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Study on Customer Acceptance of a Corporate Carsharing Offer in the Context of Sustainable Mobility

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Abstract

Corporate carsharing represents a sustainable operational mobility solution for companies and administrations. Particularly in light of the increasing environmental burdens caused by traffic, a closer examination of corporate carsharing seems especially sensible. There is currently insufficient information regarding the acceptance of a corporate carsharing offering. Additionally, it is worth mentioning that the Unified Theory of Acceptance and Use of Technology (UTAUT) has mostly been studied using quantitative methods, which are only limitedly suitable for practical implementation of the results obtained (Williams, Rana & Dwivedi, 2015). For these reasons, the goal of this research is to investigate, using a qualitative content analysis according to Mayring (2015), how a corporate carsharing offering should be designed to achieve maximum acceptance from customers. For this purpose, six customers with company headquarters in Baden-Württemberg, who already use a corporate carsharing offering, were surveyed. The theoretical framework of this work is formed by the UTAUT. The results of this research show that performance expectancy, effort expectancy, facilitating conditions, perceived environmental friendliness, and cost-effectiveness are key constructs that are crucial for the acceptance of Deer GmbH's corporate carsharing offering. Moreover, perceived innovation capability, driving pleasure, and corporate culture were identified as new constructs that are critical for the success of the corporate carsharing business model.

Keywords: Customer Acceptance, Corporate Carsharing, Sustainable Mobility, Technology Acceptance Model

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1. Introduction

In light of the increasing environmental impact of traffic and the associated social and ecological challenges, corporate mobility is assuming an increasingly central key role. One contributing factor to the current situation is that many companies in Germany still heavily rely on the company car incentive model. To effectively combat the burdensome traffic-related pollutant emissions, corporate mobility must be designed to be more efficient, ecological, and socially equitable in the future (Crsitescu, Schick & Reichsöllner, 2021). One potential, sustainable solution is corporate carsharing, which can make vehicle utilization significantly more ecologically and economically efficient (Brunner & Ochs, 2014; Schwieger, Theißen & Strübing, 2014; Linnhoff-Popien, Zaddach & Grahl, 2015). However, this type of mobility usage can raise concerns and, in some cases, even lead to rejection by employees (Fleury et al., 2017). Given that user acceptance is a fundamental factor for the development and success of such a corporate carsharing offer, it is important to understand the factors that determine the psychological acceptance of this technology. One of the most well-known and recent theories that can be used to explain technology acceptance is the Unified Theory of Acceptance and Use of Technology, abbreviated as UTAUT (Curtale, Liao & van der Waerden, 2021). It forms the theoretical framework of this research work and aims to better understand acceptance phenomena, thereby promoting the emergence of technology acceptance and ensuring maximum success (e.g., Kollmann, 1998). Overall, research on the acceptance of technologies shows that so far, only a few national and international studies have addressed the questions of psychological acceptance of a carsharing service from the users' perspective (Tran et al., 2019; Curtale, Liao & van der Waerden, 2021). For this reason, this research aims to investigate, using a qualitative content analysis according to Mayring (2015), how a corporate carsharing offering should be designed to achieve maximum acceptance from customers. For this purpose, customers of the company Deer GmbH will be interviewed. Conducting structured interviews with Deer GmbH's customers seems particularly sensible because the company is currently one of the few providers of a corporate carsharing offering in Germany. Since the corporate carsharing business area is still a very young business model, this research aims to investigate how it must be specifically designed to be successfully positioned in the market. With the help of the UTAUT, deeper insights into the decision criteria and motivation structures regarding the corporate carsharing offering from Deer GmbH's customers will be gained. The results will then enable the derivation of measures to improve the offering so that more customers can be attracted in the future and the business model can find broader application on the corporate side. Thus, the underlying research question of this work is:

How must the corporate carsharing offer of Deer GmbH be designed to achieve maximum acceptance by customers?

1.1 Review of the scientific literature

The theoretical framework of this work is formed by the Unified Theory of Acceptance and Use of Technology (UTAUT). It is one of the most well-known theories used to explain technology acceptance (Curtale, Liao & van der Waerden, 2021). Technology acceptance research aims to achieve the greatest possible acceptance when introducing a new technology, thus ensuring

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maximum success (e.g., Kollmann, 1998). The UTAUT was proposed by Venkatesh et al. in 2003 and is strongly based on the TAM (Venkatesh et al., 2003). Initially, the UTAUT was developed mainly for studying the acceptance of new technologies in the workplace context (Venkatesh et al., 2012). Later works focused more on how the UTAUT could contribute to the improvement of specific products. The application field of these research works is very broad, with the field of e-commerce being studied very intensively. But intensive research has also been conducted in areas such as medicine (e.g., Hennington & Janz, 2007), mobile phones (e.g., Wu, Tao & Yang, 2007), digital libraries (e.g., Jamaludin & Mahmud, 2011), and m-commerce (e.g., Min, Ji & Qu, 2008).

The UTAUT theory is also applied in the transportation sector. Madigan et al. (2017) used UTAUT2 to examine the acceptance of automated transportation systems in Greece and found that hedonic motivation had the strongest influence on usage intention, while effort expectancy showed no significant effect. However, Leicht, Chtourou, and Youssef (2018) demonstrated that in the original UTAUT, both social influence and performance expectancy, as well as effort expectancy, significantly influenced the purchase intention for autonomous vehicles. Hartwich et al. (2019) emphasized the importance of experience, as it significantly increased the acceptance of highly automated driving. Similar results were reported by Kapser and Abdelrahmen (2020) regarding the acceptance of autonomous delivery vehicles, where price sensitivity was the most important predictor and effort expectancy had no effect.

