

The Hidden Cost of Data Collection: Data Collection Decreases Consumer-Company Interactions

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(Article begins on next page | Il contributo inizia nella pagina successiva)

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Journal of Interactive Marketing

**The Hidden Cost of Data Collection: Data Collection Impairs
Consumer-Brand Interaction Outcomes**

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The Hidden Cost of Data Collection:

Data Collection Decreases Consumer-Company Interactions

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Statements and Declarations

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The data that support the findings of this article are publicly available in Researchbox (<https://researchbox.org/4689>) and JNM's Dataverse.

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The Hidden Cost of Data Collection: Data Collection Impairs Consumer-Brand Interaction Outcomes

Abstract

The collection of consumer data has become an essential part of modern marketing practices; yet little is known about how it influences the outcomes of consumers' interactions with brands. In this research, we demonstrate that the collection of consumer data decreases trust, engagement, and purchase likelihood, impairing consumer-brand interaction outcomes. This effect occurs because the collection of consumer data diminishes the perceived reciprocity of the interaction. Providing monetary or nonmonetary benefits may not effectively eliminate the negative effect of the collection of consumer data since these benefits may not be perceived as reciprocal. However, the effect can be mitigated when reciprocity is clearly specified.

Keywords: data collection, perceived reciprocity, consumer-brand interactions, privacy

Introduction

Over the past decade, artificial intelligence (AI) has started transforming how firms operate. In the marketplace, one of AI’s most prominent applications involves the collection, processing, and classification of consumer data (Puntoni et al. 2021). Enabled by AI-powered data collection technologies, brands increasingly communicate with consumers about their data collection practices (Zwebner and Schrift 2020). Despite the widespread adoption of these practices, consumers often respond with discomfort and concern. Recent surveys reveal that nearly 90% of consumers express concerns about their digital privacy, while 68% are specifically troubled by the amount of personal data collected by companies (Harmeling 2025). These concerns have led many consumers to reduce or even discontinue their interactions with certain brands. In addition to their concerns about collected data, consumers also perceive companies’ data collection and usage practices as unfair (The European Consumer Organization 2023). Given the widespread adoption of data collection practices and growing consumer concerns about them, understanding their consequences for consumer–brand interactions have become increasingly important. Yet, research has paid limited attention to how these practices influence the outcomes of consumers’ interactions with brands. The present research addresses this gap by investigating whether and why data collection influences consumer-brand interaction outcomes.

Past research on data collection has primarily focused on exploring either consumers’ willingness to disclose personal data (e.g., Eggers et al. 2023) or their responses to firms’ targeting practices (e.g., Summers et al. 2016). Distinct from prior research, we focus on the collection of data itself. Our context mirrors the marketplace, casting brands as the primary data collectors. In this context, we examine how the collection of consumer data influences consumer-brand interaction outcomes focusing on trust, engagement, and purchase

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likelihood. We show that the collection of consumer data reduces the perceived reciprocity of the interaction, thereby impairing consumer–brand interaction outcomes. Offering something in exchange for data may not effectively enhance perceived reciprocity. However, clearly specifying reciprocity can reduce the negative effect of the collection of consumer data on consumer-brand interaction outcomes.

Our research makes two key contributions to the emerging literature on consumers' responses to big data practices. First, with the growing prevalence of data protection regulations, consumers are increasingly exposed to disclaimers about brands' data collection activities. However, prior research has offered limited insight into how such practices influence consumer–brand interactions. We demonstrate that the collection of consumer data has a negative impact on how much consumers trust, engage, and purchase. Second, we advance our understanding of how consumers perceive the value of their personal data. Although prior research has reported mixed findings regarding the valuation of data, our results suggest that consumers perceive their data as valuable and therefore expect to receive something in return when brands collect it. Since consumers often struggle to assess the precise value of their data, simply offering monetary or nonmonetary benefits in exchange for data may not effectively foster a sense of reciprocity. However, making reciprocity specific while collecting data can help reduce consumers' aversion to data collection. From a managerial perspective, these findings highlight that while the collection of consumer data can offer strategic benefits and competitive advantage, it may also carry hidden costs by impairing consumers' interaction with brands.

Conceptual Background

Data Collection

The flow of personal information from the individual to the other parties, also referred to as privacy (Nissenbaum 2010), has been a topic of interest especially with the proliferation of data collection, classification and storage technologies. Early research primarily examined individuals’ concerns about the potential access, collection, and use of their personal information by others (e.g., Smith et al. 1996). More recently, the widespread implementation of data protection regulations has increasingly required consumers to make decisions about sharing their personal data. Consequently, much of the consumer privacy literature has focused on understanding the antecedents of data disclosure. For instance, Mosteller and Poddar (2017) showed that data disclosure and protection can be influenced by promotion and prevention related behaviors. Hayes et al. (2021) demonstrated that the perceived benefits and costs of the information disclosure can be influenced by consumers’ relationships with brands, while Eggers et al. (2023) showed that these trade-offs can also be shaped by companies’ privacy strategies. Similarly, in the context of permission marketing, Krafft et al. (2017) identified cost and benefit related factors that drive consumers’ decision to grant permission. Recently, Kumar et al. (2026) showed that how the data collection request is framed (e.g., keep, provide, delete) can also influence consumers’ willingness to disclose personal data. This research stream suggests that consumers engage in a cost-benefit analysis and compare the potential advantages and disadvantages before deciding on whether to share information with other parties, also referred to as privacy calculus (Dienlin 2023). In other words, consumers think about whether the other party will reciprocate when they share personal information in voluntary data disclosure settings.

