Where Do You Want to Go Today: Understanding the Adoption of IS-Enabled Business Trip Ridesharing Services

Completed Research

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Abstract

Given the transportation sector’s significant contribution to greenhouse gas emissions, Business Trip Ridesharing (BTRS) is likely to become increasingly important as both policy and economic considerations require a rethinking within companies. With our study, we adapt the Theory of Planned Behavior to the BTRS context and add to the understanding of BTRS by examining employees’ behavioral antecedents. In exploring employees’ motivations for BTRS, we demonstrate an improved comprehension of the relevant factors under consideration for a successful introduction of BTRS. Our findings suggest the importance of attitude and perceived behavioral control on BTRS behavioral intention and adoption. Furthermore, mediation analyses revealed an important role of Green Information Systems (GIS) as enabler for BTRS and strengthens the importance of BTRS for the GIS community.

Keywords

Business Trip Ridesharing, Green IS, Sustainability, Mobility-as-a-Service

Introduction

Worldwide processes of change have defined the 21st century via the manifestations and technologies of mobility, especially under the light of both climate and environmental policy requirements (Shaheen and Cohen 2013). Consequently, the request for innovative sustainable mobility solutions in order to replace individual transportation modes has recently increased. Green Information Systems (GIS) research aims at analyzing Information System (IS) artifacts and their influence on a more sustainable behavior of individuals, organizations or societies (Brendel et al. 2018; Melville 2010). However, overall IS research in context of sustainable mobility is still very sparse (Brendel and Mandrella 2016). In the case of GIS, the use of alternative mobility services enabled or facilitated by mobile GIS may be a solution of increasing availability, with a prime example being ridesharing (Furuhatu et al. 2013). Its increasing prevalence has attracted corporate interest in adapting the concepts into modern corporate mobility management for optimizing own transportation processes and needs on a company-level (ib.). Business Trip Ridesharing (BTRS) is an applicable method for reducing the climate impact of business trips and commuting, by primarily raising the transport efficiency (e.g. more passengers per vehicle). Unlike private ridesharing, monetary savings do not exist for BTRS, with company car business travels being paid for by the employer. Further, simple app usage itself does not necessarily translate to actually sharing rides. Thus, BTRS in itself does not provide for palpable extrinsic motivations, especially since drivers invest additional time to pick up colleagues. In this article, we examine the antecedents of employees’ participation behavior in BTRS, as
well as the role GIS play. Thus, a comprehensive approach following the Theory of Planned Behavior (TPB) allows to understand the endorsement of IS-enabled BTRS services by analyzing employee’s individual behavior formation. Hence, our guiding research questions are:

**RQ1: What are the antecedents of employees’ participation behavior in BTRS?**  
**RQ2: Which role do GIS play regarding employees’ participation behavior in BTRS?**

**Theoretical Background**

**Business Trip Ridesharing**

Ridesharing can be defined as the sharing of a vehicle for the transport of people from one place to another. Within the area of sustainable mobility, ridesharing has gained an increasing amount of attention as of late, by both policy-makers and researchers alike (Schmaul et al. 2017). Ridesharing is primarily concerned with saving natural resources by increasing the utilization of vehicles and helping to reduce the number of road-bound transport. However, financial gains have been of less consideration (Agatz et al. 2011; Tsao et al. 1999). In this paper, BTRS is defined as two or more employees taking business trips or commuting together in a private or company car, with the entirety of the trip’s costs paid for by the company (Zhou et al. 2012). A modern phenomenon in this context are “ridematching platform partnerships”, where ridematching software platforms are licensed by companies in order to make BTRS more attractive and save own development and implementation efforts (Chan and Shaheen 2012). In the majority of BTRS settings, business trips are free of charge for employees (or only paid on a fixed basis, e.g. via certain taxations), thus available incentives from private ridesharing, like sharing the fuel costs, likely represent no motivation in BTRS anymore.