In the field of carsharing, UTAUT has also been applied. Tran et al. (2019) studied electric carsharing in China and found that, in addition to performance expectancy and hedonic motivation, familiarity with the concept influenced usage intention, while social influence had no significant effect. In contrast, Curtale, Liao, and van der Waerden (2021) in the Netherlands found that social influence was the most important predictor for usage intention, followed by performance expectancy and personal attitude. Zhu et al. (2021) found in their study that comparative value had the greatest effect on the perceived benefit of free-floating carsharing. This means customers were more willing to use the service if the model was perceived to be better than that of traditional providers.

Fleury et al. (2017) also confirmed that UTAUT is well-suited for measuring acceptance in the field of corporate carsharing. The results show that effort *expectancy* is the most important determinant for the intention to use a corporate carsharing offer. Interestingly, *facilitating conditions* have a strong impact on the intention to use, mediated by effort expectancy. Participants tend to perceive a carsharing offer as user-friendly when conditions make it easier. The researchers also extended the UTAUT to include *perceived environmental friendliness*, which has an indirect effect on the intention to use, mediated by *performance expectancy*. Carsharing was thus seen as more useful when it was rated as environmentally friendly. Contrary to the assumption, the variable of social influence showed no significant effect on the intention to use. This was explained by the fact that the carsharing offer had already been introduced in the

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company several months prior, but social influence only affects the intention to use at the beginning of usage in a mandatory context.

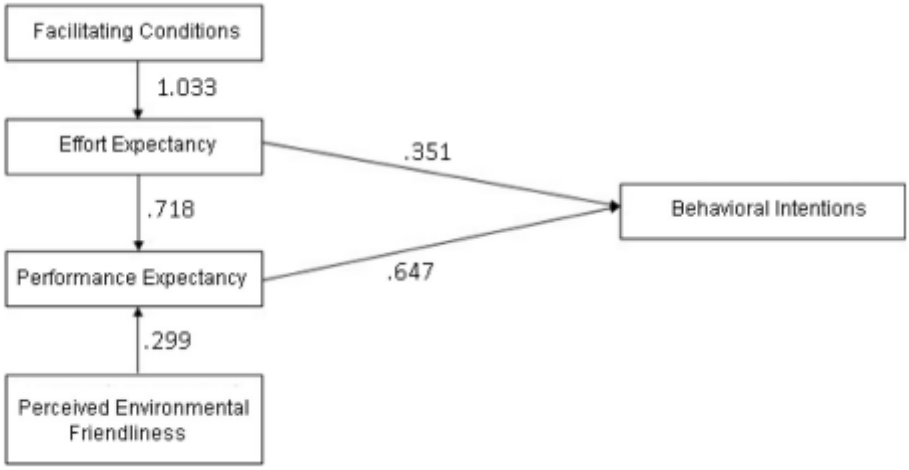

Figure 1. Unified Theory of Acceptance and Use of Technology
Source: Fleury et al., 2017, p. 224

Corporate carsharing, as a new form of shared mobility, is often referred to as business or commercial carsharing. It involves the organized and communal use of one or more vehicles by employees of a company or authority. The concept of corporate carsharing can be categorized under corporate mobility, which is defined as the provision of transportation means by the employer or other external companies through, for example, shuttle or carsharing services for employees (Amaral et al., 2021). The overarching goal of corporate carsharing is to achieve economic and ecological savings through more efficient vehicle utilization. Unlike conventional carsharing, corporate carsharing integrates the vehicles into the fleet management of the company or authority. The sharing process works similarly to conventional public carsharing, meaning an employee books a vehicle online, for example, via an app, for a specific period and makes it available to the next employee after the booking ends. Depending on the company or authority, the vehicle can also be made available to the employee for private use and then, for example, be settled via the payroll (Schwieger, Theißen & Strübing, 2014; Rid et al., 2018). The main advantage for businesses is the reduction in costs (Brunner & Ochs, 2014; Schwieger, Theißen & Strübing, 2014; Linnhoff-Popien, Zaddach & Grahl, 2015). According to SIXT (2021) and Alphabet (2021), intelligent fleet management can save up to 70% of mobility costs, as, for example, additional refinancing of the vehicles is possible through employees' private use. Lastly, it is worth mentioning that the introduction of a corporate carsharing offering can also have a positive effect on the company's or authority's image. Bittner-Fesseler and Leben (2017) show that sustainability efforts can positively impact employees' attachment to the company, as sustainable actions are becoming increasingly important to employees. Additionally, a study by McKinsey & Company (2021) shows that sustainability efforts are economically sensible for companies, promising revenue increases and cost savings.

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1.2 Research question and research objectives

To discuss the research question, it is relevant to examine the underlying constructs in greater depth. In the literature, the variable of performance expectancy is defined as the degree to which a person believes that using a system will help improve their job performance (Venkatesh et al., 2003). In the context of corporate carsharing, this means the extent to which the respondent believes that the corporate carsharing offer is useful in meeting the mobility needs within the company (Fleury et al., 2017; Curtale, Liao & van der Waerden, 2021). If the customer perceives a benefit from the corporate carsharing offer, this will also increase their acceptance (Tran et al., 2019). For example, studies by Carrese (2018) and De Luca & de Pace (2014) show that carsharing can help travelers with trip planning, save time, and meet vehicle needs, which in turn improves job performance. Notably, the study by Fleury et al. (2017) is highlighted, as it already found a significant positive relationship between performance expectancy and the intention to use a corporate carsharing offer. From this, the first research objective can be derived:

Research Objective 1 (FZ1): Determination of the benefits that the corporate carsharing offer of Deer GmbH provides to the customer.