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Another stream of research examines consumer responses to firms' targeting practices. As digital technologies have expanded firms' ability to collect and process consumer data, researchers have started exploring the effectiveness of data-driven targeting strategies. For instance, Lambrecht and Tucker (2013) explored the effectiveness of retargeting which is the practice of presenting products that have been viewed but not purchased before. Their findings suggest that retargeting may not work better than generic ads if consumers have not constructed their preferences. Extending this work, Summers et al. (2016) explored behavioral targeting whereby advertisements are tailored based on consumers' online behavioral histories. Their findings show that behavioral ads can serve as implied social labels which can shape how consumers act, if the targeting is at least moderately accurate. Advancing these findings, Yi and Warren showed that personalized offerings backfire when they are associated with undesirable identity or behavior (2025). Recently, focusing on demographic targeting, Shaddy et al. (2026) demonstrated that consumers consider demographic targeting as a discriminatory practice, which decreases their support for the brand. Taken together, these findings suggest that consumers do not always respond positively to the targeting strategies employed by brands.

Integrating these research streams, here we explore how consumers respond to the collection of personal data. Our research departs from earlier research on information disclosure and targeting in two ways. First, rather than exploring the effect of various factors on information disclosure, we explore the consequences of the collection of consumer data. In today's digital landscape, the collection of consumer data has almost become the default practice, often occurring with minimal consumer control over personal information. Understanding the consequences of this practice is as important as examining the antecedents of active disclosure. Yet this question has received relatively limited attention in prior research.

Second, exploring consumers’ reactions to targeting reveals important aspects related to consumer-brand interactions. However, targeting implies that brands have already collected and processed consumer data, and consumers are only being exposed to the consequences of data classification and processing. In other words, this research stream primarily examines the later stages of the collection of consumer data. In contrast, our research takes a step back to investigate how the mere act of collecting consumer data shapes what consumers think and how they behave. We predict that the collection of consumer data impairs consumer-brand interaction outcomes.

Data Collection and Social Exchange

Our prediction is grounded in social exchange theory (Blau 1964). Social exchanges consist of a series of interactions that can evolve into a relationship characterized by trust, loyalty and commitment (Cropanzano and Mitchell 2005). These interactions are inherently interdependent (Blau 1964). Each party provides resources to the exchange, and each party’s behavior depends on the other’s actions, which sustain the relationship over time (Blau 1964; Molm 1994). As a result, social exchanges create a sense of obligation to reciprocate (Cropanzano and Mitchell 2005). This reciprocity norm is also central to consumers’ relationships with brands since consumer-company relationships encompass both social and economic exchange elements (Bagozzi 1975).

To build and maintain successful consumer-brand relationships, there should be a balance between what consumers give and what they receive in return (Fournier et al. 1998). When individuals think that their inputs are not reciprocated by the other party, their willingness to provide benefits to the relationship decreases (Falk and Fishbacher 2006). For instance, when companies put extra effort into their operations, consumers tend to reciprocate it even in the

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absence of direct personal benefit (Morales 2005). Conversely, when companies fail to deliver the service they promise, consumers feel betrayed and respond negatively (Tsai et al. 2014).

Consumers may not only expect reciprocity but also feel entitled to receive a preferential treatment in exchange for their inputs (Boyd and Helms 2005; Campbell et al. 2004). Research suggests that this sense of entitlement, which could be driven by brands' actions, such as customer prioritization strategies, preferential treatment (e.g., free upgrades or delight offers), or even pricing, can influence how consumers behave in their interactions with companies. For example, entitlement can increase customers' opportunistic behavior (Polyakova et al. 2020), willingness to seek revenge when retailers stop offering them (Li and Fumagalli 2022), and willingness to purchase products that are associated with social costs (e.g., environmental harm; Lee and Winterich 2022). Together, these findings suggest that consumers tailor their responses in line with what they receive from brands, and their behavior may not always align with brands' interests (Wetzel et al. 2014).

In addition to money, goods, services, love, and status (Blau 1964; Cropanzano and Mitchell 2005), information is also considered to be one of the valuable resources exchanged in social and economic interactions (e.g., Foa and Foa 1974; Cheshire 2007; Urbonavicius et al. 2021). Over recent decades, personal information has been increasingly and rapidly digitized. Information that was once maintained in physical form, such as financial transactions or medical records, is now predominantly stored as digital data (Morewedge et al. 2021). At the same time, digital technologies have vastly expanded the amount of data consumers generate through their daily activities. Firms increasingly recognize the economic value of these data and leverage them as strategic resources (Grewal et al. 2021). Consequently, personal data

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has evolved into an important intangible resource that underlies many exchanges between consumers and firms.

In a classical consumer–brand interaction, each party voluntarily provides resources to the relationship and expects to receive something of comparable value in return (e.g., Dahl, Honea, and Manchanda 2005; Giesler 2006; Gouldner 1960). For instance, consumers are willing to pay extra fees for additional services offered by brands with which they have an exchange relationship (Aggarwal 2004). In such cases, brands deliver more benefits and consumers reciprocate through monetary compensation, preserving balance in the exchange. In today’s digital marketplace, however, brands increasingly acquire value from consumers through the collection and storage of personal data, often before any transaction occurs. Typically, consumers encounter privacy notices, privacy policies, or subscription requests at the outset of their digital journey, making firms' data collection practices salient. Importantly, these interactions frequently occur before consumers receive any tangible benefits from the brand or complete a purchase.

From a social exchange perspective, the collection of personal data constitutes a transfer of valuable resources from consumers to firms. Because consumers provide something of value without receiving an immediate benefit in return, data collection may create an imbalance in the exchange and reduce perceptions of reciprocity. As perceived reciprocity declines, consumers may evaluate the interaction less favorably, resulting in lower trust, engagement, and purchase intentions.

