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Dec 11th, 12:00 AM

Doing Well by Doing Fair? Investigating the Effect of Users' Fairness Perceptions on Adoption Intentions of Services

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Waltermann, Hubertus; Ziegler, Anika; Engert, Simon Paul; and Hess, Thomas, "Doing Well by Doing Fair? Investigating the Effect of Users' Fairness Perceptions on Adoption Intentions of Services" (2023). *Rising like a Phoenix: Emerging from the Pandemic and Reshaping Human Endeavors with Digital Technologies ICIS 2023*. 17.

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Doing Well by Doing Fair? Investigating the Effect of Users' Fairness Perceptions on Adoption Intentions of Services

Completed Research Paper

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Abstract

Within the IS discipline, the concept of fairness as a determinant for social good recently gained attention. However, a comprehensive understanding of the influence of different fairness dimensions on user perceptions and their adoption intention of new technologies is missing. Based on fairness research, the FAIRSERV model, and the technology acceptance model, we derived a research model to study how users' fairness perceptions along different dimensions influence their adoption intentions in the context of online services. We tested our model in an online experiment with 407 participants. Our results show that perceived distributive, procedural, and interactional fairness positively influence users' perceived overall fairness regarding an online service, which, in return, positively influences their adoption intentions. We contribute to IS research by shedding light on the societal impact of fairness in the context of adopting new digital services. Practitioners can utilize our findings to improve their service offerings.

Keywords: Fairness dimensions, adoption intention, services, user perceptions

Introduction

The information systems (IS) discipline is concerned with using technologies to make a better world (Walsham, 2012). Increasingly, the field has begun to devote attention to the application of technologies for social good, such as emancipation (Young, 2018), empowerment of marginalized groups (Ortiz et al., 2019), and fairness (Bichler et al., 2021; Joshi, 1989). Being treated fairly is an underlying need of humans (Tabibnia & Liebermann, 2007). The need for fair treatment does not only apply in everyday life when people want to be treated with respect and politeness but becomes especially important when entering an economic relationship, e.g., between a user and a service firm (Carr, 2007). Thus, how users evaluate and perceive a service's fairness is essential to firms. First, services are generally difficult to evaluate, but even more so before purchasing and experiencing them. Therefore, customers become especially sensitive regarding fairness perceptions (Seiders & Berry, 1998; Zhu & Chen, 2009). Second, the perception of fairness is integral in maintaining a satisfactory relationship between all parties (Blodgett et al., 1993; Roy

et al., 2015). Third, supplying high-quality service alone does not necessarily guarantee high returns. Providers must focus on customers' perception of fairness since they influence customers' consumption choices (Carr, 2007). In online services (paid-data, free-data services, or hybrid forms thereof), value is provided via the service offered. Users return value by paying money and providing personal data in exchange for using the service. Especially concerning personal data, customers are sensitive and cautious and require trust from the other party (Wagner et al., 2021). Examples are social networking sites (Krasnova et al., 2014) or online content and news sites, where consumers are accustomed to receiving content for free and fairness significantly influences their willingness to pay (Wang et al., 2005).

From a practical perspective, fairness in serviced relationships in the digital world becomes an increasingly important determinant with regard to current legislation processes and discussions about the future of third-party cookies: If automated data collection processes are being steadily restricted, the relationship between the provider of a service and its user becomes more important than before. Given the increasingly complex processes of getting users' consent to collect and process their data, relationships between service providers and users perceived as fair by users are necessary preconditions to access and leverage data as an important source for economic success. Moreover, fair exchanges would enable long-term transparency and trust between organizations offering data-gathering services and their users.

Companies are greatly interested in being perceived as fair by their customers or employees since it strengthens user satisfaction and the intention of continued service or product use (Seiders & Berry, 1998). Therefore, understanding how users perceive the fairness of online services is essential for firms beyond the normative and ethical obligations of being fair (Bosse et al., 2009; Phillips, 1997). Fairness is perceived when the values given and received (bi-directional) are in a ratio that both parties perceive as fair (Wagner et al., 2021) and can be subdivided into different dimensions. The three key dimensions are distributive, procedural, and interactional fairness (Carr, 2007; Colquitt et al., 2001; Krasnova et al., 2010; Krasnova et al., 2014; Wagner et al., 2021). The concept of overall fairness captures users' evaluation of the service system as a whole (e.g., Beugre & Baron, 2001; Carr, 2007).

However, while there is extensive literature about the different dimensions of fairness and an acknowledgment of its multi-dimensionality (Bosse et al., 2009; Colquitt, 2001), they are often only studied in isolation in the IS discipline (e.g., Wagner et al., 2021). Additionally, we lack insight into how fairness perceptions of users impact their intentions to adopt a digital service. Consequently, research needs a holistic understanding of how the three dimensions of fairness can be operationalized in an online service and how users' fairness perceptions influence their adoption intentions. Hence, we propose the following research question:

How do users' fairness perceptions influence their adoption intentions of online services?

To answer this question, we conducted an online experiment with 407 subjects in the context of an online service. Within this vignette experiment, the participants were confronted with several features of a fictional online newspaper service. These features were manipulated to examine whether the design of these features affects users' fairness perceptions of the service and, as a result, their adoption intentions. First, we found that the design affects users' fairness perception on a distributive, procedural, and interactional level, which affects their perception of the service's overall fairness. Second, our results indicate that users' perceptions of the overall fairness of the service positively influence their adoption intentions. While it has been established that users' fairness perceptions positively impact customer satisfaction, loyalty, re-patronage intention, employee commitment, or trust in different contexts (Carr, 2007; Chiu et al., 2009; Folger & Konovsky, 1989), these outcomes refer to users' evaluation after consumption. We add to IS literature by studying users' evaluation before conversion. Our paper delivers insights into how fairness can be operationalized in the context of an online newspaper service, how that affects users' perceptions, and their intentions to adopt this service. This way, we contribute by shedding light on the "attractive underlying business principle" (Roy et al., 2015, p. 998) of fairness, which has been described as difficult to measure because it represents a "nuanced, multidimensional construct" (Roy et al., 2015, p. 998). Service providers receive valuable information and guidance about how to efficiently design their service and thus strengthen the perceived fairness and the adoption intention of users. This is especially relevant since this might predict customers' purchase behavior – which is essential for the success of online companies (Küster et al., 2016).

The remainder of this paper is structured as follows: First, we elaborate on the theoretical foundation of our research approach by giving an overview of fairness research. We describe its distinct underlying

dimensions, i.e., distributive, procedural, and interactional fairness, and highlight the importance of an overall fairness perception. Second, we develop four hypotheses for building our research model, which is based on the technology acceptance model (TAM) by Davis (1989) and the FAIRSERV model by Carr (2007). Third, we describe the design of our online experiments. Fourth, we describe the results of our study. Fifth, we discuss the study's findings in light of literature on fairness in the digital service context and whether firms can benefit from being fair. We conclude by outlining this study's contributions, implications for managers, and limitations.

Theoretical Foundation

Fairness Research

Questions related to fairness have puzzled researchers from various disciplines for decades (Colquitt et al., 2001). Questioning the assumptions of the strictly rational *homo economicus* (Fehr & Schmidt, 1999), researchers established that matters of fairness influence the behavior of individuals (Kahneman et al., 1986) and organizations (Bosse et al., 2009). Generally, economic agents prefer being treated fairly and will reciprocate by rewarding fair behavior or punishing behavior deemed unfair (Bosse et al., 2009; Fehr & Gächter, 2000). Besides its behavioral notion, fairness also carries a normative dimension (Phillips, 1997) closely connected to issues of justice (Rawls, 1999), which are often used interchangeably in the literature. From a stakeholder theory perspective, “obligations of fairness arise when individuals and groups of individuals interact for mutual benefit” (Phillips, 1997, p. 52). While stakeholder approaches have advocated for interorganizational perspectives on fairness, prior literature has predominantly studied intraorganizational fairness under the umbrella of organizational justice (Colquitt et al., 2001; Greenberg, 1990). Within this stream, fairness is considered to have three dimensions (Colquitt, 2001): distributive fairness, procedural fairness, and interactional fairness. While initial studies, particularly those drawing on equity theory (Adams, 1965), focused on the perceived ratio of input to output of employees relative to their peers—i.e., distributive justice—, soon attention shifted toward the fairness of the process of achieving a given distribution (Leventhal et al., 1980)—i.e., procedural justice. Later, interactional justice complemented the concept by referring to the manners in which actors treat each other (Bies & Moag, 1986), which can further be divided into interpersonal and informational fairness (Greenberg & Cropanzano, 1993). Out of simplicity, we will follow the vast number of studies that have used the three-dimensional conceptualization of fairness (Colquitt, 2001). Since research has often solely focused on one of the dimensions, we will review each of the three in more detail in the following.