In a second step, the construct of effort expectancy will be examined more closely. It is defined as the degree of ease associated with using a system (Venkatesh et al., 2003; Fleury et al., 2017). Therefore, the system should be successfully usable with minimal effort. In this context, it is also referred to as user-friendliness (Vlassenroot et al., 2010). In the context of corporate carsharing, this refers to the extent to which the customer perceives the use of corporate carsharing as easy and intuitive (Curtale, Liao & van der Waerden, 2021). This means that if the offer is perceived as easy to use and intuitive, the acceptance of use by individuals will increase accordingly (Tran et al., 2019). A significant factor here could be the user-friendliness of the app and the charging process. Additionally, the operation of the electric vehicle itself and the handling of billing can also play a role.

From this, the second research objective (FZ2) emerges:

Research Objective 2 (FZ2): Determination of how customers evaluate the user-friendliness of the corporate carsharing offer of Deer GmbH.

The next construct is facilitating conditions. In the literature, this is defined as the degree to which a person believes that the organizational and technical resources necessary for system use are available (Venkatesh et al., 2003; Fleury et al., 2017). In the context of corporate carsharing, it pertains to the aspects of the technological and/or organizational environment aimed at reducing usage barriers. Organizational resources could include the availability of support personnel who assist users with technology. Technical resources in this context could refer to factors such as internet availability (Bergeron, Rivard & Serre, 1990). Therefore, users evaluate the carsharing service as easier if conditions facilitate this. For example, this could involve receiving assistance through guidance or training during initial service use and having access to a call center for support when encountering difficulties (Fleury et al., 2017).

From this, the third research objective (FZ3) is derived:

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Research Objective 3 (FZ3): Determination of the conditions that facilitate the use of the corporate carsharing offer of Deer GmbH for the customer.

Another construct is perceived environmental friendliness. In the literature, this is defined as the degree to which a customer perceives a service as environmentally friendly. Fleury et al. (2017) found in their quantitative study that perceived environmental friendliness influences technology acceptance through the mediation of performance expectancy. Accordingly, respondents found the carsharing offer more useful when it is easy to use and environmentally friendly. Additionally, Schaefers (2013) discovered in a qualitative study that vehicle characteristics such as size and fuel efficiency, as well as the opportunity to avoid owning a private car, are important to carsharing customers. Based on these considerations, the following research objective can be derived:

Research Objective 4 (FZ4): Determination of how customers perceive the corporate carsharing offer of Deer GmbH as environmentally friendly.

The construct of value for money will also be closely examined in this study. In the literature, this is defined as the customer's cognitive evaluation between the perceived benefits of using the application and its costs (Venkatesh et al., 2012). Especially in consumer contexts, an acceptable price level plays a central role in achieving the best possible value. Therefore, in the context of corporate carsharing, value for money is high when the perceived benefits of the corporate carsharing offer outweigh the associated monetary costs for the customer. For example, by using the corporate carsharing offer, the customer enjoys significantly higher flexibility since they no longer need to allocate time for maintenance, refueling, depreciation, insurance, or parking (Ackermann, 2021; Carsharing e.V., 2021). Based on these considerations, the fifth research objective is formulated:

Research Objective 5 (FZ5): Determination of the value for money that the corporate carsharing offer of Deer GmbH provides to the customer compared to its perceived benefits.

Since usage intention represents the dependent variable in the UTAUT, it seems sensible to consider it in this research as well (e.g., Venkatesh et al., 2012; Fleury et al., 2017). It refers to the assessment of whether one expects to perform an action in the future or not (Fishbein & Azjen, 1975). In the context of the corporate carsharing offer of Deer GmbH, this means assessing whether the customer intends to use the offer in the future. Therefore, it is particularly relevant to investigate how customers envision their future use of the service to ensure the continued success of the corporate carsharing offer.

From this, the sixth research objective is derived:
Research Objective 6 (FZ6): Determination of the expectations and anticipations that customers have regarding the future use of the corporate carsharing offer of Deer GmbH.

Through the qualitative study design that underpins this research, it will also be investigated whether additional constructs are significant for the acceptance of the corporate carsharing offer

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of Deer GmbH. This aims to address the observation by Vogelsang, Steinhüser, and Hopper (2013) that there is a major limitation in quantitative technology acceptance research, as it does not account for new constructs beyond the existing model.

From this, the final research objective is derived:

Research Objective 7 (FZ7): Determination of further significant constructs that influence the acceptance of the corporate carsharing offer of Deer GmbH.

2. Research methodology

2.1 Participant Characteristics

The target population of the present research consists of all customers of Deer GmbH who currently use or have used the corporate carsharing offer. Due to reliance on commitments to conduct the study, recruiting customers proved to be rather challenging. Therefore, customers were recruited through arbitrary selection, meaning participants were chosen based on their availability without specific systematic criteria. In total, N = 20 customers were approached to participate in the study, comprising eight private sector companies and twelve government agencies. Ultimately, n = 6 customers participated in this study, all of whom have been using the corporate carsharing offer of Deer GmbH for approximately six months. Thus, the response rate was 33%. This number appears adequate and economically feasible for a qualitative study. The number of employees in the individual companies varies significantly, ranging from 10 to 11,000 employees. Similarly, the size of the participant pool varies widely across different companies in terms of their use of the corporate carsharing offer of Deer GmbH (see Table 1).