H1: The collection of consumer data impair consumer–brand interaction outcomes. Specifically, the presence (vs. absence) of data collection reduces consumers’ trust, engagement, and purchase likelihood.

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H2: The negative effect of the collection of consumer data on consumer–brand interaction outcomes is mediated by perceived reciprocity. The presence (vs. absence) of data collection decreases the perceived reciprocity of the interaction, which in turn reduces consumers’ trust, engagement, and purchase likelihood.

Reciprocity in Data Collection Settings

In consumer–brand relationships, perceived reciprocity influences both how much consumers contribute to the relationship and how they evaluate it (Clark and Mills 1993). The norm of reciprocity suggests that individuals expect benefits that match the value they provide to an exchange partner (Gouldner 1960). Applied to data collection contexts, this perspective highlights two central elements of the exchange: the data firms collect from consumers, and the benefits consumers receive in return. These elements jointly shape the perceived reciprocity of the interaction. Accordingly, understanding perceived reciprocity in data collection contexts requires examining the practices through which firms collect consumer data as well as the benefits they provide in exchange (Tomaino et al. 2023).

Brands typically state that they collect personal data while informing their consumers about data collection. Although the content and format of such disclosures vary considerably (e.g., D’assergio et al. 2025), brands have recently started explicitly listing the categories of information they collect, rather than simply stating that data are collected (Kozah and Valenzuela 2026), with the goal of increasing transparency in line with General Data Protection Regulations (GDPR). We highlight the breadth of data collection as a key construct, based on how broad the scope of this data collection is. Some brands may cover a broader scope, including personally identifiable information (e.g., name, email address, home address, phone number), transactional data (e.g., purchase history, payment methods), and

behavioral data (e.g., browsing history, time spent on products, navigation paths, device and browser information). Others may have a narrower scope of data collection, limited primarily to transactional, personal, or behavioral data. For instance, Whatsapp reports collecting data about users' accounts (e.g., phone number, profile name and photo), devices (e.g., device model, operating system, battery level), and usage (e.g., app activity, performance). In contrast, Signal Messenger states that it only collects the phone number, account creation date, and last connection date.

From a social exchange perspective, any collection of personal data constitutes a transfer of value from consumers to brands. Even when the scope of data collection is narrow, consumers provide a resource to their exchange partner. However, as the scope of data collection expands, consumers may perceive themselves as contributing greater value to the exchange. When brands collect information from multiple domains of consumers' lives, the perceived balance of the exchange between consumers and brands may decrease. Thus, increasing the scope of data collection can reduce perceived reciprocity and, in turn, impair the interaction outcomes.

H3a: The presence of data collection (vs. absence) reduces consumers' trust, engagement, and purchase likelihood, regardless of whether the scope of data collection is narrow or broad.

H3b: Increasing the scope of data collection further reduces consumer–brand interaction outcomes by decreasing perceived reciprocity.

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How can companies mitigate the hidden costs?

In exchange for collecting consumer data, brands also provide various benefits that can be either monetary or nonmonetary. For instance, Sephora collects purchase history, beauty preferences, skin type, and product reviews, and provides personalized product recommendations. Similarly, Target collects information such as purchase history, location data, and shopping preferences and, in return, offers personalized coupons, cashback rewards, and targeted promotions. Other benefits provided by brands may involve rewards, exclusive features, discounts, personalized insights about consumer behavior. For example, Spotify Wrapped summarizes users' listening habits at the end of each year. From a social exchange perspective, these benefits may aim to restore balance in the exchange by compensating consumers for collecting their personal information. However, we propose that such benefits may fail to increase perceived reciprocity since consumers often lack a clear and consistent understanding of the value of their personal data.

Prior research in privacy and targeting offers mixed evidence regarding how consumers value their personal data. Some studies suggest that consumers undervalue their data (Beresford et al. 2012; Winegar and Sunstein 2019), whereas others indicate that consumers have started recognizing how valuable their data is (Marthews and Tucker 2017) and assign substantial worth to it (Hann et al., 2007). More recently, Tomaino et al. (2023) demonstrate that consumers have intransitive preferences when valuing their personal information, assigning greater value when exchanged for money than when exchanged for goods. These findings suggest that consumers lack a stable and consistent understanding of the value of their personal data.

Insights from extant research are consistent with the idea that digitization of personal information has blurred the boundaries of data ownership (Morewedge et al. 2021). As

personal data have become an intangible resource, consumers have difficulties in understanding the boundaries of data collection (Lefkeli et al. 2022), the precise value of data (Acquisti et al. 2015), and what constitutes fair compensation for sharing it (Tomaino et al. 2023). As a result, when brands offer benefits to compensate consumers for collecting their personal data, consumers may be unable to assess the value of the benefits they receive relative to the value of the personal data collected by the brand. Such comparisons are inherently difficult because personal data and the benefits offered by brands also differ in form, making it challenging to assess whether the exchange is balanced. Consequently, simply offering benefits may not effectively enhance perceived reciprocity. In contrast, explicitly specifying both the information collected and the benefits provided in return may facilitate this comparison. Thus, making the terms of the exchange more specific can increase perceived reciprocity, improving interaction outcomes.

H4: The presence of data collection (vs. absence) reduces consumers’ trust, engagement, and purchase likelihood, regardless of monetary or nonmonetary benefits offered in return for data collection.

H5: Making the exchange more specific mitigates the negative effect of data collection on consumer–brand interaction outcomes by increasing perceived reciprocity.