Dimensions of Fairness

Distributive Fairness. The majority of initial research on fairness concentrated on the distributive fairness perspective. “Distributional fairness refers to the material outcomes for the various parties of a pattern of allocation” (Bosse et al., 2009, p. 450). According to Adams (1965) and his work on equity theory, a prerequisite of perceived fairness is that an actor's ratio of perceived outcomes and inputs must match those of peers. While the focus lies on the results an individual gets from the exchange, not the absolute levels of outcomes are important, but whether these outcomes are perceived as fair (Krasnova et al., 2010). Perceived fairness can thus be calculated by the ratio of one's inputs to one's outcomes compared with the ratio of peers. Despite the attempt to make the evaluation more objective, the process remains entirely subjective (Colquitt et al., 2001). If the ratios of inputs/outcomes differ between two persons and are, thus, deemed unfair, this might affect emotions, cognitions, and behaviors (Adams & Freedman, 1976), expressed in rewards or punishments (Bosse et al., 2009). Additionally, equity theory posits that people are not necessarily only acting in self-interest by striving to get as much as possible from the exchange but that they seek to avoid “undervalued outcomes and overvalued outcomes” (Carr, 2007, p. 109). Put simply, if people receive less than what they deem fair, i.e., undervalued outcomes, they might feel cheated, whereas if they receive more, overvalued outcomes, they might feel guilty. If that is the case, people seek to reduce and dispose of those feelings with different strategies, e.g., by increasing or decreasing the value of their outcomes to achieve balance (Carr, 2007).

Procedural Fairness. Besides outcomes, the process leading to a distribution among actors matters for fairness perceptions. Procedural fairness refers to whether the processes and policies leading to the outcomes of an exchange are perceived as fair (Lind & Tyler, 1988; Thibaut & Walker, 1975). Procedural

fairness can be judged by six criteria (Leventhal, 1980; Leventhal et al., 1980). These include the consistent application across people and time, the freedom of bias, the collection of accurate information to be used in decision-making, and the existence of a mechanism to correct flaws. On top of that, fair procedures should aim at complying with applicable moral and ethical standards and at ensuring that the views of those affected by the decision are taken into account (Colquitt et al., 2001; Leventhal, 1980). Giving individuals control over the process is a characteristic of procedural fairness (Brockner et al., 2001; Colquitt et al., 2001), to the extent that control-rich procedures are preferred to potentially more beneficial options that are harder to control (Morris & Leung, 2000). Consequently, customers want their choices to be reflected and decision-making processes to be consistent, transparent, and free of bias (Bosse et al., 2009).

Interactional Fairness. Interactional fairness focuses on the human side of the exchange (Carr, 2007), which concentrates on the importance of the quality of interaction people receive from organizations when implementing procedures (Bies & Moag, 1986). This dimension can be subdivided into interpersonal fairness and informational fairness (Carr, 2007; Colquitt et al., 2001). Interpersonal fairness refers to the extent to which people are treated with politeness, friendliness, and respect when procedures are implemented. It can include mundane things such as smiling and greeting or giving all customers polite and personal attention (Greenberg & Cropanzano, 1993). Informational fairness focuses on the explanations and information provided around the implemented procedures. This includes, for instance, the reasons for implementing policies, the reasons why outcomes are distributed in a certain way, or their functionality, i.e., detailed, multi-faceted explanations or additional support services (Carr, 2007; Colquitt et al., 2001). Interactional fairness as a synoptic concept is vital since adverse treatment of customers through an agent also affects the image of the organization that this agent represents (Carr, 2007).

Overall Fairness. Notwithstanding the tridimensionality of fairness, there is supporting literature with an overarching construct referred to as overall fairness or systemic fairness (e.g., Beugre & Baron, 2001; Johnson et al., 2009; Kim & Leung, 2007). In addition to fairness evaluations based on “individual events they experience” (Johnson et al., 2009, p. 432), people assess an entity’s fairness overall. Overall fairness is defined as a judgment of overall fairness or unfairness of an organization as a whole (Lind, 2001) and was validated as a distinct construct from its antecedents (Carr, 2007; Jones & Martens, 2009). Consequently, people want an organization to have an overall fair system next to outcomes, procedures, and interpersonal treatment (Beugre & Baron, 2001). The notion that people primarily respond to their perception of overall fairness, which depicts “the real picture” (Mohammad et al., 2019, p. 615) rather than specific types of fairness supports this assumption (Jones & Martens, 2009). Relatedly, fairness heuristic theory (Lind, 2001) postulates that individuals develop broad fairness perceptions of an organization, which is then used to evaluate its subsequent actions (Johnson et al., 2009). More importantly, these perceptions influence outcomes such as employees’ attitudes towards their jobs (Beugre & Baron, 2001; Kim & Leung, 2007) and serve as a good predictor thereof (Mohammad et al., 2019).

Hypotheses Development

While fairness can be seen as an end in its own right, users’ fairness perceptions matter for companies providing services because of its economic implications, given the widely established rationale of both the TAM and the value-based adoption model (Davis, 1989; Hong et al., 2006; Kim & Leung, 2007; Taylor & Todd, 1995). Since people are known to reciprocate perceived fairness positively, a perception of personal interaction with the service provider deemed fair by the user should result in positive reactions. Existing research supports that notion as perceived fairness has been associated with higher service satisfaction (Wagner et al., 2021), increased trust (Krasnova et al., 2014), and a higher willingness to pay. In this regard, the goal of our study is, on the one hand, to examine the influence of users’ perceptions of the fairness dimensions on overall fairness and, on the other hand, the influence of overall fairness on users’ adoption intention. As mentioned above, fairness can be divided into three dimensions: i.e., distributive, procedural, and interactional fairness. Furthermore, there is evidence that overall fairness exists as a distinct construct on top of the three other dimensions. Support for the relatedness of the different dimensions to the perception of overall fairness can be found in various studies (e.g., Beugre & Baron, 2001; Jones & Martens, 2009; Lind, 2001; Lind & Tyler, 1988). This influence is rooted in fairness heuristic theory (Lind & Tyler, 1988), which states that the perception of the various dimensions influences the perception of overall fairness. Applying this to the service environment, consumers make an overall judgment of the service based on the different dimensions (Carr, 2007). It is important to mention that, in research, different scales

are used to measure each fairness dimension, meaning they exist as individual constructs. That is, the influence of one dimension on overall fairness is independent of the relationship of the other dimensions to overall fairness. Therefore, the expected direction of the influence of each dimension on overall fairness is hypothesized individually below.

Several studies regarding distributive fairness showed that this dimension positively affects overall fairness. One example is the study of Ambrose and Schminke (2009), investigating employees' attitudes toward their work and testing the hypothesis that overall fairness acts as a mediator between the individual fairness dimensions and outcome variables. The positive effect of distributive fairness on overall fairness proved to be significant. The positive influence could also be confirmed in the study of Jones and Martens (2009). Here, distributive fairness is responsible for unique variance in overall fairness. Concretely, the authors showed a fully mediated effect of distributive fairness on an outcome variable, managerial support, through overall fairness. Severt and Rompf (2006) support this finding by identifying a positive path coefficient of distributive fairness on overall fairness. Lastly, a positive effect of distributive fairness on overall fairness could be detected in the research of Carr (2007). This last finding is especially relevant since the FAIRSERV model investigated in the setup focuses on the service evaluation through the customer. Based on these theoretical insights, we make the following hypothesis:

Hypothesis 1: *Distributive fairness positively influences overall fairness.*

Regarding the second fairness dimension, the study of Beugre and Baron (2001) showed that when employees perceive procedural fairness, this positively and significantly influences their perception of fairness of the organization, i.e., overall fairness. Similar to distributive fairness, Severt and Rompf (2006) showed a positive path coefficient of procedural fairness on overall fairness. Referring again to the FAIRSERV model, a positive effect of procedural fairness on overall fairness could be detected (Carr, 2007). Consequently, as with distributive fairness, we expect the following effect:

Hypothesis 2: *Procedural fairness positively influences overall fairness.*

Similarly, as with procedural fairness, interactional fairness experienced by employees positively and significantly influences their perception of overall fairness (Beugre & Baron, 2001). Likewise, as with distributive and procedural fairness, a positive coefficient of interactional fairness on overall fairness could be established in the study of Severt and Rompf (2006). Furthermore, several positive effects of parts of interactional fairness were demonstrated in the study by Jones and Martens (2009). In this case, interactional fairness was subdivided into informational and interpersonal fairness, and both were significantly related to overall fairness by accounting for unique variance in the variable. This also applies to the FAIRSERV model by Carr (2007), where both informational and interpersonal fairness explain a part of the variance in overall fairness. Therefore, we expect the following influence here as well:

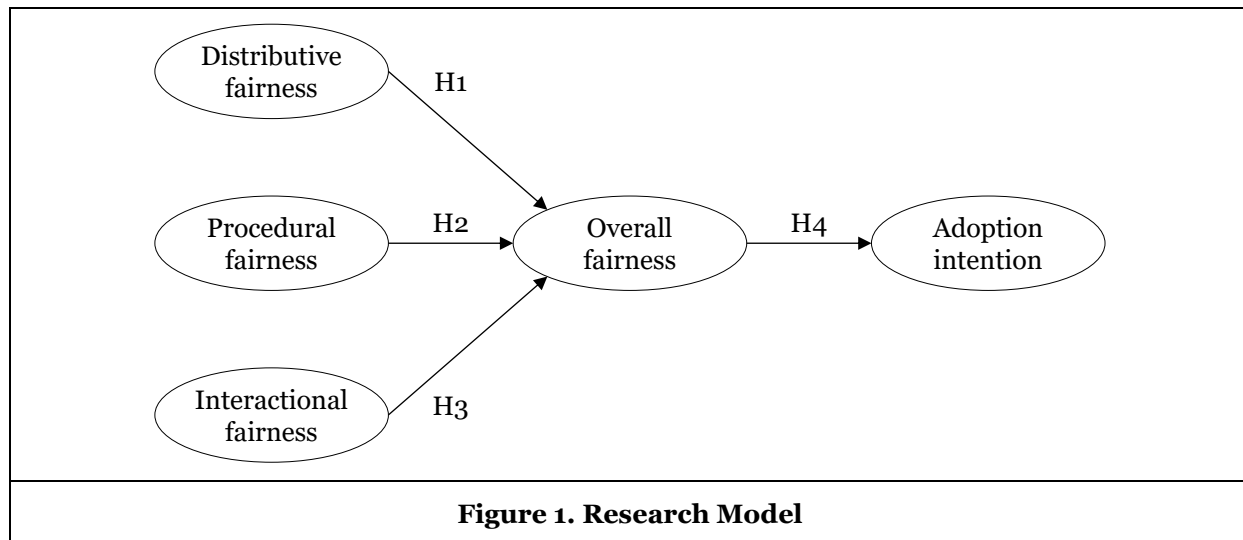
Hypothesis 3: *Interactional fairness positively influences overall fairness.*

Against this background, overall fairness can be seen as a summative variable that “acts as a mediator between the dimensions of service fairness and the outcome variables” (Carr, 2007, p. 115) in our model. It mediates the relationship between distributive, procedural, and interactional fairness which can be instantiated as dimensions of service fairness, and other outcome variables, which helps us to examine how the perception of fairness affects consumer behavior. In this regard, overall fairness is necessary as a central construct in our model as it allows us to channel the effects of the three dimensions in line with the FAIRSERV model. As elaborated in the theoretical foundation, people primarily respond to their perception of overall fairness (Jones & Martens, 2009), which is why overall fairness is chosen as a predictor for customer behavior in the context of this study. There is multiple support in the literature regarding overall fairness as a variable positively influencing several positive outcomes, such as employee attitudes (Greenberg, 1989) or customer or job satisfaction (Jones & Martens, 2009; Krasnova et al., 2014; Seiders & Berry, 1998; Severt & Rompf, 2006) as well as organizational citizenship behaviors (Lind, 2001). Put simply, a judgment of overall fairness influences attitudes and behaviors (Kim & Leung, 2007). To give a concrete example, the FAIRSERV model supports the positive effects of the fairness dimensions through overall fairness on outcomes such as service quality, service satisfaction, or re-patronage as dependent variables. The assumption is that the fairer a consumer perceives the service, the more satisfied and connected they will feel to the service. As a result, the loyalty between users and the service is strengthened (Carr, 2007). However, this paper investigates the influence of fairness on customer behavior based on the design of features around the purchase process. Consequently, the examination does not happen *after* but

before consumption, which is why another variable depicting customer behavior is needed. This leads to the connection of overall fairness with the variable adoption intention from the TAM. Adoption intention (i.e., behavioral intention) can serve as a predictor for actual behavior, which is validated in research (Kim et al., 2007). Including this variable makes it possible to examine how the perception of overall fairness influences consumers' decision to subscribe to the service. As already stated, overall fairness positively influences positive outcomes such as service satisfaction (Carr, 2007). Users' decision to adopt a service can undoubtedly be seen as a positive outcome from the provider's perspective. Following these theoretical insights, it is hypothesized that:

Hypothesis 4: *Overall fairness positively influences adoption intention.*

Figure 1 illustrates the final path model. According to hypotheses 1, 2, and 3, the different fairness dimensions are expected to influence users' overall fairness perception of the service. Following hypothesis 4, users' perception of overall fairness positively influences their adoption intention and thereby gives a prediction of actual customer behavior (Kim et al., 2007). As already stated, our model builds on and extends the FAIRSERV model by Carr (2007). While there are commonalities, above all the connections between the three fairness dimensions to overall fairness, our model differs in several aspects. First, contrary to Carr's model, interactional fairness is not subdivided into interpersonal and informational fairness. The setting and nature of the experiment make the interaction unidirectional. Second, even more importantly, the main difference lies in the outcome variable and thereby hypothesis 4. While the FAIRSERV model investigates fairness following the consumption of the service, our research focuses on the features surrounding the purchase process, prior consumption of the service. Therefore, the fairness dimensions and overall fairness are addressed differently and used to predict customer behavior regarding the adoption of the service, contrary to users' evaluation of the service. The focus on pre-consumption has clear ramifications. If fairness can be reflected in features and thus positively influence the adoption intention of the users, this has significant consequences for the design of the service's features and offers.



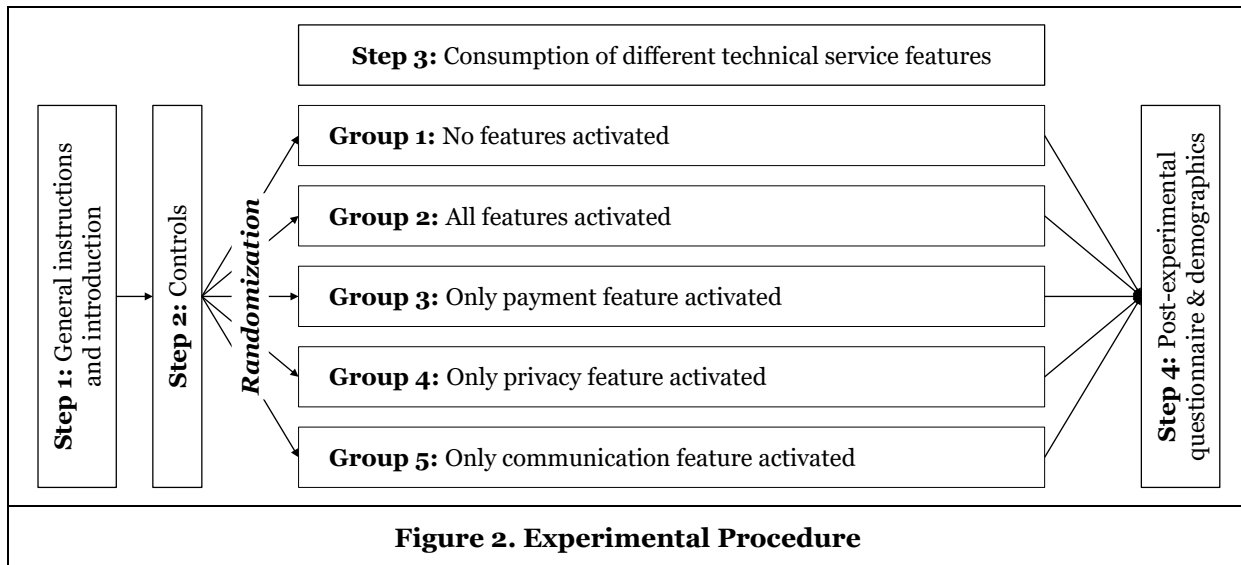
Methodology

Experimental Design

To test our research model, we conducted an online experiment in which the participants were confronted with different designs of features of an online newspaper service that each represented one of the different fairness dimensions. The features were shown on the fictional landing page of the service displaying the offer, which comprises access to online articles by passing their paywall. Fairness is crucially important for online newspapers, or digital journalism in general, for several reasons and, thus, a particularly suitable setting for our experiment. The field faces a longstanding puzzle related to issues of monetizing online content (Lobigs, 2018); digital journalism is home to numerous sociotechnical issues such as its democracy-

preserving role, privacy-related concerns, and fake news and misinformation (Waisbord, 2018); online news services are omnipresent in people’s daily lives, opening our experiment to more participants.