**Theory of Planned Behavior**

The TPB (Ajzen 1991) is a commonly applied socio-psychological theory on the effect of certain attitudes towards (travel) behavior (e.g. Heath and Gifford 2002). Besides the constructs attitude and subjective norm, which stem from Theory of Reasoned Action, the TPB also includes the aspect of perceived behavior control, i.e. how individuals view their relative control over their own behavior in certain situations (Ajzen 1991). Due to this, individuals may be willing to behave in a specific way but are unable to do so. This can be due to lack of factors such as the availability of opportunities or necessary resources such as time or money. This circumstance is described by the construct of perceived behavioral control. It refers to the personal perception of the degree to which it is easy or difficult to perform a particular behavior. A perception such as this can be different depending on the situation at hand. In combination with the behavioral intention, the perceived behavioral control has the ability to predict the achievement or implementation of a certain behavior. Thus, a mental comparison is initiated between the three dimensions of skills, prerequisites and resources required for the action and one’s own capabilities in these three dimensions. In assessing how difficult it is to gain control over a situation and their individual behaviors, individuals draw upon their own experience, as well as anticipated implementation challenges. Both experiences and challenges are considered as internal (e.g. personal skills) or external (e.g. time constraints) influencing factors (Ajzen 1991; Bandura 1982). In summary, TPB offers a suitable initial framework for researching mobility behavior, particularly because the theory contains the central predictors for explaining mobility behavior and is parsimonious enough to be implemented with reasonable effort (Haustein and Hunecke 2007).

**Research Approach and Hypothesis Development**

**Research Model**

The proposed research model (presented in Figure 1) is based on the TPB, thus comprising the following constructs: attitude, subjective norm and perceived behavioral control (Ajzen 1991). The TPB has established itself as a convincing social-cognitive framework, in order to explain situation-specific influences on intentional behavior.
**Influence of Theory of Planned Behavior on Business Trip Ridesharing**

**Attitude**

The attitude construct is determined by the subjective assessment and perception or opinion of an individual, which in turn is the result of evaluating the consequences of a demonstrated behavior and considering whether it is perceived as beneficial or not. Consequently, the individual attitude describes individuals positive or negative feelings influenced, for instance, by their former experiences or belief formations (Fishbein and Ajzen 1975). In our study, the attitude toward participation in BTRS is conceptualized as employee's assessment of whether the usage of BTRS is considered favorable or unfavorable. Previous research reported the effects of attitudes on the intention (e.g. Hsu and Chiu 2004) and, henceforth, the following hypothesis has been derived:

*H1: Employees' attitudes positively influence employees’ intention to use BTRS.*

**Subjective Norm**

Subjective norm can be defined as an individual's personal expectance and perception of how social peers and acquaintances approve or disapprove its behavior. It describes the perceived social pressures and the social contingencies to demonstrate a certain behavior. The construct itself is determined by normative opinion (Ajzen 1991; Fishbein and Ajzen 1975). The correlation between subjective norm and attitude could already been confirmed in numerous instances (e.g. Beek and Ajzen 1991). In our research context, subjective norm regarding BTRS participation refers to an employee’s perception of the social (peer) support to eventually form a participation intention towards BTRS:

*H2: Employees' subjective norm positively influences intention to use BTRS.*

**Perceived Behavioral Control**

Perceived behavioral control is defined as the extent to which humans believe to have the control over internal and external factors, either enabling or limiting the realization of a certain behavior (Ajzen 1991). Scholars have confirmed that perceived behavioral control can have a direct influence on behavioral intention (e.g. Lee 2009). In our research context, we adapted this notion to the employees’ perception of owning the necessary level of control over their day-to-day business life in order to use BTRS for their business travels. We assume that if employees feel very confident to use BTRS and they perceive the necessary control over their business travel modes, this stance may become a substitute for the measure of actual control and thus a direct linkage to behavior can be drawn (Ajzen 1991). Two hypotheses arise:

*H3a: Employees' perceived behavioral control positively influence employees’ intention to use BTRS.  
H3b: Employees' perceived behavioral control positively influence employees’ actual behavior using BTRS.*

**Behavioral Intention**

The behavioral intention expresses the effort an individual is willing to undertake in the pursuit of a behavior. It is therefore seen as a robust indicator for actual behavior (Venkatesh et al. 2003). We refer to the employee's intention to use BTRS as the perceived likelihood that an employee will behave or continue to use BTRS. Following De Guinea and Markus (2009), IS themselves “may also serve as an extraordinarily powerful environmental cue” (p. 441). Accordingly, we analyzed a potential mediation effect of digital BTRS services.
facilitation services (e.g. mobile BTRS applications) and hypothesize GIS to play noteworthy mediation roles between behavioral intention and BTRS behavior. Accordingly, H4a considers the role of IS as a BTRS-enabler while H4b states the direct TPB-linkage between BTRS behavioral intention and behavior:

\[H4a: \text{Employees' behavioral intention positively influences employees' actual GIS App Usage.}\]

\[H4b: \text{Employees' behavioral intention positively influences employees' BTRS Behavior.}\]