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Table 1. Selected research on data collection

Authors	Context	IV & Moderator	Mediator	DV	Major Finding
Eggers et al. (2023)	Privacy	Data collection, storage, use, transparency, control Information sensitivity and interaction intensity in the industry Service fee		Acceptance of data collection	All privacy elements (information collection, storage, use, transparency and control) matter to consumers, even when there is a trade-off with service fee. In industries with high information sensitivity, data collection and use matter more. When interaction intensity is low, more transparency about privacy practices is required.
Hayes et al. (2021)	Targeting	Personalization Overt vs. covert data collection Brand relationship strength	Perceived benefits Perceived risks Perceived value of the disclosure	Willingness to have personal information used Brand attitudes Purchase intentions	Perceived risks (benefits) affect privacy calculus for weak (strong) brand relationships. Overt data collection influences perceived risk.
Krafft et al. (2017)	Privacy	Benefits (relevance, entertainment, information control, etc.) Costs (registration cost, intrusiveness, privacy concerns)		Grating permission for interactive marketing activities	The negative effect of privacy concerns on decision to grant permission can be lessened by increasing personal relevance and entertainment value of communication.
Kumar et al. (2026)	Privacy	Data request (provide, keep, delete)	Enactment autonomy & consumer data vulnerability	Information sharing behavior	Data requests can influence perceptions of shared autonomy and affect feelings of vulnerability and information-sharing behavior.
Lambrecht and Tucker (2013)	Targeting	Dynamic retargeting ads vs. generic brand ads Visiting review websites		Probability of conversion	Dynamic retargeting involves showing images of the products that are previously viewed on another website. Dynamically retargeted ads are less effective than their generic counterparts. This effect is reduced when consumers visit review websites.

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Mosteller and Poder (2017)	Privacy	Privacy violation experiences Perceived secondary control allowed by social media website	Privacy concerns Trust in social media websites	Social media engagement Privacy protection behavior	The effects of perceived secondary control of data and previous privacy violations on social media engagement and privacy protection behavior are mediated by trust in social media websites and privacy concerns.
Shaddy et al. (2026)	Targeting	Demographic targeting Intentionality, relevance, controllability	Appraisals of discrimination	Fairness perceptions and brand support	When consumers infer that they or others are targeted based on demographic information, perceived fairness and brand support decrease. Relevance or controllability affects appraisals of discrimination. Intentionality affects fairness perceptions and brand support.
Summers et al. (2016)	Targeting	Behavioral targeting Accuracy of targeting	Implied social labels & self-perception adjustments	Purchase intentions	The effect of behavioral targeting on self-perception and purchase intentions for the advertised product and other behaviors related to the implied label is demonstrated.
Yi and Warren (2026)	Targeting	Personalization Identity associated with the product	Embarrassment	Attitude, intentions, satisfaction, ad engagement	Personalization can backfire when it leads to embarrassment.
Our research	Data collection	Data collection Scope of data collection Monetary and nonmonetary benefits Specificity of reciprocity	Perceived reciprocity	Trust, engagement, and purchase likelihood	Data collection practices reduce the perceived reciprocity of the interaction, thereby impairing consumer–brand interaction outcomes.

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Overview of Studies

We empirically tested our predictions in four experiments. Across all studies, we examined consumer–brand interaction outcomes by focusing on trust, engagement, and purchase likelihood, which represent key dimensions of consumer–brand interactions. To inform the design of our manipulations, we conducted a pilot study investigating consumers’ beliefs about brands’ data collection practices (Web Appendix A). The results revealed that, even in the absence of any information about data collection, consumers assume that brands collect consumer data. Therefore, our manipulations varied disclosures explicitly indicating whether consumer data would be collected or not collected.

In Study 1, we test our main prediction that the collection of consumer data negatively affected consumer-brand interactions by decreasing trust, engagement, and purchase likelihood (as hypothesized in H1). In Study 2, we provide empirical support for our proposed mechanism that the collection of consumer data decreases perceived reciprocity of the interaction, which impairs the interaction outcomes (as hypothesized in H2). Further, we demonstrate that increasing the scope of the collection of consumer data intensifies the negative consequences (as hypothesized in H3a and H3b). In Study 3, we show that providing monetary or nonmonetary benefits in return may not effectively increase the perceived reciprocity of the interaction and improve the outcomes (as hypothesized in H4). Finally, in Study 4, we show that the effect can be mitigated when the collected data and benefit received from the brand are clearly specified (as hypothesized in H5). In each study, in line with our preregistration, participants were excluded from the analyses if they did not complete the study or failed to pass the initial screening question and the attention check.

Study 1

The primary objective of Study 1 was to test the effect of the collection of consumer data on customers’ interactions with the brands. We predicted that the collection of consumer data would negatively influence trust, engagement, and purchase likelihood.

Methods

Two hundred and one participants took part in the study. Two participants did not finish the study, two participants failed to pass the attention check question, leaving us with a final sample of one hundred ninety-seven (Connect, 45.7% female, $M_{age} = 41.02$ years, <https://aspredicted.org/d93f-52gw.pdf>). The study employed one-factor between-subjects design (data collection: present vs. absent). Participants were asked to imagine they were planning a hiking trip and considering buying a new backpack for this trip. While browsing online, they came across with the brand Terra known for its durable backpacks. They clicked on the website and started exploring the available products. In the data collection present condition, they were additionally informed that the brand was collecting data on website visitors, while in the data collection absent condition they were informed that the brand was not collecting data (please see Web Appendix A for the pretest of our manipulation). Then, all participants completed the brand trust scale (Chaudhuri and Holbrook 2001; 1 = “strongly disagree”, 7 = “strongly agree”, $\alpha = .96$), engagement scale (adapted from Villanova and Matherly 2024; 1 = “strongly disagree”, 7 = “strongly agree”, $r = .93$), and indicated how likely they would be to purchase a backpack on a 100-point slider scale (anchored at 50, 0 = “very unlikely”, 100 = “very likely”, see Appendix B for the items). Finally, they responded to an attention check question that asked them to pick the product mentioned in the shopping scenario.