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Table 1. Sample characteristics

Customer	Mobility Concept of Deer GmbH	Total Number of Employees	Number Of Employees Using Deer GmbH's Corporate Carsharing Offer	Company-Owned Vehicle Fleet
Company 1 (K01)	First Mobility Concept: Hourly and daily booking of the public e-carsharing fleet	550	15	6 combustion vehicles
Company 2 (K02)	First Mobility Concept: Anchor rental, fixed booking of vehicles at fixed times	45	6	1 old electric vehicle, 1 e-bike
Company 3 (K03)	First Mobility Concept: Hourly and daily booking of the public e-carsharing fleet	90	12	1 large electric vehicle
Company 4 (K04)	First Mobility Concept: Anchor rental, fixed booking of vehicles at fixed times	200	100	2 electric vehicles, 3 combustion vehicles
Company 5 (K05)	Second Mobility Concept: Internal corporate carsharing offer	11.000	11	n/a
Company 6 (K06)	First Mobility Concept: Hourly and daily booking of the public e-carsharing fleet	10	4	3 combustion vehicles

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2.2Research Design

To answer the research question, this study conducts semi-structured guided interviews. Guided interviews represent a survey technique in qualitative social research (Ring & Erp, 1992). A qualitative research design seems sensible and appropriate for the following reasons: First, this methodology allows the identification of additional factors relevant to the acceptance of a corporate carsharing offer that go beyond the current UTAUT model. These factors would have been difficult to capture using a quantitative approach (Kidd, 2002). Additionally, the aim of this study is to gain deeper insights into the decision-making criteria and motivational structures of customers regarding the corporate carsharing offer.

A semi-structured interview guide was used to investigate the research question and objectives. The preformulated research question and objectives served as the basis for developing the interview guide. Based on these, different thematic sections were created within the interview guide. Entry questions were developed for these sections. As proposed by Gläser and Laudel (2006), these were formulated as prompts to encourage participants to respond as openly and in detail as possible. Subsequently, detailed interview questions on the respective clearly defined thematic areas were asked. The constructs of performance expectancy, effort expectancy, facilitating conditions, and price value were measured on a five-point scale from 1: 'Very good' to 5: 'Very bad'. The interviews were then evaluated using qualitative content analysis according to Mayring (2015), as his evaluation technique has become the standard method in recent years.

2.3Definition of the category system

The categories of this research work were derived deductively based on the theoretical background and then specified deductively. The categories were defined in such a way that they are suitable for answering the research question and verifying the research objectives. A total of 15 categories were established for the content analysis of the transcribed interviews. For example, the first category, Performance Expectancy, includes all statements about the perceived benefit of the corporate carsharing offer. The second category, Effort Expectancy, includes all statements related to the user-friendliness of the corporate carsharing offer. Additionally, Facilitating Conditions are defined as a superordinate category, which is divided into the subcategories Technological Resources and Organizational Resources. The superordinate category Perceived Environmental Friendliness is further divided into the subcategories General Sustainability and Environmental Awareness. The last two categories of the category system are Price Value and Usage Intention. During the material analysis process, the following categories were inductively adjusted and expanded with new insights: For better evaluation, the category Effort Expectancy was divided into the subcategories Registration Process, Vehicle Usage, and App. The Price Value category was subdivided into the subcategories General Corporate Carsharing Offer, Quarterly Evaluation, and Carsharing Technology for Electric Vehicles. Additionally, the category system was expanded to include the categories Driving Pleasure, Perceived Innovation Capability, and Corporate Culture.

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Table 2. Definition of the category system

No.	Category	Subcategory	Coding	Coding Instructions
1	Performance Expectation		Open	Statements about the perceived benefits of the Corporate Carsharing offer.
2	Effort Expectation	Registration Process	Open	Statements about the user-friendliness of the registration process.
3		Vehicle Usage	Open	Statements about the user-friendliness of vehicle usage.
4		"deer e-carsharing" App	Open	Statements about the user-friendliness of the "deer e-carsharing" app.
5	Facilitating Conditions	Technological Resources	Open	Statements about technological resources that facilitate the use of the Corporate Carsharing offer.
6		Organizational Resources	Open	Statements about organizational resources that facilitate the use of the Corporate Carsharing offer.
7	Perceived Environmental Friendliness	General Sustainability	Open	Statements about the generally perceived sustainability of the Corporate Carsharing offer.
8		Environmental Awareness	Open	Statements about the environmental awareness of employees in connection with the Corporate Carsharing offer.
9	Value for Money	General Corporate Carsharing Offer	Open	Statements about the perceived benefits of the Corporate Carsharing offer in general relative to its monetary costs.
10		Quarterly Evaluation	Open	Statements about the perceived benefits of quarterly evaluation relative to its monetary costs.
11		Carsharing Technology for EVs	Open	Statements about the perceived benefits of carsharing technology for electric vehicles relative to its monetary costs.
12	Usage Intention		Open	Statements about the anticipated future usage intention of the Corporate Carsharing offer.

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13	Driving Pleasure		Open	Statements about the driving pleasure with the Corporate Carsharing vehicles.
14	Perceived Innovativeness		Open	Statements about the perceived innovativeness of the Corporate Carsharing offer.
15	Corporate Culture		Open	Statements about the created corporate culture during the introduction of the Corporate Carsharing offer.

3. Results and discussions

Regarding the current findings on UTAUT, it has been shown that performance expectation, effort expectation, facilitating conditions, perceived environmental friendliness, value for money, and usage intention were also well-suited constructs for this qualitative research work to investigate the underlying research question.