In the following, we propose three service features that were incorporated into our experiment in the context of an online newspaper service. The features revolve around the purchase offer of the service towards the user and are introduced for the purpose of reflecting each fairness dimension. The distributive fairness dimension focuses on the (promised) outcomes of an exchange (Colquitt et al., 2001), i.e., to the potential outcomes of the transaction between the service and the user. There are several examples in literature that investigate users’ perception of distributive fairness and different ways to influence it (Krasnova et al., 2010). Based on equity theory (Adams, 1965), these strategies have the goal to achieve equitable exchange from a users’ perspective, since that is evaluated by consumers (Carr, 2007). For our experiment, a subscription-based revenue model is chosen, which means that the customer will subscribe to the service, have access to news articles, and will pay a monthly fee. This offer, including all conditions, such as scope and price of the subscription, is presented to the customer in what we call the payment feature. The second feature revolves around the gathering of users’ personal data. This is in the interest of many online services, including online newspapers, as users’ personal data can be used to personalize their offers or advertisements (Cahn et al., 2016). One way to achieve this is through the implementation of cookies. What we will call the privacy feature will inform the users of the cookie usage and procedures, giving them the opportunity to consent or adapt their personal preferences. This feature represents procedural fairness since, according to its definition, users want to have control, be aware, and know about the employed procedures surrounding the employment of their data (Krasnova et al., 2010; Spiekermann, 2007). Several studies argue that interaction fairness is experienced by users when interacting with customer service representatives (Cho et al., 2003), whose help is often needed in the context of the online environment and can happen through different means (Cox & Dale, 2002). To directly target the interactional fairness motive in our specific context, customers need to be made aware of the customer service offering. Therefore, the inclusion of a contact form of the customer service at the beginning of the purchase process is a requirement for the users to experience interactional fairness. This feature of the customer service will be referred to as the communication feature and will consist of a pop-up informing the users of the existence of customer service and means of contact.



Our experimental procedure is illustrated in Figure 2. At the beginning of the experiment, the participants are asked to project themselves into a scenario in which they are interested in subscribing to a digital newspaper to be more informed about daily news. Therefore, they visit the website of a fictional online newspaper service, ‘heute-direkt’, which is similar to public newspaper landing pages. The probands are then exposed to the previously derived three features displayed in different mockups. The experiment is structured as follows. It starts off with an introduction regarding technical and thematic instructions as well as data protection information. The first questions cover the control variables. The participants are asked

about their experience regarding data processing, their habits regarding reading online news, and their personal innovativeness. In the following, the participants are randomly divided into five groups depending on the mockups that represent the different service features and given explanations about the scenario.

All participants of the experiment were opposed to three different mockups within the frame of a smartphone. The first mockup they see is the payment feature. Here, the offer of the service, a subscription-based online newspaper, is displayed. This feature has two possible designs. The non-manipulated version solely includes the hard facts about the transaction, such as the monthly price and which articles are included in the package, information about the trial and cancellation period, and the respective payment methods. The manipulated version on the other hand additionally covers facts tailored to users' needs to achieve equitable exchange, thereby triggering distributive fairness. This includes the quick publishing time of new articles, a price benchmark, a link to reviews as proof of the success and loyalty of the customers, and a reminder that the digital subscription spares the environment. The second mockup displays the privacy feature in the form of a pop-up and contains a cookie notification informing the users about the usage of cookies. The non-manipulated version solely includes the information that cookies are being used and gives users a choice between accepting the cookies or changing their settings in addition to the information that their consent can be withdrawn. The manipulated version covers a lot more detail, which, again, is tailored to users' needs for control, enforcing procedural fairness. First, it outlines why cookies are used and clearly points out how the customers benefit from the use of cookies by, for example, stressing the personalization aspect and recommendation possibilities. Second, the data processing is explained in detail, including information on the process itself as well as the definition of cookies. It is important to delimit the payment and privacy feature from interactional fairness. Regarding the payment feature, the difference in our case is not necessarily 'how' the offer is communicated, e.g., short and unpolite vs. long and friendly, but that additional facts surrounding the subscription are included in order to support equitable exchange from a user's perspective. This has successfully been applied in the context of social networks by (Krasnova et al., 2010), who made use of the distributional fairness motive by elaborating on the work that goes into supporting the network. Regarding the privacy feature, adding information to the cookie notification is not necessarily a communication method, but simply a clarification of what is asked of the users, thereby giving them control, knowledge, and awareness, which targets the definition of procedural fairness (Spiekermann, 2007). In fact, through the payment and privacy feature no interaction between the provider and users is possible. That is the purpose of the third feature, the communication feature, specifically inviting the customers to interact. It is a pop-up and contains a notification of the customer service including possibilities of contact. The non-manipulated version informs the customers of the existence of the customer service and includes a link where the users can click to ask questions. The manipulated version stresses the fact that the customers' needs are important to the service and emphasizes methods of how the customer service is willing to help, such as extra offers like a free cancellation reminder, extra support with data protection, and a possible subscription to personal recommendations. Thereby, users' need for friendly and dedicated interaction with the customer service is realized, enforcing interactional fairness.

We combined the three different mockups to result in five versions, which either had none of the features activated (group 1), all features activated (group 2), or only one of the features activated (groups 3-5). The participants were randomly assigned to one of these versions. In Figure 3, we illustrated exemplary mockups for group 2, where all the features were activated. Accordingly, the manipulated mockups (from left to right: payment, privacy, communication feature) all contain additional information tailored to users' needs, as previously explained. Each participant exclusively sees one version of the series of mockups with the respective treatments and is then exposed to a series of questions, meaning the experiment has a between-subject design (Charness et al., 2012). To ensure that participants take enough time to look carefully at each feature and understand the information displayed, we set a 30 second timeout for each feature, making it only possible to proceed with the study after that time has passed. Additionally, the participants are asked three questions, one based on each feature, that serve as manipulation checks. Finally, all participants proceed with the same post-treatment questionnaire containing the required constructs and finish by providing answers to the demographic questions.