Results and Discussion

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Trust. A one-way ANOVA reveals that participants in the data collection present condition trusted the brand less than those in the data collection absent condition ($M_{\text{data collection present}} = 4.37$, $SD_{\text{data collection present}} = 1.29$; $M_{\text{data collection absent}} = 5.10$, $SD_{\text{data collection absent}} = 1.14$; $F(1, 195) = 17.67$, $p < .001$, $\eta^2 = .083$).

Engagement. A one-way ANOVA reveals that participants in the data collection present condition were less willing to engage with the brand compared to those in the data collection absent condition ($M_{\text{data collection present}} = 3.78$, $SD_{\text{data collection present}} = 1.57$; $M_{\text{data collection absent}} = 4.55$, $SD_{\text{data collection absent}} = 1.43$; $F(1, 195) = 12.84$, $p < .001$, $\eta^2 = .062$).

Purchase Likelihood. A one-way ANOVA reveals that participants in the data collection present condition were less likely to purchase a product compared to those in the data collection absent condition ($M_{\text{data collection present}} = 54.60$, $SD_{\text{data collection present}} = 25.23$; $M_{\text{data collection absent}} = 65.87$, $SD_{\text{data collection absent}} = 19.99$; $F(1, 195) = 12.06$, $p < .001$, $\eta^2 = .058$).

Results of Study 1 provided support for our prediction that consumers' relationships with brands are negatively influenced by data collection practices. When brands collect data on consumers, consumers' trust in brands decreases, they become less likely to engage with the brands and purchase a product from them.

Study 2

Study 2 had two main objectives. First, it aimed to provide evidence regarding the underlying mechanism. We predicted that the collection of consumer data decreases the perceived

reciprocity of the interaction, impairing trust, engagement, and purchase likelihood. To test our prediction, we measured the perceived reciprocity. Second, it aimed to explore how the scope of data collection, rather than its mere presence or absence, affects consumer responses. To this end, we implemented broad and narrow scope conditions and predicted that a broader scope would intensify the negative effects.

Methods

Three hundred and three participants took part in the study. Three participants failed to pass the attention check question, leaving us with a final sample of three hundred (Connect, 52% female, $M_{age} = 41.02$ years; <https://aspredicted.org/fby9-4q3d.pdf>). The study employed one-factor between-subjects design (data collection: broad scope, narrow scope, absent). Similar to Study 1, all participants were asked to imagine browsing backpacks on a brand’s online store. In the broad scope condition, participants were informed that the brand collects data on various categories such as name, purchase history, online engagement metrics. In the narrow scope condition, participants were informed that the brand collects data only regarding the purchase history, while participants in the data collection absent condition were informed that the brand does not collect data (Table 2). Afterwards, participants were asked to rate the perceived reciprocity of their interaction with the brand (adapted from Pervan, Bove, and Johnson 2009) and completed brand trust and engagement scales as well as indicating purchase likelihood. Finally, they rated the extent to which they think that the brand collected data, which served as a manipulation check, and responded to an attention check question as in Study 1.

Table 2. Stimuli used in Study 2

Broad Scope Data Collection	Narrow Scope Data Collection	Data Collection Absent
Imagine you are planning a hiking trip this weekend and need a new	Imagine you are planning a hiking trip this weekend and need a new	Imagine you are planning a hiking trip this weekend and need a new

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backpack. While browsing online, you come across Terra, a brand renowned for its durable backpacks. You click on the website and start exploring available products. Please note that Brand Terra collects the following data on website visitors: • Full name, email, phone number, home address • Purchase history, browsing history, time spent on each product • Clicks, scrolls, mouse movement, pages visited, time spent on each page, navigation paths through the site • Device type, browser type and version, location data, IP address, language preferences, referring website or URL • Frequently used payment methods	backpack. While browsing online, you come across Terra, a brand renowned for its durable backpacks. You click on the website and start exploring available products. Please note that Brand Terra collects the following data on website visitors: • Purchase history, browsing history, time spent on each product	backpack. While browsing online, you come across Terra, a brand renowned for its durable backpacks. You click on the website and start exploring available products. Please note that Brand Terra does not collect data on website visitors, including browsing behavior.
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Results and Discussion

Manipulation check. A one-way ANOVA reveals that our data collection manipulation was successful ($F(2, 297) = 178.87, p < .001, \eta^2 = .546$). Participants in the broad scope data collection condition ($M_{\text{broad scope}} = 6.61, SD_{\text{broad scope}} = .82$) perceived the brand to be collecting more data compared to the ones in the narrow scope data collection ($M_{\text{narrow scope}} = 5.78, SD_{\text{narrow scope}} = 1.15, p < .001$) and data collection absent conditions ($M_{\text{data collection absent}} = 2.97, SD_{\text{data collection absent}} = 2.02, p < .001$). The difference between absent and narrow scope data conditions was also significant ($p < .001$).