**GIS App Usage**

As BTRS faces similar challenges regarding ride-matching (i.e. the geographic and time-wise matching of drivers and riders) as private ridesharing, GIS applications may render helpful to connect drivers and passengers, e.g. via web platforms. This is a noteworthy mean since BTRS could – hypothetically – also be derived through bilateral agreements, albeit not being scalable and rather relying on accidental meet ups. Still, behavioral intention to share rides remains one of the main driving forces behind BTRS GIS. However, GIS themselves “- at the device or the feature level – may also serve as an extraordinarily powerful environmental cue” (De Guinea and Markus (2009), p. 441). This suggests GIS may have a potential and positive mediation effect between behavioral intention and actual BTRS behavior, likewise increasing the propensity of sharing rides in the real world. Two effects may be present, either pure availability of a GIS triggers BTRS real-world behavior (e.g. by reminding employees of BTRS usage) or GIS itself enables BTRS (e.g. by matching drivers and passengers), both paramounted in the following hypothesis:

\[H5: \text{Employees' GIS App Usage positively influences employees' actual behavior using BTRS.}\]

**Methodology and Operationalization**

Regarding the research context, we decided to choose employees as business travelers. We conducted our research in a German consulting company. Here, employees recently gained access to BTRS facilitation services in form of a newly introduced mobile application. With multiple business premises in Germany, this setting assures that employees have regular business travelling needs, particularly by working on-premise at their respective customers, by joining nation-wide workshops and team meetings, or by commuting to their office. A survey was created online and pre-tested by selected interviewees. After incorporating respondents feedback, our first wave of surveys were distributed to 100 employees, being closed beta testers of the app and forming the active user base of the BTRS app. Ethical standards were adhered to, permitting participants to cancel the survey at any time without consequence. After the first week, we reminded non-responding interviewees to join and complete the survey. After November 2018, a total of 53 surveys had been completed (a response rate of 53 %). For the operationalization of TPB, we contextualized previously validated and reported instruments (see Appendix). Within our research model, all variables were measured reflectively, while all items were measured on 7-point Likert scales, ranging from as low as total disagreement to as high as total agreement. The option to return back to previous pages was unavailable to interviewees, in order to prevent (socially desirable) changes of antecedent items. Additionally, the research model was controlled for three single-item measures (company tenure, gender and age). These control variables resembled a binary scale (gender), five ranges (age) and six ranges (company tenure). For measuring the impact of behavioral intention, as well as GIS App Usage on BTRS, we decided to build on the usage conceptualization of Venkatesh et al. (2012). Variables, items and their respective sources are presented in the Appendix.

**Analysis and Results**

The survey's analysis was conducted with the partial least square (PLS-SEM) method. The use of PLS acting as a structural modelling technique creates a beneficial situation by conceding the use of reflective analysis and formative analysis, in comparison to the few options when employing covariance-based analysis. PLS is only applicable when using small sample sized studies, as well as for complex models. Also, the sample was tested and defined for both common method bias and non-response. The subsequent structural model, in addition to the measurement model were likewise assessed. We applied PLS-SEM due to its ease of use, especially when handling these smaller samples, as well as its inherent ability to evaluate abnormally structured data. Moreover, PLS-SEM can map and analyze complex formative and reflective models. Moreover, PLS-SEM has potential advantages over linear regression models, separating SEM away from
being the primary method of choice for analyzing path diagrams in search of latent variables with multiple indicators (Gefen et al. 2011; Ringle et al. 2012).

**Sample characteristics, non-response and common method bias**

The average age of employees within our response sample remains between 21 and 30 (64%). Less women than men participated in our sample (24%/76%), resulting from a gender split similar to the one in our total survey sample. The respondents have been working at their respective company for one to two years on average. Therefore, most of the responding employees are younger and relatively new to their current company. To counteract biases caused by the data collection of a single informant, we enabled various procedural remedies for common method variance (Podsakoff et al. 2012). Several procedural remedies (e.g., scenario, examples, well-developed scales, benefits of participation) were employed as an ex ante measure to avert the risk of common method variance (Podsakoff et al. 2012). Additional procedural remedies included a detailed cover story displaying descriptions and examples, in addition to the usage of well-developed scales, both decreasing bias via ambiguous questioning. Respondents were additionally persuaded into replying more accurately by initially stating how much their opinion is valued, as well as instructing them there is no such thing as a wrong answer, both having demonstrated to decrease social desirability bias. Furthermore, we used the marker variable technique (Lindell and Whitney 2001) and chose willingness to learn (“continuous learning is important to me”) as the theoretically unrelated marker variable (Schwarz et al. 2017). The highest variance the marker has in common with any other focal construct is below .05. Furthermore, the correlations adjusted among the focal constructs revealed only minor change in magnitude (<.02 and not significantly). Therein it can be concluded no evidence of the presence exists of common method bias within this investigation.