According to Fleury et al. (2017), effort expectation is the strongest predictor of usage intention. However, the results of this study show that respondents frequently refer to performance expectation. Overall, the respondents indicate that the mobility needs can be well met by the Corporate Carsharing offer (M = 2.5; SD = 0.8). The respondents report that their company's mobility needs can be better met since the introduction of the mobility offer. Additionally, the Corporate Carsharing benefits the company's image. In this context, higher vehicle utilization, flexibility, and improved coverage of corporate mobility needs are often mentioned. This suggests that performance expectation, as in the studies by Tran et al. (2019) and Venkatesh et al. (2003), is the strongest predictor of usage intention. According to Cristescu, Schick & Reichsöllner (2021), corporate mobility is expanded through Corporate Carsharing, which better meets mobility needs while reducing or even replacing the company's own vehicle fleet. Corporate Carsharing vehicles are more suitable for shorter business trips. This pattern is also evident among the surveyed customers in this research work. Similar to the study by McKinsey & Company (2021), it is also noted that the interviewees report a positive effect of the Corporate Carsharing offer on the company's image.

Furthermore, with regard to effort expectation, which is divided into the subcategories registration process, "deer e-carsharing" app, and vehicle usage, it is shown that digitization makes booking trips easier for the surveyed customers. Cristescu, Schick & Reichsöllner (2021) also found in their pilot study that automated booking reduces time loss and error susceptibility compared to manual booking. However, the connection to public infrastructure also plays a central role in the successful design of corporate mobility. This finding can also be confirmed in this study. Thus, an intuitive use of the app requires the integration of other modes of transportation to enable combined corporate mobility and better meet the mobility needs of users. Regarding the registration process, it can be said that it is generally rated as user-friendly (M =

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1.83; SD = 0.69). Furthermore, the surveyed customers report that employees who are less technology-savvy have more frequent problems with operating the app or electric vehicles, especially at the beginning. This suggests that continuous use of Corporate Carsharing could lead to a change in the assessment of effort expectation. Since both Venkatesh et al. (2003) and Hartwich et al. (2019) found that experience is an important moderating variable in the UTAUT model, it could be worthwhile to investigate this using a longitudinal study.

Regarding the construct of facilitating conditions, all respondents state that they have the necessary technical resources to use the Corporate Carsharing offer. Three of the companies provide all or at least the majority of their employees with a smartphone and/or a tablet, through which the app can be downloaded. In the area of organizational resources, the support service was generally rated positively (M = 1.58; SD = 0.73). The respondents particularly appreciate the quick availability and solution-oriented support of the support service. It was noted that an interface function to other mobility offers would be desirable to facilitate travel planning from point A to point B.

With regard to the construct of perceived environmental friendliness, a rather heterogeneous picture emerges. Half of the surveyed customers have a clearly formulated sustainability strategy, which is why they also have specific ecological expectations for the corporate carsharing offer. The other half report that they plan to define a clear sustainability strategy in the future. However, all respondents state that environmental aspects played a central role in the decision for the corporate carsharing offer. While Fleury et al. (2017) found only a minor influence of perceived environmental friendliness on the intention to use, it can be assumed that environmental aspects have gained more importance in light of the increasing sustainability debate and the associated EU regulations. While the qualitative study results of Schaefers (2013) show that the environmental motive can be considered an altruistic motive, it can be assumed that the environmental aspect is increasingly developing into a utilitarian motive. Whether this is true should be the subject of future research.

In comparison to the study conducted by Fleury et al. (2017), this research also investigated the role of the construct of value for money in the acceptance of corporate carsharing. A majority of respondents repeatedly mention in this context that higher vehicle utilization can save costs and reduce fixed costs through the offer. However, it is also mentioned that the offer has not yet been sufficiently economically utilized. The reasons for this are mainly the still expandable charging infrastructure and the still low usage by employees. Compared to the study by Kapser and Abdelrahmen (2020), it can be assumed that while the construct of value for money does have an influence on the intention to use, it does not represent the strongest predictor. This should be investigated in further quantitative research studies.

Furthermore, the results of this research show, in comparison to previous UTAUT studies on a carsharing offer (e.g., Fleury et al., 2017; Curtale, Liao & van der Waerden, 2021), that the

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variables of driving pleasure, corporate culture, and perceived innovation capability are additional important constructs that can influence the acceptance of a carsharing offer.

Overall, the following three additional constructs were identified to better explain the acceptance of the corporate carsharing offer: *driving pleasure, perceived innovation capability, and corporate culture*.

Regarding driving pleasure, users repeatedly mention the joy and enjoyment they experience while using the corporate carsharing service. In this context, the study by Madigan et al. (2017) is noteworthy. The researchers found that hedonic motivation is the strongest predictor of acceptance for automated traffic systems. Similarly, Kapser and Abdelrahmen (2020) found a significant influence of hedonic motivation on the acceptance of autonomous delivery vehicles in their research. Hedonic motivation is defined as the fun or pleasure derived from using a technology (Venkatesh et al., 2012). Against this background, it seems particularly sensible to examine the influence of the driving pleasure construct on the acceptance of a corporate carsharing offer in future quantitative studies.

Regarding perceived innovation capability, respondents report that corporate carsharing represents something new for the company, allowing differentiation from others. Previous research on UTAUT has found that consumers' innovation capability moderates the relationship between performance expectancy, effort expectancy, and social influence with the purchase intention of autonomous vehicles. The effect of the moderating variable is stronger the higher the consumers' innovation capability. In this context, however, it is the consumers' own innovation readiness that is meant, i.e., their need for independence from others and for uniqueness (Leicht, Chtourou & Youssef, 2018). For further research, it seems sensible to investigate the innovation capability of the product, i.e., what influence the perceived innovation capability of corporate carsharing has on the acceptance variable.