Trust. A one-way ANOVA reveals significant differences across conditions ($F(2, 297) = 65.51, p < .001, \eta^2 = .306, a = .96$). Participants in the broad scope condition ($M_{\text{broad scope}} =$

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2.92, $SD_{\text{broad scope}} = 1.54$) trusted the brand less than the ones in the narrow scope ($M_{\text{narrow scope}} = 4.33$, $SD_{\text{narrow scope}} = 1.14$, $p < .001$) and data collection absent conditions ($M_{\text{data collection absent}} = 5.03$, $SD_{\text{data collection absent}} = 1.25$, $p < .001$). The difference between data collection absent and narrow scope conditions was also significant ($p < .001$).

Engagement. A one-way ANOVA reveals significant differences across conditions ($F(2, 297) = 41.65$, $p < .001$, $\eta^2 = .219$, $r = .93$). Participants in the broad scope condition ($M_{\text{broad scope}} = 2.49$, $SD_{\text{broad scope}} = 1.54$) engaged with the brand less than the ones in the narrow scope ($M_{\text{narrow scope}} = 3.50$, $SD_{\text{narrow scope}} = 1.39$, $p < .001$) and data collection absent conditions ($M_{\text{data collection absent}} = 4.36$, $SD_{\text{data collection absent}} = 1.41$, $p < .001$). The difference between data collection absent and narrow scope conditions was also significant ($p < .001$).

Purchase Likelihood. A one-way ANOVA reveals significant differences across conditions ($F(2, 297) = 51.47$, $p < .001$, $\eta^2 = .257$). Participants in the broad scope condition ($M_{\text{broad scope}} = 30.57$, $SD_{\text{broad scope}} = 28.74$) were less likely to purchase a product from the brand compared to the ones in the narrow data collection ($M_{\text{narrow scope}} = 50.72$, $SD_{\text{narrow scope}} = 23.83$, $p < .001$) and data collection absent conditions ($M_{\text{data collection absent}} = 66.89$, $SD_{\text{data collection absent}} = 23.01$, $p < .001$). The difference between data collection absent and narrow scope conditions was also significant ($p < .001$).

Perceived Reciprocity. A one-way ANOVA reveals significant differences across conditions ($F(2, 297) = 60.25$, $p < .001$, $\eta^2 = .289$, $a = .96$). Participants in the broad scope data collection condition ($M_{\text{broad scope}} = 2.82$, $SD_{\text{broad scope}} = 1.60$) perceived their interaction with the brand as less reciprocal compared to the ones in the narrow data collection ($M_{\text{narrow scope}} = 4.38$, $SD_{\text{narrow scope}} = 1.17$, $p < .001$) and data collection absent conditions ($M_{\text{data collection absent}} =$

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4.85, $SD_{\text{data collection absent}} = 1.27, p < .001$). The difference between data collection absent and narrow scope conditions was also significant ($p = .014$).

Table 3. Study 2 Descriptive Statistics

Conditions	Mean (SD)			
	Perceived Reciprocity	Trust	Engagement	Purchase Likelihood
Broad Scope	2.82 (1.60)	2.92 (1.54)	2.49 (1.54)	30.57 (28.74)
Narrow Scope	4.38 (1.17)	4.33 (1.14)	3.50 (1.39)	50.72 (23.83)
Absent	4.85 (1.27)	5.03 (1.25)	4.36 (1.41)	66.89 (23.01)

Mediation by Perceived Reciprocity. The independent variable had three levels; therefore, we used multicategorical mediation (model 4, 10,000 bootstrap resamples; Hayes 2018), with data collection absent condition as the reference group. We tested two pathways comparing data collection absent baseline condition with i) the narrow scope data collection condition (dummy 1), and ii) the broad scope data collection condition (dummy 2). Compared to the data collection absent condition, in all data collection conditions, perceived reciprocity mediated the impaired interaction outcomes.

More specifically, a multicategorical mediation analysis with trust as the dependent variable revealed that both narrow scope ($\beta = -.47, t = -2.47, p = .0141, 95\% \text{ CI} = [-.85, -.10]$) and broad scope data collection ($\beta = -2.03, t = -10.51, p < .0001, 95\% \text{ CI} = [-2.40, -1.65]$) decreased perceived reciprocity of the interaction, which in turn impaired trust ($\beta = .77, t = 22.75, p < .0001, 95\% \text{ CI} = [.71, .84]$). The relative indirect effects of narrow scope data collection ($\beta = -.37, SE = .14, 95\% \text{ CI} = [-.63, -.10]$) and broad scope data collection through perceived reciprocity were significant ($\beta = -1.57, SE = .18, 95\% \text{ CI} = [-1.93, -1.22]$).

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When we included engagement as the dependent variable into the model, results revealed that both narrow scope ($\beta = -.47, t = -2.47, p = .0141, 95\% \text{ CI} = [-.85, -.10]$) and broad scope data collection ($\beta = -2.03, t = -10.51, p < .0001, 95\% \text{ CI} = [-2.40, -1.65]$) decreased perceived reciprocity of the interaction, which in turn decreased engagement ($\beta = .70, t = 14.90, p < .0001, 95\% \text{ CI} = [.61, .79]$). The relative indirect effects of narrow scope data collection ($\beta = -.33, \text{SE}=.12, 95\% \text{ CI} = [-.58, -.09]$) and broad scope data collection through perceived reciprocity were significant ($\beta = -1.41, \text{SE}=.18, 95\% \text{ CI} = [-1.77, -1.08]$).