**Measurement model**

<table>
<thead>
<tr>
<th></th>
<th>CR (no. of items)</th>
<th>AVE</th>
<th>APP</th>
<th>ATT</th>
<th>BIN</th>
<th>INT</th>
<th>PBC</th>
<th>SNO</th>
</tr>
</thead>
<tbody>
<tr>
<td>APP</td>
<td>.854 (4)</td>
<td>.596</td>
<td>.772</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>ATT</td>
<td>.899 (3)</td>
<td>.747</td>
<td>.417</td>
<td>.865</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BEH</td>
<td>.843 (4)</td>
<td>.576</td>
<td>.829</td>
<td>.408</td>
<td>.759</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>BIN</td>
<td>.937 (3)</td>
<td>.833</td>
<td>.601</td>
<td>.762</td>
<td>.616</td>
<td>.913</td>
<td></td>
<td></td>
</tr>
<tr>
<td>PBC</td>
<td>.860 (3)</td>
<td>.673</td>
<td>.597</td>
<td>.322</td>
<td>.602</td>
<td>.526</td>
<td>.820</td>
<td></td>
</tr>
<tr>
<td>SNO</td>
<td>.890 (2)</td>
<td>.801</td>
<td>.268</td>
<td>.579</td>
<td>.425</td>
<td>.529</td>
<td>.429</td>
<td>.895</td>
</tr>
</tbody>
</table>

**Table 1. Inter-construct correlations, CR, and AVE.** Notes (also for following tables). CR = Composite Reliability. AVE = Average Variance Extracted. APP = App Usage. ATT = Attitude. BEH = Behavior. BIN = Behavioral Intention. PBC = Perceived Behavior Control. SNO = Subjective Norms. SUS = Sustainability. The bold numbers on the leading diagonal are the square root of the AVE.

In regard to our measurement model, item should rate the loading highest in relation to given model’s construct (Fornell and Larcker 1981a). In addition, internal consistencies and item loads of reflectively modeled constructs, larger than 0.7, are regularly accepted and provided by this model. TPB variables are thus modeled as reflective constructs, and as with our model, all item rates were over the limit of 0.7. To evaluate construct validity and reliability, Table 1 demonstrates the Composite Reliability (CR) and Average Variance Extracted (AVE). Both are met, mainly because all constructs can be seen to have higher CR values than 0.7, as well as raised AVE values higher than 0.5 (Fornell and Larcker 1981b). To determine discriminant validity, Fornell-and-Larcker administer a criterion by comparing the square root of the AVE with the correlations across the constructs. Their criterion is met since all constructs have a AVE higher than that of any of their further constructs’ correlations (see Table 1) (Fornell and Larcker 1981a). The formative construct’s outer model is evaluated for the relevance of its respective factors and the threat of multicollinearity (Hair et al. 2012). All factor weights are considered significant when they have a p-value smaller than .1. AVE values (bold numbers on the leading diagonal), indicating constructs such as these meet the guidelines. This cooperatively points out to the discriminant validity of the constructs in the model. In summary, the results demonstrate the common measurement properties which our model meets. Additionally, we verified the results in search of cross-loadings. As we initially expected, all items retain higher loadings on their assigned construct in comparison to any other construct for the model (Chin 1998). The Fornell Larcker criterion and the inspection of cross loadings both display a lack of concerning results.
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for discriminant validity. We computed a variance inflation factor (VIF) and considered all focal constructs, with all VIF below 3 indicating our model estimations are stable.

**Structural model**

A bootstrapping procedure utilizing 1,000 subsamples, in order to determine the structural model, was applied for estimating the statistical significance. Via PLS estimations, primary indicators of the model fit is the R² value of the dependent construct (Hair et al. 2012). This can be seen in Figure 2, where the path coefficients indicate the contribution strength and the these path coefficients can be viewed at significant levels.