Furthermore, the results of this research show that corporate culture plays a central role in the acceptance of the corporate carsharing offer. Vogelsang, Steinhüser, and Hopper (2013), as well as Hirschheim (2007), recognize the relevance of the work environment and the influence of the company to better explain technology acceptance. Corporate culture has hardly been considered in previous studies, or only in a shortened form as part of facilitating conditions (e.g., Venkatesh & Bala, 2008). However, facilitating conditions encompass the entire primary infrastructure, so corporate culture should be applied as a separate construct in future research. Cristescu, Schick & Reichsöllner (2021) also found that corporate culture plays a significant role in corporate mobility. Their study points out that successful corporate mobility design requires it to be firmly anchored in corporate structures. Clear processes must be defined, and employees must be continuously involved. A clear information campaign should educate and engage employees about corporate mobility through multiple communication channels. Simultaneously, the needs and desires of the employees must be continuously surveyed and evaluated.

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In the present study, significant results were achieved in the field of corporate mobility research, identifying key factors crucial for the acceptance of a corporate carsharing offering. Regarding previous findings on UTAUT, it was shown that performance expectancy, effort expectancy, facilitating conditions, perceived environmental friendliness, cost-effectiveness, and usage intention were also well-suited constructs for investigating the underlying research question in this qualitative study. Additionally, three further constructs—driving pleasure, perceived innovation capability, and corporate culture—were identified, which can be quantitatively researched within the framework of UTAUT in the next step.

Overall, the study shows a high acceptance of Deer GmbH's corporate carsharing offering. Customers appreciate the flexibility, sustainability, and user-friendly app. To further increase acceptance and position itself as a leading e-carsharing provider, several improvements should be made. First, expanding the charging infrastructure is essential, particularly by creating more charging points and integrating alternative propulsion methods such as hydrogen. Flexible mobility solutions that combine internal offerings with the flexible use of the public fleet are also necessary. To remain financially attractive, Deer GmbH should reconsider its pricing structure and introduce incentives like bonuses for sustainable usage.

A detailed analysis of individual mobility needs and collaboration with specialized providers are recommended to offer tailored solutions. Intensified customer support through regular training and provision of informational material can further lower usage barriers. Additionally, the mobility strategy should be firmly integrated into the corporate structure to ensure long-term acceptance.

Finally, Deer GmbH could take on a stronger advisory role, especially in supporting customers regarding sustainability goals and environmental certifications. These measures would significantly highlight the added value of Deer GmbH's corporate carsharing offering and contribute to promoting sustainable mobility.

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Table 3. Mean value and standard deviation

Category	Subcategory	Rating (M)	Standard Deviation (SD)
Performance Expectation	Mobility Needs	2,5	0,8
Performance Expectation	Registration Process	1,83	0,69
Organizational Resources	Support Service	1,58	0,73
Value for Money	General Corporate Carsharing Offer	2,25	0,99

4. Limitations and Criticism

The present study successfully provides an initial explanatory approach to how a corporate carsharing offering must be designed to achieve maximum customer acceptance. It is also positive to note that the sample is realistic, countering the criticism by Williams, Rana, and Dwivedi (2015), which states that a major limitation of UTAUT is that it is mainly studied among students. Additionally, the fact that the study was conducted in Germany is positive, addressing the dominance of data collection in the USA (Lee et al., 2003). Given that UTAUT has primarily been applied in areas such as e-government, e-banking, e-learning, and e-commerce, examining corporate carsharing provides another meaningful area for UTAUT research. It is also noteworthy that this research is based on a qualitative research design and was evaluated using the software MAXQDA 2020. Previously, UTAUT has predominantly been studied using quantitative methods and SPSS software (Williams, Rana & Dwivedi, 2015).

However, it is critical to note that only six out of a total of 20 customers could be interviewed. It is questionable whether repeating the study with customers who did not participate would yield the same or similar results. Additionally, it is conceivable that the results might significantly differ if the study were repeated with potential customers who do not yet use Deer GmbH's corporate carsharing offering. Furthermore, there was a varying level of information among the respondents regarding corporate carsharing. While some customers were very well informed about using corporate carsharing in their company, others could not answer all questions. Another disadvantage is the high social control exerted by the interviewer, likely leading to socially desirable responses from customers. Interviewer effects and sponsorship effects cannot be excluded either. The former refers to the interviewer's characteristics, such as dialect or gender, potentially causing significant biases in the interviewees' responses. For instance, a male interviewer might have received different answers compared to the female interviewer. The sponsorship effect implies that respondents might answer differently once they realize who commissioned the study (Brosius, Haas & Koschel, 2012). It cannot be ruled out that the interviewees tried to respond in a way that they believed would please Deer GmbH, the study's sponsor.

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Additionally, the reliability of this study was not verified. Therefore, it is conceivable that another person might categorize the transcript excerpts differently than the first person (intercoder reliability). It is also possible that the same person might categorize the transcript excerpts differently after some time (intracoder reliability). Finally, it should be noted that the study was conducted as a cross-sectional survey. Thus, the results are only valid for the time of data collection and cannot be generalized to other time points.

5. Conclusion

Against the backdrop of the limited research on the acceptance of corporate carsharing and the increasing demands on corporate mobility, a closer examination of Deer GmbH's corporate carsharing offer seems particularly timely and relevant. In this study, significant results were achieved for research in the field of corporate mobility, identifying key factors crucial for the acceptance of a corporate carsharing offer. The study's findings address many of the aspects discussed in the literature on technology acceptance research (e.g., Venkatesh et al., 2003; Venkatesh et al., 2012; Fleury et al., 2017, Hartwich et al., 2019; Tran et al., 2019; Curtale, Liao & van der Waerden, 2021). This research provides comprehensive information on the factors of corporate carsharing that need improvement concerning the constructs of performance expectation, effort expectation, facilitating conditions, perceived environmental friendliness, and value for money. Considering these aspects enables a better response to the needs and wishes of customers in the future, thereby achieving maximum acceptance for the corporate carsharing offer.