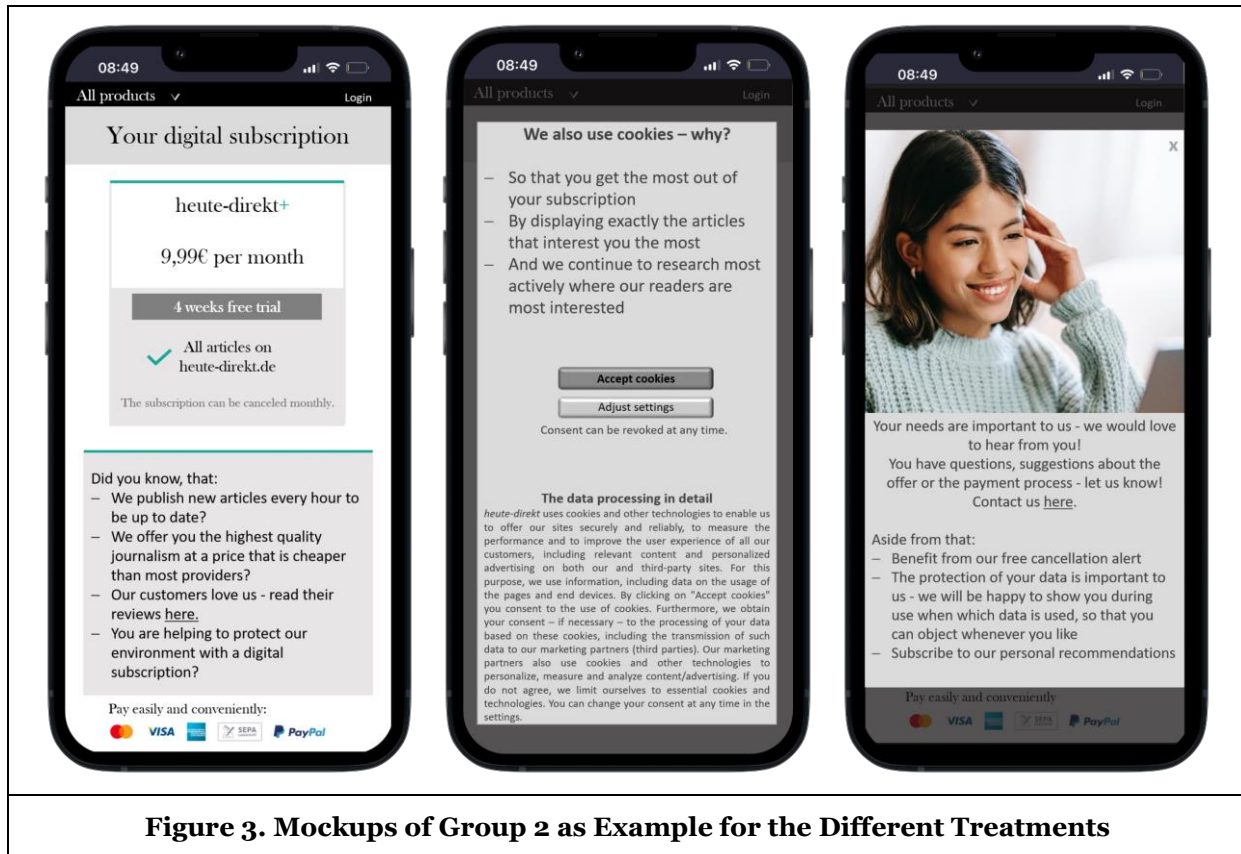


Figure 3. Mockups of Group 2 as Example for the Different Treatments

Measures and Data Collection

For the analysis, we applied established scales and slightly adapted them to the research context if needed. The constructs are all reflective and analyzed using 7-point Likert Scales. Most of the items for distributive, procedural, and interactional fairness are adapted from Nguyen and Nham (2014) and Roy et al. (2015). Additional sources include Ting (2013) and Smith et al. (1999) for items for distributive fairness as well as Ting (2013) and Colquitt et al. (2001) for interactional fairness. The items for overall fairness are based on Kim and Leung (2007) and Beugre and Baron (2001) and for adoption intention on Alharbi and Drew (2014), Wu et al. (2011), Saprikis and Avlogiaris (2021) and Agarwal and Karahanna (2000). We included several control variables to account for any biases regarding personal interests and habits. These include personal innovativeness, with items adapted from Agarwal and Karahanna (2000) and Wu et al. (2011), participants' habits and frequency of reading an online newspaper, and knowledge about data processing on the internet. The demographic control variables consist of age, gender, education, and occupation.

The experiment was pretested in two sequential steps. In the first round, four persons carefully read the in the questionnaire's questions and gave feedback on their completeness and linguistic correctness. On top of that, they evaluated the treatments concerning their design and readability. In the second round, the questionnaire was sent to five experienced researchers for additional validation. They gave feedback concerning scientific correctness, completeness, and options for improvement. Each of the researchers followed the path of a different group, so each of the treatments was pretested and adjusted if necessary. The final data collection took place in September 2022. The invitation to the study was first distributed by approaching the researchers' own personal and professional networks. Additionally, the link was shared in in different social media groups and spread via a mailing list composed of students and alumni from one of the biggest universities in Europe with over 5,000 subscribers. To motivate people to complete the study, an incentive was given consisting of a small charitable donation for each completed questionnaire.

In total, 407 participants completed the experiment. Of these, 31.7% are male, 65.6% female, 1% non-binary, and 1.7% preferred not to say. The average age is 32.56 (SD=14.411), ranging from 15-79 years. Most respondents were highly educated, with 28.7% having a high school diploma, 25.3% having a bachelor's, and 30.5% having a master's degree or doctorate. The biggest group of participants of 48.9% is working either full or part-time and 42.8% are students or pupils. To check whether there are significant differences between the groups regarding the control variables, chi-squared tests (χ^2 -test) by Pearson (1900) are conducted with the statistical program IBM SPSS Statistics 28. For gender ($p=.373$), education ($p=.703$), and occupation ($p=.588$) the results yield no significant differences between groups. Moreover, one-way ANOVAs for age ($F=.800$, $p=.526$), frequency of reading online newspapers ($F=.211$, $p=.932$), know-how regarding data processing ($F=.471$, $p=.757$), and personal innovativeness ($F=1.420$, $p=.226$) also show no significant differences between groups. It can therefore be concluded that the randomization of participants is sufficient and that they are balanced across all groups.

As previously stated, the participants are opposed to one manipulation check per mockup to evaluate whether they carefully looked at the images and to test whether the manipulation worked. The questions are identical for all groups and inquire if a manipulation-specific piece of information is included in the mockups. The answer possibilities are *true* and *false*, whereas *true* would be the right choice for the manipulated version and *false* would be correct for the non-manipulated version. That means that a participant for, for example, group 1, that is exposed to the non-manipulated mockup in the payment feature would have to check false for question 1 to pass the manipulation check. The manipulation check question for the payment feature was answered correctly by 90%, for the privacy feature by 92%, and for the communication feature by 91%. It can thus be concluded that the manipulation worked sufficiently. It is important to mention that the participants who did not answer the questions correctly are kept in the sample to account for natural deviations such as misconceptions or technical inexperience and to avoid causing biases (Aronow et al., 2019).

Data Analysis

Analysis of the research model

Before testing the partial least squares structural equation model (PLS-SEM), we conducted a factor analysis in SmartPLS based on the suggested thresholds by Hair et al. (2011). We calculated Cronbach's Alpha (CA) and composite reliability (CR) to assure internal consistency. As displayed in Table 1, all constructs exceeded the suggested thresholds of 0.7 for factor loadings, CA, and CR. Convergent validity is given as all average variances extracted (AVEs) exceed the suggested threshold of 0.5. We established discriminant validity by assessing cross-loadings, the heterotrait-monotrait ratios (HTMT), and the Fornell-Larcker criterion. All factor loadings exceeded their cross-loadings. Moreover, all HTMT ratios were below the conservative threshold of 0.85, as suggested by Henseler et al. (2015). The Fornell-Larcker criterion was met, as square roots of the AVEs exceeded the inter-construct correlations.

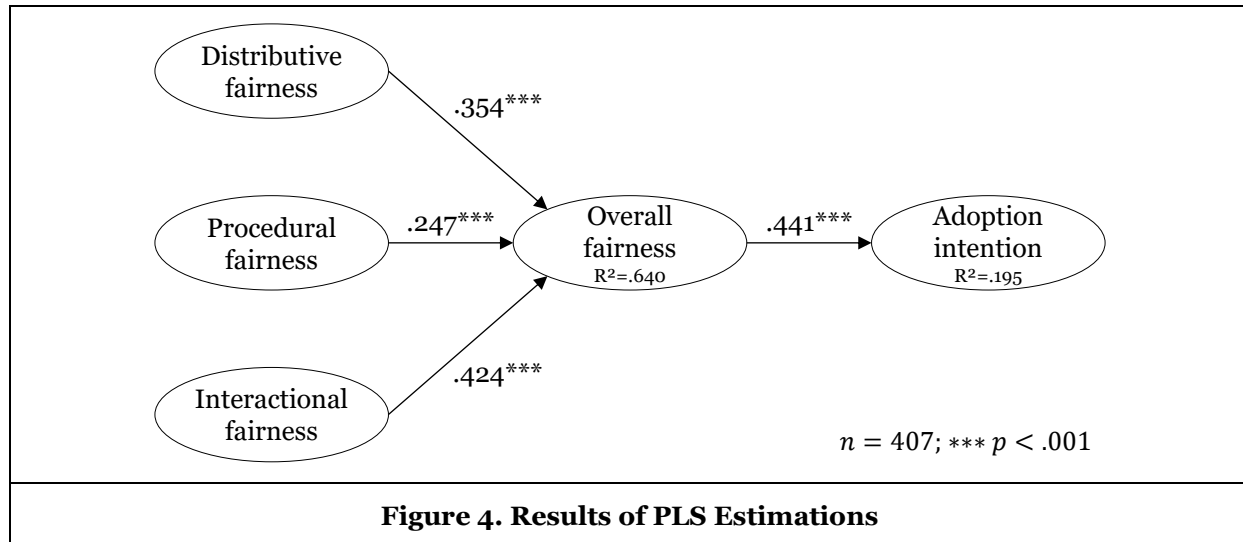
Construct	Loadings	CA	CR	AVE	(1)	(2)	(3)	(4)	(5)
(1) <i>Distributive fairness</i>	.786-.889	.898	.913	.713	.844				
(2) <i>Procedural fairness</i>	.809-.876	.901	.903	.717	.227	.847			
(3) <i>Interactional fairness</i>	.714-.860	.897	.901	.623	.416	.477	.789		
(4) <i>Overall fairness</i>	.811-.914	.916	.920	.751	.598	.547	.689	.867	
(5) <i>Adoption intention</i>	.948-.969	.972	.973	.924	.591	.235	.341	.441	.961

Note: Elements in grey boxes represent the square root of AVE for the corresponding construct.

Table 1. Factor Loadings, Consistency and Validity Criteria, and Correlation Matrix.

We estimated our research model using PLS-SEM. Based on Hair et al. (2016); Hair et al. (2011); Hair et al. (2013), we conducted a bootstrapping procedure with 5,000 subsamples to test the significance of the path coefficients in the structural equation model. We displayed the results in Figure 4. Based on our estimations, the hypothesized positive effects of *distributive fairness* (.354, $p<.001$), *procedural fairness* (.246, $p<.001$), and *interactional fairness* (.425, $p<.001$) on *overall fairness* proved to be significant.

Moreover, the positive effect of *overall fairness* on *adoption intention* (.441, $p < .001$) also proved to be significant. Therefore, the hypotheses of the PLS model can be supported. Our estimated model led to an R^2 of .639 for *overall fairness* and an R^2 of .195 for *adoption intention*. We also tested for differences in the proposed model between the experimental settings by conducting multigroup-analyses (MGA), which yielded no significant differences. To avoid common method bias, we calculated variance inflation factors (VIF) for the constructs in our model. All VIF were below the threshold of 3.3 as suggested by Kock (2015). Thus, we assume that no systemic errors occurred among our measured variables.