The R² value of .743 indicates that the examined antecedents describe nearly three-quarters (74%) of the variance in BTRS behavioral intention. No compelling circumstances of subjective norm could be located. A significant positive effect on BTRS behavioral intention is demonstrated by attitude, as well as perceived behavioral control. Behavioral intention significantly impacts BTRS behavior and a mediation analysis has been carried out to examine a potential mediation effect of the GIS. The structural model was controlled for the areas of the interviewee’s ages, gender and job tenure. Only company tenure showed a slightly positive, yet significant impact on BTRS behavioral (-.167, p<.01). Altogether, H1, H3b, H4a/H4b and H5 are supported, whereas for H2 no adequate and for H3b only an indirect effect was found (cf. Table 2).

![Figure 2. PLS-results. Notes. *significant at 0.1; ** significant at 0.05; *** significant at 0.01](image)

For path coefficients on behavior both direct effect and total effects (direct + mediated effects) are stated (separated by | ).

<table>
<thead>
<tr>
<th>Hypotheses</th>
<th>Path coefficient</th>
<th>Support for hypothesis</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1: Employees’ attitudes positively influence employees’ intention to use BTRS.</td>
<td>.648***</td>
<td>Supported</td>
</tr>
<tr>
<td>H2: Employees’ subjective norm positively influences intention to use BTRS.</td>
<td>.029</td>
<td>Not supported</td>
</tr>
<tr>
<td>H3a: Employees’ perceived behavioral control positively influence employees’ intention to use BTRS.</td>
<td>.306***</td>
<td>Supported</td>
</tr>
<tr>
<td>H3b: Employees’ perceived behavioral control positively influence employees’ actual behavior using BTRS.</td>
<td>Direct effect: .120</td>
<td>Not supported</td>
</tr>
<tr>
<td></td>
<td>Total effect: .299**</td>
<td>(only indirect)</td>
</tr>
<tr>
<td>H4a: Employees’ behavioral intention positively influence employees’ actual behavior of regularly using digital BTRS facilitation services.</td>
<td>.604***</td>
<td>Supported</td>
</tr>
<tr>
<td>H4b: Employees’ behavioral intention positively influence employees’ actual behavior using BTRS.</td>
<td>Direct effect: .192**</td>
<td>Supported</td>
</tr>
<tr>
<td></td>
<td>Total effect: .583***</td>
<td></td>
</tr>
<tr>
<td>H5: Employees’ GIS App Usage positively influences employees’ actual behavior using BTRS.</td>
<td>.651***</td>
<td>Supported</td>
</tr>
</tbody>
</table>

Table 2. Path coefficients for hypotheses. Notes. * significant at 0.1; ** significant at 0.05; *** significant at 0.01.

**Mediation Analysis**

To better understand the mechanism between Behavioral Intention, GIS App Usage, and BTRS Behavior, we conducted a formal mediation analysis. In mediation analysis (Baron and Kenny 1986), the first step is to test the significance of the direct effect of the causal variable (i.e., Behavioral Intention) on the outcome variable (i.e., BTRS Behavior) without including the mediator (i.e., GIS App Usage). Direct effects were
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tested by estimating a structural model without the mediator, resulting in significant direct effects for Behavioral Intention on BTRS Behavior (.583, p < .01). The second and third prerequisites for mediation include a significant effect of the causal variable on the mediator and a significant effect of the mediator on the outcome variable. The results reveal both a significant effect of Behavioral Intention on GIS App Usage, as well as a significant effect of GIS App Usage on BTRS Behavior. We further tested the significance of the indirect effects and used bootstrapping estimations (Preacher and Hayes 2004). The results reveal a significant indirect effect for Behavioral Intention over GIS App Usage on BTRS Behavior (.393, p < .01). Since the direct effect between Behavioral Intention and BTRS Behavior remains positive and significant (.192, p < .05), we conclude that GIS App Usage partially mediates the relationship.