Overall, the results of this study provide valuable insights into the still underexplored area of corporate carsharing acceptance. However, it is critical to note the relatively small sample size on which this research is based. Therefore, it cannot be ruled out that repeating the study with other customers and potential customers could yield different results. Moreover, the data were collected cross-sectionally, meaning the results are only valid for the time of collection.

Since corporate carsharing is still a very new business model, further research of this kind is urgently needed. Future quantitative studies should definitely examine and verify the relationship between the new constructs identified in this study and the acceptance variable. Simultaneously, future studies should re-examine the results of this study. It would be sensible to collect similar data in the future using a quantitative longitudinal design. Additionally, more customers and potential customers should be surveyed to generate a more comprehensive picture of the usage motives concerning corporate carsharing. Ultimately, it is essential to note that this work has laid another important milestone in advancing the transformation of corporate mobility towards more sustainable mobility.

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References

Ackermann, M. (2021). Mobility-as-a-Service: The Convergence of Automotive and Mobility Industries. Springer eBook Collection. Cham: Springer. Retrieved from https://link.springer.com/book/10.1007/978-3-030-75590-4 https://doi.org/10.1007/978-3-030-75590-4 (Accessed: 02 November 2021)

Alphabet (2021). Nachhaltige Mobilitätslösungen für Ihr Unternehmen. Retrieved from https://www.alphabet.com/de-de (Accessed: 16 November 2021)

Amaral, A., Barreto, L., Pereira, T., & Baltazar, S. (2021). Towards the Adoption of Corporate Mobility as a Service (CMaaS): A Case Study. In Nathanail, E.G., Adamos, G. & Karakikes, I. (Eds.), Advances in Intelligent Systems and Computing. Advances in Mobility-as-a-Service Systems (Vol. 1278, pp. 316–325). Cham: Springer. https://doi.org/10.1007/978-3-030-61075-3_31

Bergeron, F., Rivard, S., & Serre, L. de (1990). Investigating the Support Role of the Information Center. MIS Quarterly, 14(3), 247. https://doi.org/10.2307/248887

Bittner-Fesseler, A., & Leben, B. (2017). Nachhaltiges Wirtschaften in der Kommunikation von Start-ups: CSR als Chance für junge Unternehmen. In Gordon, G. & Nelke, A. (Eds.), Management-Reihe Corporate Social Responsibility. CSR und Nachhaltige Innovation (pp. 39–53). Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-49952-8_4 (Accessed: 08 November 2021)

Brunner, A., & Ochs, V. (2015). Umweltbewusster Weg zur Arbeit – Wie können die Unternehmen den Arbeitsweg ihrer Mitarbeiter nachhaltig gestalten?, 114–121. Retrieved from https://opus.htwg-konstanz.de/frontdoor/deliver/index/docId/307/file/nachhaltigkeit_industr_umfeld_konferenzband_20160127.pdf#page=115

Carrese, S., Giacchetti, T., Nigro, M., & Patella, S. M. (2017). An innovative carsharing electric vehicle system: an italian experience. In Brebbia, C. A. & Ricci, S. (Eds.), WIT Transactions on The Built Environment, Urban Transport XXIII (pp. 245–252). WIT PressSouthampton UK. https://doi.org/10.2495/UT170211

Cristescu, A., Schick, S., & Reichsöllner, E. (2021). Leitfaden der nachhaltigen betrieblichen Mobilität: Praxistipps und Handlungsempfehlungen aus. Fraunhofer-Institut für Arbeitswirtschaft und Organisation (IAO)

Curtale, R., Liao, F., & van der Waerden, P. (2021). User acceptance of electric car-sharing services: The case of the Netherlands. Transportation Research Part a: Policy and Practice, 149, 266–282. https://doi.org/10.1016/j.tra.2021.05.006

Deer GmbH (2023). Deer e-Carsahring. Retrieved from https://www.deer-mobility.de/ (Accessed: 10 November 2023)

Europäische Kommission (2021). Übereinkommen von Paris. Retrieved from https://ec.europa.eu/clima/eu-action/international-action-climate-change/climate-negotiations/paris (Accessed: 05 November 2021)

Fishbein, M., & Ajzen, I. (1975). Belief, attitude, intention and behaviour: An introduction to theory and research (Vol. 27).

Vol. 9, No. 04; 2024

ISSN: 2456-3676

Fleury, S., Tom, A., Jamet, E., & Colas-Maheux, E. (2017). What drives corporate carsharing acceptance? A French case study. Transportation Research Part F: Traffic Psychology and Behaviour, 45, 218–227. https://doi.org/10.1016/j.trf.2016.12.004

Gläser, J., & Laudel, G. (2006). Experteninterviews und qualitative Inhaltsanalyse als Instrumente rekonstruierender Untersuchungen (2., durchges. Aufl.). Lehrbuch. Wiesbaden: VS Verlag für Sozialwissenschaften.