Including purchase intention as the dependent variable into the model revealed similar results. Both narrow scope ($\beta = -.47, t = -2.47, p = .0141, 95\% \text{ CI} = [-.85, -.10]$) and broad scope data collection ($\beta = -2.03, t = -10.51, p < .0001, 95\% \text{ CI} = [-2.40, -1.65]$) decreased perceived reciprocity of the interaction, which in turn decreased purchase intention ($\beta = 12.81, t = 16.33, p < .0001, 95\% \text{ CI} = [11.27, 14.36]$). The relative indirect effects of narrow scope data collection ($\beta = -6.05, \text{SE}=2.24, 95\% \text{ CI} = [-10.48, -1.72]$) and broad scope data collection through perceived reciprocity were significant ($\beta = -25.94, \text{SE}=3.24, 95\% \text{ CI} = [-32.56, -19.98]$).

Table 4. Study 2 Multicategorical Mediation Results

Comparison	Mediator Variable	Dependent Variable	Overall Indirect Effect
Absent vs Narrow Scope	Perceived Reciprocity	Trust	b = -.37, se = .13, CI ₉₅ : -.64, -.11
Absent vs Broad Scope			b = -1.57, se = .18, CI ₉₅ : -1.93, -1.23
Absent vs Narrow Scope		Engagement	b = -.33, se = .12, CI ₉₅ : -.58, -.10
Absent vs Broad Scope			b = -1.41, se = .18, CI ₉₅ : -1.77, -1.07
Absent vs Narrow Scope		Purchase	b = -6.05, se = 2.21, CI ₉₅ : -10.42, -1.71
Absent vs Broad Scope			b = -25.94, se = 3.20, CI ₉₅ : -32.45, -19.91

Findings from Study 2 demonstrate that data collection decreases the perceived reciprocity of the interaction, which in turn reduces consumers' trust, engagement, and purchase likelihood. Moreover, increasing the scope of data collection further intensifies these negative effects.

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Importantly, the results suggest that consumers interpret any form of data collection as a transfer of value to the brand, even when the scope is narrow. Consequently, even narrow scope data collection decreases perceived reciprocity relative to interactions in which no data are collected.

Study 3

In Study 3, we aimed to examine the effectiveness of different types of benefits that brands offer in exchange for collecting consumer data. To understand what consumers perceive as comparable to the value of their data, we first conducted a pilot study (Web Appendix E). In this pilot study ($N = 100$, $M_{\text{age}} = 42.71$, 60 females, Connect), participants were asked to indicate the benefit they would consider equivalent to the value of the data collected by brands. 62% of them mentioned monetary benefits such as discounts, reduced service fees, cash rewards, or promotional codes; 16% of them mentioned nonmonetary benefits such as personalized content, recommendations, ads and a better experience; while 22% of them were unable to identify any benefit they considered comparable in value. Building on these insights, Study 3 incorporates both monetary and nonmonetary benefits in the experimental manipulation. However, our theorizing suggests that reciprocity perceptions emerge only when the inputs and outputs of an exchange are perceived as comparable in value. Because consumers may have difficulty assessing the value of their personal data, the benefits offered by brands may not be perceived as equivalent to the data provided. Consequently, these benefits may fail to enhance perceived reciprocity of the interaction.

Methods

Four hundred and two participants took part in the study. Seven participants failed to pass the attention check question, leaving us with a final sample of three hundred ninety-five

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(Connect, 53.7% female, $M_{\text{age}} = 40.02$ years; <https://aspredicted.org/9ysn-3y6f.pdf>). The study employed one-factor between-subjects design (data collection: present, absent, monetary benefits, nonmonetary benefits). All participants imagined opening a website of the brand Terra for exploring their available products and receiving a popup as soon as they land on the home page. In the data collection present condition, they were presented with the message “*At Terra, we collect data on our website visitors*”, while in the data collection absent condition they read “*At Terra, we do not collect any data on our website visitors*”. Participants in the nonmonetary benefits condition read “*At Terra, we collect data on our website visitors, in return, we offer personalized content.*”, while in the monetary benefits condition participants read “*At Terra, we collect data on our website visitors, in return, we offer discounts.*” After reading these disclaimers, all participants rated their trust, engagement, and purchase likelihood as in previous studies. Finally, they completed the perceived reciprocity scale, rated the extent to which they thought that the brand collected data, and responded to the attention check question.

Results and Discussion

Manipulation check. A one-way ANOVA reveals that our data collection manipulation was successful ($F(3, 391) = 319.17, p < .001, \eta^2 = .710$). Participants in the data collection absent condition ($M_{\text{data collection absent}} = 2.41, SD_{\text{data collection absent}} = 1.54$) perceived the brand to be collecting less data compared to the ones in the data collection present ($M_{\text{data collection present}} = 6.32, SD_{\text{data collection present}} = 1.04, p < .001$), monetary benefits ($M_{\text{monetary benefits}} = 6.57, SD_{\text{monetary benefits}} = .85, p < .001$), and non-monetary benefits conditions ($M_{\text{non-monetary benefits}} = 6.43, SD_{\text{non-monetary benefits}} = .93, p < .001$). The differences between monetary reciprocity and nonmonetary reciprocity conditions ($p = .392$). monetary reciprocity and data collection present conditions

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($p = .129$), and nonmonetary reciprocity and data collection present conditions were not significant ($p = .510$).

Trust. A one-way ANOVA reveals significant differences across conditions ($F(3, 391) = 23.83, p < .001, \eta^2 = .155, a=.94$). Participants in the data collection absent condition ($M_{\text{data collection absent}} = 5.14, SD_{\text{data collection absent}} = 1.09$) trusted the brand more than the ones in the data collection present ($M_{\text{data collection present}} = 3.89, SD_{\text{data collection present}} = 1.33, p < .001$), monetary benefits ($M_{\text{monetary benefits}} = 3.70, SD_{\text{monetary benefits}} = 1.45, p < .001$), and non-monetary benefits conditions ($M_{\text{non-monetary benefits}} = 4.12, SD_{\text{non-monetary benefits}} = 1.32, p < .001$). While the difference between nonmonetary benefits and monetary benefits conditions reached significance ($p = .023$), there was not a significant difference between nonmonetary benefits and data collection present conditions ($p = .210$). Finally, the difference between monetary benefits and data collection present conditions was not significant ($p = .308$).