Discussion and Summary of Findings

To answer our initial research question (What are the antecedents of employees’ participation behavior in BTRS?), we analyzed the influence of attitude, subjective norm and perceived behavioral control on formation of behavioral intention. Our results indicate attitude to exert a significant and strong positive effect on behavioral intention, rendering individuals perspectives a noteworthy antecedent. This finding is in line with previous research (e.g. Hsu and Chiu 2004) and, as a consequence, corporate social responsibility means in favor of BTRS may concentrate more on employees’ individual perceptions and beliefs. Accordingly, marketing campaigns could focus on employees who have already formed positive attitudes towards BTRS (e.g. taking a pioneer role). These pioneers or innovators may inspire further employees to adopt BTRS. Contrary to our proposition and Beck and Ajzen (1991), subjective norm exerted no significant impact on behavioral intention. Two lines of reasoning may provide an explanation: Either the corporate environment or the impact of subjective norms could not be relevant for the BTRS context. As BTRS is still in its infancies, it may not be widespread enough to exert and induce social peer group effects (e.g. BTRS does not make for a relevant topic within social conversations at present). Perceived behavior control exerted a significant positive effect on behavior intention, indicating that employees consider the feasibility to integrate BTRS in their day-to-day work life as an important consideration. This suggests that employees with a higher perceived degree of control over their business travel modes more likely form BTRS behavioral intentions. This is noteworthy since perceived behavioral control itself does not necessitate formation of positive behavioral intentions towards a specific behavior. Regarding the proposed direct effect on behavior, no significant effect could be found. Thereupon, perceived behavioral control cannot count as a substitute for behavior actions, as may happen in certain circumstances (Ajzen 1991). Only via the mediation of behavioral intention, the direct linkage in its total effect becomes significant. Eventually, behavioral intention illustrated a positive and significant effect on behavior, indicating that employees with a BTRS intention actually show BTRS usage. Effects like attitude-behavior gaps are likely shall be easy to address and overcome. At this point, when employees have formed a positive behavioral intention towards BTRS, supportive technologies like GIS may enter the field. They could encourage and stimulate the real-world adoption of BTRS and might mitigate prevalent challenges like the BTRS match-making between drivers and passengers, a subject that our following research question addresses in more detail.

Pertaining to our second research question (Which role do GIS play regarding employees’ participation behavior in BTRS?), we researched the potential of GIS in the context of BTRS. Following the reasoning of De Guine and Markus (2009), we proposed that the GIS itself becomes a cue in itself that is able to stimulate employees’ BTRS usage. Our formal mediation analysis illustrates that the presence and regular usage of a BTRS GIS partially mediates the relationship between behavioral intention and behavior. Hereby, we are able to support the notion that the GIS itself becomes a cue for the adoption of BTRS. Employers may be able to stimulate employees via GIS first to become interested in BTRS and second to be supported in adopting BTRS on a regular basis. In principle, our analysis indicates that GIS can be beneficial and sensemaking to enable BTRS overall, thus leveling the field for IS-enabled BTRS GIS (vom Brocke et al. 2013).

Conclusion and Future Research

Besides our research supporting the theoretical understanding and providing managerial implications for BTRS, some limitations and related opportunities for future research emerged: (1) Due to our beta-test scenario, an additional survey including more participants can further substantiate our results. In this
second wave, more employees and maybe multiple corporate settings shall be taken into account. The current sample is likely predominated by innovators and early adopters (Rogers 2010), thus users with a more inherent interest in IS and innovations. In a subsequent survey more early and late adopters are likely present. (2) To foster BTRS acceptance and usage, it is beneficial to shed further light on aspects of BTRS GIS being beneficial or impactful for higher actual BTRS usage. Alongside, the influence of cultural, organizational norms and financial considerations could be evaluated in detail. (3) Once shifting to a general corporate audience, new challenges for BTRS may arise, for instance lower levels of IS competencies or individuals’ reservations like data privacy concerns or perceived losses of travel-related autonomy. Foundational aspects of these prospective challenges may serve as extended or advanced TPB constructs (Haustein and Hunecke 2007). (4) TPB offers interesting insights into antecedents of BTRS, nonetheless, further theories like the Self-Determination Theory may provide additional insights. Especially the different motivational predispositions may further explain how to strengthen BTRS usage and further improve BTRS GIS respectively. (5) In our context, the potentially important domain of economic incentives or remuneration schemes has not been investigated. Nevertheless, external rewards may impact especially the diffusion of corporate ridesharing. (6) Eventually, our mediation effect analysis indicated the importance of GIS facilitation services for BTRS. Here, questions arise on how BTRS GIS shall be designed, how they are used and which rules motivational IS (like gamification or nudging) can play in order to stimulate employees’ BTRS adoption.