Hartwich, F., Witzlack, C., Beggiato, M., & Krems, J. F. (2019). The first impression counts – A combined driving simulator and test track study on the development of trust and acceptance of highly automated driving. Transportation Research Part F: Traffic Psychology and Behaviour, 65, 522–535. https://doi.org/10.1016/j.trf.2018.05.012

Hirschheim, R. (2007). Introduction to the Special Issue on "Quo Vadis TAM – Issues and Reflections on Technology Acceptance Research". Journal of the Association for Information Systems, 8(4), 203-205. https://aisel.aisnet.org/jais/vol8/iss4/18

https://doi.org/10.1080/07421222.1999.11518247

Kapser, S., & Abdelrahman, M. (2020). Acceptance of autonomous delivery vehicles for last-mile delivery in Germany – Extending UTAUT2 with risk perceptions. Transportation Research Part C: Emerging Technologies, 111, 210–225. https://doi.org/10.1016/j.trc.2019.12.016

Kidd, S. A. (2002). The role of qualitative research in psychological journals. Psychological Methods, 7(1), 126–138. https://doi.org/10.1037/1082-989X.7.1.126

Kollmann, T. (1998). Akzeptanz innovativer Nutzungsgüter und -systeme. Wiesbaden: Gabler Verlag. https://doi.org/10.1007/978-3-663-09235-3 (Accessed: 13 November 2021)

Lee, Y., Kozar, K. A., & Larsen, K. R. (2003). The Technology Acceptance Model: Past, Present, and Future.*Communications of the Association for Information Systems*, *12*. https://doi.org/10.17705/1CAIS.01250

Leicht, T., Chtourou, A., & Ben Youssef, K. (2018). Consumer innovativeness and intentioned autonomous car adoption. The Journal of High Technology Management Research, 29(1), 1–11. https://doi.org/10.1016/j.hitech.2018.04.001

Linnhoff-Popien, C., Zaddach, M., & Grahl, A. (2015). Marktplätze im Umbruch. Berlin, Heidelberg: Springer Berlin Heidelberg. https://doi.org/10.1007/978-3-662-43782-7 (Accessed: 02 November 2021)

Luca, S. de, & Di Pace, R. (2014). Modelling the Propensity in Adhering to a Carsharing System: A Behavioral Approach. Transportation Research Procedia, 3, 866–875. https://doi.org/10.1016/j.trpro.2014.10.065

Madigan, R., Louw, T., Wilbrink, M., Schieben, A., & Merat, N. (2017). What influences the decision to use automated public transport? Using UTAUT to understand public acceptance of automated road transport systems. Transportation Research Part F: Traffic Psychology and Behaviour, 50, 55–64. https://doi.org/10.1016/j.trf.2017.07.007

Mayring, P. (2015). Qualitative Inhaltsanalyse: Grundlagen und Techniken (12., überarb. Aufl.). Weinheim, Basel: Beltz. Retrieved from http://www.beltz.de/fileadmin/beltz/leseproben/978-3-407-25730-7.pdf (Accessed: 11 November 2021)

Vol. 9, No. 04; 2024

ISSN: 2456-3676

McKinsey & Company (2021). How companies capture the value of sustainability: Survey findings. Retrieved from https://www.mckinsey.com/business-functions/sustainability/our-insights/how-companies-capture-the-value-of-sustainability-survey-findings (Accessed: 07 November 2021)

Rid, W., Parzinger, G., Grausam, M., Müller, U., & Herdtle, C. (2018). Carsharing in Deutschland. Wiesbaden: Springer Fachmedien Wiesbaden. https://doi.org/10.1007/978-3-658-15906-1 (Accessed: 05 November 2021)

Schaefers, T. (2013). Exploring carsharing usage motives: A hierarchical means-end chain analysis. Transportation Research Part A: Policy and Practice, 47, 69–77. https://www.sciencedirect.com/science/article/abs/pii/S0965856412001632

Schwieger, B., Theißen, J., & Strübing, E. (2014). Masterplan "Shared Mobility": Car- und Ride-Sharing in der Region Hannover. Retrieved from https://www.hannover.de/Media/01-DATA-Neu/Downloads/Landeshauptstadt-Hannover/Mobilit%C3%A4t/Masterplan-Shared-Mobility2 (Accessed: 02 November 2021)

SIXT (2021). Corporate Carsharing mit Sixt. Retrieved from https://www.sixt.de/share/corporate-carsharing/#/ (Accessed: 05 November 2021)

Tran, V., Zhao, S., Diop, E. B., & Song, W. (2019). Travelers' Acceptance of Electric Carsharing Systems in Developing Countries: The Case of China. Sustainability, 11(19), 5348. https://doi.org/10.3390/su11195348

Venkatesh, Morris, & Davis (2003). User Acceptance of Information Technology: Toward a Unified View. MIS Quarterly, 27(3), 425. https://doi.org/10.2307/30036540

Venkatesh, Thong, & Xu (2012). Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. MIS Quarterly, 36(1), 157. https://doi.org/10.2307/41410412

Vlassenroot, S., Brookhuis, K., Marchau, V., & Witlox, F. (2010). Towards defining a unified concept for the acceptability of Intelligent Transport Systems (ITS): A conceptual analysis based on the case of Intelligent Speed Adaptation (ISA). Transportation Research Part F: Traffic Psychology and Behaviour, 13(3), 164–178. https://doi.org/10.1016/j.trf.2010.02.001

Vogelsang, K., Steinhüser, M., & Hoppe, U. (2013). Theorieentwicklung in der Akzeptanzforschung: Entwicklung eines Modells auf Basis einer qualitativen Studie.

Williams, M. D., Rana, N. P., & Dwivedi, Y. K. (2015). The unified theory of acceptance and use of technology (UTAUT): a literature review. Journal of Enterprise Information Management, 28(3), 443–488. https://doi.org/10.1108/JEIM-09-2014-0088

Zhu, G., Zheng, J., & Chen, Y. (2021). Acceptance of free-floating car sharing: A decomposed self-efficacy-based value adoption model. Transportation Letters. https://doi.org/10.1080/19427867.2021.1903132