Post-hoc analysis

Although not part of the original model, we also conducted a post-hoc analysis to test moderating effects between the three fairness dimensions to enhance the robustness of our results. Moreover, there are insights in research that interaction effects between the fairness dimension can occur (e.g., Bosse et al., 2009). Therefore, we estimated our model with each of the six conceivable moderation effects (i.e., distributive fairness moderating the effect of procedural/interactional fairness on overall fairness, procedural fairness moderating the effect of distributive/interactional fairness on overall fairness, and interactional fairness moderating the effect of distributive/procedural fairness on overall fairness). However, our results yielded no significant moderation effects (all $p > .05$). Therefore, we follow that moderation between the three fairness dimensions does not occur in our case and that our model is robust. We also tested for correlations between distributive, procedural, and interactional fairness as well as their respective items. This analysis also yielded no significant results which, in line with Petter et al. (2007), allows us to preclude a misconception in our model regarding the three dimensions being reflective of overall fairness.

Discussion

This study sought to shed light on users' fairness perceptions of an online service and their influence on their adoption intentions. Following the tridimensional conceptualization of fairness, we tested the influence of users' perceptions of distributive, procedural, and interactional fairness on their overall fairness assessment of an online service and, subsequently, their intentions to adopt the given service. Our results are noteworthy for two main reasons. Firstly, while the tridimensional character of fairness is well established in the literature (Bosse et al., 2009; Colquitt, 2001), existing studies on fairness, particularly in IS, often only consider one of the three dimensions (e.g., Wagner et al., 2021). Our findings show that, indeed, all three dimensions matter when users evaluate an online service's fairness (Carr, 2007). Users' positive perceptions of each of the three dimensions positively affect their overall fairness assessment. The comparatively high explanatory power of overall fairness through distributive, procedural, and interactional fairness ($R^2 = .640$) further highlights the importance of a holistic, multidimensional assessment of users' fairness perceptions beyond singular conceptualizations.

Having manipulated an online service's payment feature, our results suggest that users' perceptions of distributive fairness are positively influenced by a comparatively better outline of the outcome of the exchange between the user and the service provider. Thus, users evaluate whether their (monetary) costs associated with using the service are deemed fair in relation to the promised benefits. This supports well-established findings from studies on equity theory (Adams, 1965; Wagner et al., 2021) and service usage (Carr, 2007). Questions related to the role and design of paywalls (Oh et al., 2016) are particularly pressing for the media industry in light of its monetization problem (Lobigs, 2018). The design of paywalls has been primarily studied for their choice or quantity restrictions (Rufell et al., 2020). Our results advance the discussion by suggesting that the perceived distributive fairness of the service exchange (in the context of a paywall) plays an important role in users' overall fairness judgment.

Since numerous online services rely on the collection and analysis of personal data, our findings additionally show that procedural aspects of the exchange, such as the transparency of data handling practices and the opportunities for users to control how their personal data (e.g., cookies) is being used, plays a vital part in users' fairness perceptions. This points to the importance of the design of cookie consent layers regarding the information provided and the need for users to control and change their data-sharing preferences (Mager & Kranz, 2021). Thus, giving users more power over how and what data is being used positively affects their fairness perceptions, supporting previous findings regarding the design of cookie consent layers sensitive to values such as trust, transparency, and autonomy (Krasnova et al., 2010; Millett et al., 2001). Additionally, users' overall fairness assessment is also positively impacted by interactional fairness, our findings suggest. The positive influence of interactional fairness does not only emphasize the importance of considering interactional fairness besides the historically established dimensions of distributional and procedural fairness (Bies & Moag, 1986) but also the applicability of the construct in the context of online services beyond more personal and intimate encounters in organizations. Even when interacting digitally with a service provider, users deem a more personal interaction with the provider and the possibility of getting in touch with customer agents as a crucial factor influencing fairness perceptions.

Secondly, the finding of our experiment suggests a positive influence of users' overall fairness perceptions on their adoption intention. Accordingly, users who perceive an online service as more fair are also more likely to adopt the service. The results highlight the importance of fairness perceptions for users' adoption rationales in the context of online services (Carr, 2007). Fairness might even play a more outsized role than previously expected, given that almost 20% of the variance in adoption intention ($R^2=.195$) could be explained by users' overall fairness perceptions. While the value suggests that there are certainly also other factors at play influencing users' adoption decisions, it also implies that improving users' fairness perceptions has a significantly positive influence. This finding complements the results of different studies that have previously established the connection of overall fairness perceptions with positive outcomes (e.g., Jones & Martens, 2009; Seiders & Berry, 1998; Severt & Rompf, 2006). We thereby show that improving users' fairness perceptions cannot only improve aspects such as trust or privacy concerns (Krasnova et al., 2014) that indirectly benefit providers of online services but directly improve economic metrics such as increased adoption intention. In contrast to normative discussions around fairness viewing its establishment as an obligation per se (Phillips, 1997), our study also provides empirical evidence on the economic benefits of firms treating stakeholders fairly, or providers and their users in the context of online services, since they will reciprocate (Bosse et al., 2009). Thus, our study acts as a stepping stone into discussions of how firms can do well by doing fair and use technologies for the social good.

Contributions, Implications, and Limitations

Theoretical Contributions

The theoretical contribution of our study is threefold: First, this study contributes to existing research by further establishing the connection between fairness and user perceptions in the context of online services. It provides evidence that different designs of such services target and positively influence users' estimations of fairness. As implied before, our study highlights that the different dimensions of fairness should not be understood as isolated factors relevant to users but as important individual factors that jointly drive the overall estimation of a service being fair from a user's perspective. Thereby we contribute to literature by synthesizing theories and concepts from social psychology (Colquitt, 2001; Colquitt et al., 2013) and IS (Bichler et al., 2021; Joshi, 1989; Krasnova et al., 2014) and prove their relevance based on our empirical

findings. This is especially important from a management research perspective as it shows that the adoption of online service is not solely a question of value for money but also of process transparency and feasibility of interaction between the provider and user of a service. Second, we contribute by proving that the three fairness dimensions “can be translated into specific action thereby providing a guideline for management” (Krasnova et al., 2010, p. 3). Support is provided for features of online services influencing each of the unique dimensions of fairness and overall fairness perceptions. In addition to that, the positive influence of the fairness dimensions on overall fairness can be proven, which contributes to strengthening established models in literature (Carr, 2007; Colquitt, 2001). Third, as already stated, the subject of fairness has been extensively studied in the past. However, our study differs from others in various points: Our experiment was executed in the concrete context of the relationship between private users and news service providers, contrary to the professional relationship between employee and employer, which was mostly addressed in previous research. Moreover, through our vignette study, we measured the perceived fairness of the participants before the actual conversion of a service. In this regard, the provided adaption and synthesis of TAM to user perceptions of fairness show that fairness not only influences the evaluation of the service during and following consumption but also prior to usage. Thereby, we contribute by shifting the focus of fairness research on a usage and post-usage toward a pre-usage phase. Finally, our study adds to the growing body of IS literature concerned with the use of technologies for social good and social impact (Walsham, 2012; Young et al., 2019). Fairness can not only improve the perceptions of a firm’s users by treating them fairly but might even positively improve adoption rates. Since the contribution of firms is a sine qua non for the successful shift towards social impact, highlighting avenues of how fairness can benefit users and service providers can be fruitful for further discussions.

Implications for Practice

From a practical perspective, our results provide valuable implications for practitioners about how to design online services to increase the perceived fairness of users and thereby enhance their likeliness to adopt the service. Based on our findings, the following advice can be given: First, with regard to the payment feature, more information about the particularities and content of the offer or subscription should be given. To influence users’ fairness perception on a distributive level, companies should thus focus on designs aiming to make users perceive the exchange through the service as beneficial. For example, this can include information about the underlying work effort of the service in order to provide the offer, target users’ need to be altruistic, and provide customers with a benchmark regarding competitors’ offers or customers’ experiences. It is important to mention that the fairness perception of an online service on a distributive level can be affected without changing the basic conditions of the transaction (e.g., the price of the service), which can be a significant advantage for companies. Second, privacy features (e.g., cookie notifications) also play an important role. Our study recommends that customers appreciate a notification with detailed information about reasons for the usage of data, pointing out how they benefit the user and details on how data will be processed. This positively affects their perception of procedural fairness by providing the customers with knowledge and control. Companies are thus advised to be open and transparent towards their customers and educate them about data processing. Third, practitioners should provide communication features that enable users to interact with the providers of the service. This gives users the impression of having the possibility to address problems and makes the service provider accountable from a user’s perspective, thus enhancing interactional fairness. Being perceived as fair from a user perspective will become even more important in the future since this enhances the chance for companies to be granted access to valuable customer data in an increasingly complex regulatory and technical environment. However, firms should treat our results with caution when interpreting them as a sign that fairness was merely a matter of communication rather than actual fair distributions and processes.

