difficult for consumers to find suitable EV alternatives within current offerings. Considering these results, we recommend that automotive manufacturers adopt a more consumer-oriented approach to product development. Expanding EV portfolios to include a broader range of affordable and practical models could enhance consumer interest and accelerate the European Union’s transition toward zero-emission mobility by 2035. We encourage industry stakeholders to reconsider investing in vehicle types that were once popular, and according to our findings, remain in demand. Alongside vehicle design, affordability and driving range must remain central areas of improvement. Addressing these dimensions is not only essential to increasing EV marketability but may also promote broader technological acceptance among consumers.

Declarations

Availability of data and materials

The datasets used and/or analyzed during the current study are available from the corresponding author on reasonable request.

Funding

'Not applicable'.

Acknowledgements

'Not applicable'.

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