In sum, BTRS can be seen as a concept whose time has come. Given the significant contribution of the transport sector to greenhouse gas emissions, BTRS is likely to become increasingly important: If two employees share the same vehicle on a business trip, greenhouse emissions are cut by half - a dimension that emphasizes the significant saving potential of both emissions and further natural resources (as a consequence of the wear and tear of vehicles). With our study, we contribute to the understanding of BTRS by highlighting the particularities of corporate environments. In exploring employees’ motivations for BTRS, we provide a better understanding of relevant factors for a successful GIS-supported BTRS introduction. Especially the role of GIS as IS-enabler for BTRS could be empirically confirmed and strengthens the importance of BTRS for the GIS community.

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REFERENCES


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Appendix

<table>
<thead>
<tr>
<th>Variables, items and sources</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Attitude (ATT):</strong> Source: Adapted from Ajzen (1991)</td>
</tr>
<tr>
<td>(ATT01) All in all, I think business trip ridesharing makes sense.</td>
</tr>
<tr>
<td>(ATT02) I think participating in business trip ridesharing is a good thing.</td>
</tr>
<tr>
<td>(ATT03) Business ridesharing is a better form of mobility than driving by myself on a business trip.</td>
</tr>
<tr>
<td><strong>Behavior (BEH):</strong> These items are measured on a 7-point scale ranging from 0 (not at all) to 7 (daily); Source: Inspired by the Technology Acceptance Model and Venkatesh et al. (2012)</td>
</tr>
<tr>
<td>(BEH01a) How often do you pick up colleagues today (as a driver)?</td>
</tr>
<tr>
<td>(BEH01b) How often would you like to take colleagues with you in the future (as a driver)?</td>
</tr>
<tr>
<td>(BEH02a) How often do you ride with colleagues today (as a passenger)?</td>
</tr>
<tr>
<td>(BEH02b) How often would you like to ride with colleagues in the future (as a passenger)?</td>
</tr>
<tr>
<td><strong>Behavioral Intention (BIN):</strong> Source: Adapted from Hamari et al. (2016) and Bhattacherjee (2001)</td>
</tr>
<tr>
<td>(BIN01) All in all, I intend to (continue to) use business trip ridesharing in the future.</td>
</tr>
<tr>
<td>(BIN02) I can imagine that I will (continue to) participate in business trip ridesharing in the future.</td>
</tr>
<tr>
<td>(BIN03) I think I will use business trip ridesharing frequently.</td>
</tr>
<tr>
<td><strong>Perceived Behavior Control (PBC):</strong> Source: Adapted from Ajzen (2006)</td>
</tr>
<tr>
<td>(PBC01) Generally speaking, it is possible for me to take part in business trip ridesharing as a driver in my daily work.</td>
</tr>
<tr>
<td>(PBC02) Generally speaking, it is possible for me to participate in business trip ridesharing as a passenger.</td>
</tr>
<tr>
<td>(PBC03) If I wanted, I could easily use business trip ridesharing in the next few months.</td>
</tr>
<tr>
<td><strong>Subjective Norms (SNO):</strong> Source: Adapted from Haustein and Huncke (2007)</td>
</tr>
<tr>
<td>(SNO01) Colleagues within my closer environment think that I should use business trip ridesharing.</td>
</tr>
<tr>
<td>(SNO02) Colleagues within my closer environment would support me in using business trip ridesharing.</td>
</tr>
<tr>
<td><strong>GIS App Usage (APP):</strong> These items are measured on a 7-point scale ranging from 0 (not at all) to 7 (daily); Source: Inspired by the Technology Acceptance Model and Venkatesh et al. (2012)</td>
</tr>
<tr>
<td>(APP01a) Please indicate how often you open and use the BTRS app today as a driver (with the aid of finding colleagues as passengers).</td>
</tr>
<tr>
<td>(APP01b) Subsequently, based on your assessments and experiences, indicate how often you intend to open and use the pool app in the future as a driver (with the aim of finding colleagues as passengers).</td>
</tr>
<tr>
<td>(APP02a) Please indicate how often you open and use the BTRS app today as a passenger (with the aim of riding with colleagues).</td>
</tr>
<tr>
<td>(APP02b) Subsequently, based on your assessments and experiences, indicate how often you intend to open and use the pool app in the future as a driver (with the aim of finding colleagues as passengers) or passenger.</td>
</tr>
</tbody>
</table>

Table 3. Operationalization of constructs and variables. Notes. Items have been translated from German.