Limitations

Like any research, this study is not without its limitations, especially owing to our methodological approach. First, our experiment was performed online. Although precautions were taken and quality criteria were applied to ensure participants understood the instructions and the scenario (e.g., attention checks and manipulation checks), this condition is still prone to uncontrollable influences and deviations. This includes, for example, connectivity issues, which could bias the presentation of the content or distraction of participants. Furthermore, the probands were given no specification on which device to participate in the experiment. Consequently, it was possible for them to use different screen sizes, such as a laptop or iPad.

Even though the mockups used to display the online service were designed to fit all kinds of devices, this still leaves room for possible influences regarding the perception. One possible solution to these issues, which could be tested in future research, might be to set the experiment in a more controllable environment, such as a laboratory, or limit the participation of the experiment to one device. This way, possible influences of the nature of the online experiment could be circumvented. Second, the experimental setting in a pre-consumption phase has implications for the operationalization of the fairness dimensions. While the mockups of the features each distinctly address each fairness dimension, the fact that, for example, the payment feature presents the expected inputs (price) and outputs (value) of the exchange, perceived distributive fairness necessarily includes communicative aspects. Third, another limitation revolves around possible interaction or moderating effects of the consumption of multiple service features on the perception of fairness. While that subject is shortly touched upon in the post-hoc analysis, it is not investigated in detail since it is not part of the original model. For further examination, more groups could be added to the experiment exhausting all possibilities of treatment combinations of the service features. Concretely, that would mean adding three additional groups where two different of the three features are manipulated in each case to the experiment. By doing so, additional data could be gathered, making a deeper analysis possible. Third, our research model was tested within the framework of one specific online service, namely an online newspaper. For further validation, an application of the research model to different types of online services is conceivable. One possible example entails music or video streaming services. Especially in the area of video streaming services, with the steady emergence of new providers, methods to attract new customers might prove to be very valuable, triggering various possibilities for future research.

Conclusion

Based on our findings, various conclusions can be drawn. First, our study shows that users' fairness perception of an online service is indeed subdivided into different dimensions (distributive, procedural, interactional, and overall fairness) and that each of them matters and contributes to users' fairness evaluation. In that context, our operationalization demonstrates that the three fairness dimensions (i.e., distributive, procedural, and interactional fairness) are all individual, independent constructs that can be represented by the designs of features of an online service (payment, privacy, and communication feature, respectively). It could be proven that these dimensions all positively influence users' perception of the overarching construct overall fairness of the service. Second, our results indicate that users' overall perception of an online service positively influences their intention to adopt the latter. By shifting the focus from users' fairness perception during and following consumption to a pre-consumption setting, we gave insights into the role fairness plays in how users perceive an online service and how fairness acts as a central predictor of adoption intention in a media context.

References

- Adams, J. S. (1965). Inequity in social exchange. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 2, pp. 267-299). Academic Press.
- Adams, J. S., & Freedman, S. (1976). Equity theory revisited: Comments and annotated bibliography. In L. Berkowitz & E. Walster (Eds.), *Advances in experimental social psychology* (Vol. 9, pp. 43-90). Academic Press.
- Agarwal, R., & Karahanna, E. (2000). Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage. *MIS Quarterly*, 24(4), 665-694.
- Alharbi, S., & Drew, S. (2014). Using the technology acceptance model in understanding academics' behavioural intention to use learning management systems. *International Journal of Advanced Computer Science and Applications*, 5(1), 143-155.
- Ambrose, M. L., & Schminke, M. (2009). The role of overall justice judgments in organizational justice research: a test of mediation. *Journal of Applied Psychology*, 94(2), 491-500.
- Aronow, P. M., Baron, J., & Pinson, L. (2019). A note on dropping experimental subjects who fail a manipulation check. *Political Analysis*, 27(4), 572-589.
- Beugre, C. D., & Baron, R. A. (2001). Perceptions of systemic justice: The effects of distributive, procedural, and interactional justice. *Journal of Applied Social Psychology*, 31(2), 324-339.

- Bichler, M., Hammerl, A., Morrill, T., & Waldherr, S. (2021). How to assign scarce resources without money: Designing information systems that are efficient, truthful, and (pretty) fair. *Information Systems Research*, 32(2), 335-355. <https://doi.org/10.1287/isre.2020.0959>
- Bies, R. J., & Moag, J. S. (1986). Interactional justice: Communication criteria for justice. In R. J. Lewicki, B. H. Sheppard, & M. H. Bazerman (Eds.), *Research on negotiation in organizations* (Vol. 1). JAI Press.
- Blodgett, J. G., Granbois, D. H., & Walters, R. G. (1993). The effects of perceived justice on complainants' negative word-of-mouth behavior and repatronage intentions. *Journal of Retailing*, 69(4), 399-428.
- Bosse, D. A., Phillips, R. A., & Harrison, J. S. (2009). Stakeholders, reciprocity, and firm performance. *Strategic Management Journal*, 30(4), 447-456.
- Brockner, J., Ackerman, G., Greenberg, J., Gelfand, M. J., Francesco, A. M., Chen, Z. X., . . . Kirkman, B. L. (2001). Culture and procedural justice: The influence of power distance on reactions to voice. *Journal of Experimental Social Psychology*, 37(4), 300-315.
- Cahn, A., Alfeld, S., Barford, P., & Muthukrishnan, S. (2016). An empirical study of web cookies. *International Conference on World Wide Web*, Montreal.
- Carr, C. L. (2007). The FAIRSERV model: Consumer reactions to services based on a multidimensional evaluation of service fairness. *Decision Sciences*, 38(1), 107-130.
- Charness, G., Gneezy, U., & Kuhn, M. A. (2012). Experimental methods: Between-subject and within-subject design. *Journal of Economic Behavior & Organization*, 81(1), 1-8.
- Chiu, C.-M., Lin, H.-Y., Sun, S.-Y., & Hsu, M.-H. (2009). Understanding customers' loyalty intentions towards online shopping: an integration of technology acceptance model and fairness theory. *Behaviour & Information Technology*, 28(4), 347-360.
- Cho, Y., Im, I., & Hiltz, R. (2003). The impact of e-services failures and customer complaints on electronic commerce customer relationship management. *The Journal of Consumer Satisfaction, Dissatisfaction and Complaining Behavior*, 16, 106-118.
- Colquitt, J. A. (2001). On the dimensionality of organizational justice: A construct validation of a measure. *Journal of Applied Psychology*, 86(3), 386-400.
- Colquitt, J. A., Conlon, D. E., Wesson, M. J., Porter, C. O., & Ng, K. Y. (2001). Justice at the millennium: a meta-analytic review of 25 years of organizational justice research. *Journal of Applied Psychology*, 86(3), 425-445.
- Colquitt, J. A., Rodell, J. B., Zapata, C. P., Wesson, M. J., Scott, B. A., Long, D. M., & Conlon, D. E. (2013). Justice at the millennium, a decade later: A meta-analytic test of social exchange and affect-based perspectives. *Journal of Applied Psychology*, 98(2), 199-236.
- Cox, J., & Dale, B. G. (2002). Key quality factors in web site design and use: an examination. *International Journal of Quality & Reliability Management*, 19(7), 862-888.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340.
- Fehr, E., & Gächter, S. (2000). Fairness and retaliation: The economics of reciprocity. *Journal of Economic Perspectives*, 14(3), 159-181.
- Fehr, E., & Schmidt, K. M. (1999). A Theory of fairness, competition, and cooperation*. *The Quarterly Journal of Economics*, 114(3), 817-868.
- Folger, R., & Konovsky, M. A. (1989). Effects of procedural and distributive justice on reactions to pay raise decisions. *Academy of Management Journal*, 32(1), 115-130.
- Greenberg, J. (1989). Cognitive reevaluation of outcomes in response to underpayment inequity. *Academy of Management Journal*, 32(1), 174-184.
- Greenberg, J. (1990). Organizational justice: Yesterday, today, and tomorrow. *Journal of Management*, 16(2), 399-432.
- Greenberg, J., & Cropanzano, R. (1993). The social side of fairness: Interpersonal and informational classes of organizational justice. In R. Cropanzano (Ed.), *Justice in the workplace: Approaching fairness in human resource management* (pp. 79-103). Erlbaum.
- Hair, J. F., Hult, G. T. M., Ringle, C., & Sarstedt, M. (2016). *A primer on partial least squares structural equation modeling (PLS-SEM)*. Sage Publications.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139-152.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. *Long Range Planning*, 46(1-2), 1-12.

- Henseler, J., Ringle, C., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115-135.
- Hong, S., Thong, J. Y., & Tam, K. Y. (2006). Understanding continued information technology usage behavior: A comparison of three models in the context of mobile internet. *Decision Support Systems*, 42(3), 1819-1834.
- Johnson, J., Truxillo, D. M., Erdogan, B., Bauer, T. N., & Hammer, L. (2009). Perceptions of overall fairness: are effects on job performance moderated by leader-member exchange? *Human Performance*, 22(5), 432-449.
- Jones, D. A., & Martens, M. L. (2009). The mediating role of overall fairness and the moderating role of trust certainty in justice-criteria relationships: The formation and use of fairness heuristics in the workplace. *Journal of Organizational Behavior*, 30(8), 1025-1051.
- Joshi, K. (1989). The measurement of fairness or equity perceptions of management information systems users. *MIS Quarterly*, 13(3), 343-358.
- Kahneman, D., Knetsch, J. L., & Thaler, R. H. (1986). Fairness and the assumptions of economics. *The Journal of Business*, 59(4), S285-S300.
- Kim, H.-W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile internet: An empirical investigation. *Decision Support Systems*, 43(1), 111-126.
- Kim, T.-Y., & Leung, K. (2007). Forming and reacting to overall fairness: A cross-cultural comparison. *Organizational Behavior and Human Decision Processes*, 104(1), 83-95.
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.
- Krasnova, H., Kolesnikova, E., & Guenther, O. (2010). Leveraging trust and privacy concerns in online social networks: An empirical study. *European Conference on Information Systems*, Pretoria, South Africa.
- Krasnova, H., Veltri, N. F., & El Garah, W. (2014). Effectiveness of justice-based measures in managing trust and privacy concerns on social networking sites: An intercultural perspective. *Communications of the Association for Information Systems*, 35(4), 83-108.
- Küster, I., Vila, N., & Canales, P. (2016). How does the online service level influence consumers' purchase intentions before a transaction? A formative approach. *European Journal of Management and Business Economics*, 25(3), 111-120.
- Leventhal, G. S. (1980). What should be done with equity theory? In K. J. Gergen, M. S. Greenberg, & R. H. Willis (Eds.), *Social exchange: Advances in theory and research* (pp. 27-55). Plenum Press.
- Leventhal, G. S., Karuza, J., & Fry, W. R. (1980). Beyond justice: A theory of allocation preferences. In G. Mikula (Ed.), *Justice and social interaction: Experimental and theoretical contributions, from psychological research*. Springer.
- Lind, E. A. (2001). Fairness heuristic theory: Justice judgments as pivotal cognitions in organizational relations. In J. Greenberg & R. Cropanzano (Eds.), *Advances in organizational justice* (Vol. 56, pp. 56-88). Stanford University Press.
- Lind, E. A., & Tyler, T. R. (1988). *The social psychology of procedural justice*. Springer Science & Business Media.
- Lobigs, F. (2018). Wirtschaftliche Probleme des Journalismus im Internet. In C. Nuernbergk & C. Neuberger (Eds.), *Journalismus im Internet: Profession - Partizipation - Technisierung* (pp. 295-334). Springer.
- Mager, S., & Kranz, J. (2021). Consent notices and the willingness-to-sell observational data: Evidence from user reactions in the field. *European Conference on Information Systems*, Virtual.
- Millett, L. I., Friedman, B., & Felten, E. (2001). *Cookies and web browser design: toward realizing informed consent online* SIGCHI Conference on Human Factors in Computing Systems, Seattle, WA.
- Mohammad, J., Quoquab, F., Idris, F., Al Jabari, M., & Wishah, R. (2019). The mediating role of overall fairness perception: a structural equation modelling assessment. *Employee Relations: The International Journal*, 41(3), 614-636.
- Morris, M., & Leung, K. (2000). Justice for all? Progress in research on cultural variation in the psychology of distributive and procedural justice. *Applied Psychology*, 49(1), 100-132.
- Nguyen, T. M., & Nham, P. T. (2014). A domino effect from fairness to online customer loyalty. *DLSU Business & Economics Review*, 24(1), 84-95.
- Oh, H., Animesh, A., & Pinsonneault, A. (2016). Free versus for-a-fee: The impact of a paywall on the pattern and effectiveness of word-of-mouth via social media. *MIS Quarterly*, 40(1), 31-56.

- Ortiz, J., Young, A., Myers, M., Bedeley, R. T., Carbaugh, D., Chughtai, H., . . . Gordon, S. (2019). Giving voice to the voiceless: The use of digital technologies by marginalized groups. *Communications of the Association for Information Systems*, 45(2), 20-38.
- Pearson, K. (1900). X. On the criterion that a given system of deviations from the probable in the case of a correlated system of variables is such that it can be reasonably supposed to have arisen from random sampling. *The London, Edinburgh, and Dublin Philosophical Magazine and Journal of Science*, 50(302), 157-175.
- Petter, S., Straub, D., & Rai, A. (2007). Specifying formative constructs in information systems research. *MIS Quarterly*, 31(4), 623-656.
- Phillips, R. A. (1997). Stakeholder theory and a principle of fairness. *Business Ethics Quarterly*, 7(1), 51-66.
- Rawls, J. (1999). *A theory of justice*. Harvard University Press.
- Roy, S. K., Devlin, J. F., & Sekhon, H. (2015). The impact of fairness on trustworthiness and trust in banking. *Journal of Marketing Management*, 31(9-10), 996-1017.
- Rußell, R., Berger, B., Stich, L., Hess, T., & Spann, M. (2020). Monetizing online content: Digital paywall design and donfiguration. *Business & Information Systems Engineering*, 62(3), 253-260.
- Saprikis, V., & Avlogiaris, G. (2021). Factors that determine the adoption intention of direct mobile purchases through social media apps. *Information*, 12(11), 449.
- Seiders, K., & Berry, L. L. (1998). Service fairness: What it is and why it matters. *Academy of Management Perspectives*, 12(2), 8-20.
- Severt, D. E., & Rompf, P. D. (2006). Consumers' perceptions of fairness and the resultant effect on customer satisfaction. *Journal of Hospitality & Leisure Marketing*, 15(1), 101-121.
- Smith, A. K., Bolton, R. N., & Wagner, J. (1999). A model of customer satisfaction with service encounters involving failure and recovery. *Journal of Marketing Research*, 36(3), 356-372.
- Spiekermann, S. (2007). Perceived control: Scales for privacy in ubiquitous computing. In A. Acquisti, S. Gritzalis, C. Lambrinoudakis, & S. di Vimercati (Eds.), *Digital Privacy: Theory, Technologies, and Practices* (pp. 289-304). Auerbach Publications.
- Tabibnia, G., & Liebermann, M. D. (2007). Fairness and cooperation are rewarding: Evidence from social cognitive neuroscience *Annals of the New York Academy of Sciences*, 90-101.
- Taylor, S., & Todd, P. A. (1995). Understanding information technology usage: A test of competing models. *Information Systems Research*, 6(2), 144-176.
- Thibaut, J. W., & Walker, L. (1975). *Procedural justice: A psychological analysis*. L. Erlbaum Associates.
- Ting, S.-C. (2013). Service fairness scale: Development, validation, and structure. *International Journal of Marketing Studies*, 5(6), 25-36.
- Wagner, A., Wessels, N., Brakemeier, H., & Buxmann, P. (2021). Why free does not mean fair: Investigating users' distributive equity perceptions of data-driven services. *International Journal of Information Management*, 59, 102333.
- Waisbord, S. (2018). Truth is what happens to news. *Journalism Studies*, 19(13), 1866-1878.
- Walsham, G. (2012). Are we making a better world with ICTs? Reflections on a future agenda for the IS field. *Journal of Information Technology*, 27(2), 87-93.
- Wang, C. L., Richard Ye, L., Zhang, Y., & Dat-Dao, N. (2005). Subscription to fee-based online services: What makes consumers pay for online content? *Journal of Electronic Commerce Research*, 5(4), 304-311.
- Wu, L., Li, J.-Y., & Fu, C.-Y. (2011). The adoption of mobile healthcare by hospital's professionals: An integrative perspective. *Decision Support Systems*, 51(3), 587-596.
- Young, A., Selander, L., & Vaast, E. (2019). Digital organizing for social impact: Current insights and future research avenues on collective action, social movements, and digital technologies. *Information and Organization*, 29(3), 100257.
- Young, A. G. (2018). Using ICT for social good: Cultural identity restoration through emancipatory pedagogy. *Information Systems Journal*, 28(2), 340-358.
- Zhu, Y.-Q. Z., & Chen, H.-G. (2009). Service fairness and customer satisfaction in internet bank: From a trust and perceived customer value perspective. *Americas Conference on Information Systems*, San Francisco, CA.