Engagement. A one-way ANOVA reveals significant differences across conditions ($F(3, 391) = 23.47, p < .001, \eta^2 = .153, r=.93$). Participants in the data collection absent condition ($M_{\text{data collection absent}} = 4.62, SD_{\text{data collection absent}} = 1.32$) engaged with the brand more than the ones in the data collection present ($M_{\text{data collection present}} = 3.33, SD_{\text{data collection present}} = 1.51, p < .001$), monetary benefits ($M_{\text{monetary benefits}} = 2.92, SD_{\text{monetary benefits}} = 1.62, p < .001$), and nonmonetary benefits conditions ($M_{\text{non-monetary benefits}} = 3.47, SD_{\text{non-monetary benefits}} = 1.51, p < .001$). While the difference between nonmonetary benefits and monetary benefits conditions reached significance ($p = .010$), there was not a significant difference between non-monetary benefits and data collection present conditions ($p = .523$). Finally, the difference between monetary benefits and data collection present conditions was marginally significant ($p = .052$).

Purchase Likelihood. A one-way ANOVA reveals significant differences across conditions ($F(3, 391) = 25.20, p < .001, \eta^2 = .162$). Participants in the data collection absent condition ($M_{\text{data collection absent}} = 68.71, SD_{\text{data collection absent}} = 17.83$) were more likely to purchase a product from the brand compared to the ones in the data collection present ($M_{\text{data collection present}} = 44.42, SD_{\text{data collection present}} = 25.46, p < .001$), monetary benefits ($M_{\text{monetary benefits}} = 39.73, SD_{\text{monetary benefits}} = 29.11, p < .001$), and non-monetary benefits conditions ($M_{\text{non-monetary benefits}} = 50.61, SD_{\text{non-monetary benefits}} = 26.88, p < .001$). While the difference between nonmonetary benefits and monetary benefits conditions reached significance ($p = .003$), there was not a significant difference between nonmonetary benefits and data collection present conditions ($p = .085$). Finally, the difference between monetary benefits and data collection present conditions was not significant ($p = .190$).

Perceived Reciprocity. A one-way ANOVA reveals significant differences across conditions ($F(3, 391) = 25.17, p < .001, \eta^2 = .162, a = .96$). Participants in the data collection absent condition ($M_{\text{data collection absent}} = 5.05, SD_{\text{data collection absent}} = 1.13$) perceived their interaction with the brand more reciprocal compared to the ones in the data collection present ($M_{\text{data collection present}} = 3.48, SD_{\text{data collection present}} = 1.63, p < .001$), monetary benefits ($M_{\text{monetary benefits}} = 3.43, SD_{\text{monetary benefits}} = 1.72, p < .001$), and non-monetary benefits conditions ($M_{\text{non-monetary benefits}} = 3.67, SD_{\text{non-monetary benefits}} = 1.54, p < .001$). The differences between monetary reciprocity and nonmonetary reciprocity conditions ($p = .285$), monetary reciprocity and data collection present conditions ($p = .828$), and nonmonetary reciprocity and data collection present conditions were not significant ($p = .394$).

Table 5. Study 3 Descriptive Statistics

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Conditions	Mean (SD)			
	Perceived Reciprocity	Trust	Engagement	Purchase Likelihood
Monetary benefits	3.43 (1.72)	3.70 (1.45)	2.92 (1.62)	39.73 (29.11)
Nonmonetary benefits	3.67 (1.54)	4.12 (1.32)	3.47 (1.51)	50.61 (26.88)
Present	3.48 (1.63)	3.89 (1.33)	3.33 (1.51)	44.42 (25.46)
Absent	5.05 (1.13)	5.14 (1.09)	4.62 (1.32)	68.71 (17.83)

Underlying mechanism. The independent variable had four levels; therefore, we used multicategorical mediation (model 4, 10,000 bootstrap resamples; Hayes 2018), with data collection absent condition as the reference group. We tested three pathways comparing data collection absent baseline condition with i) the data collection present condition (dummy 1), ii) monetary benefits condition (dummy 2), and iii) nonmonetary benefits condition (dummy 3). Compared to the data collection absent condition, in all data collection conditions, perceived reciprocity mediated the impaired interaction outcomes.

More specifically, a multicategorical mediation analysis with trust as the dependent variable revealed that collecting data ($\beta = -1.57$, $t = -7.25$, $p < .0001$, 95% CI = [-1.99, -1.14]), as well as providing monetary benefits ($\beta = -1.62$, $t = -7.47$, $p < .0001$, 95% CI = [-2.04, -1.19]) and nonmonetary benefits in return for data ($\beta = -1.38$, $t = -6.38$, $p < .0001$, 95% CI = [-1.81, -.96]) decreased perceived reciprocity of the interaction, which in turn impaired trust ($\beta = .63$, $t = 21.40$, $p < .0001$, 95% CI = [.57, .69]). The relative indirect effects of collecting data ($\beta = -.99$, SE=.13, 95% CI: [-1.25, -.73]), providing monetary benefits ($\beta = -1.02$, SE=.14, 95% CI: [-1.29, -.75]) and nonmonetary benefits ($\beta = -.87$, SE=.13, 95% CI: [-1.12, -.63]) through perceived reciprocity were significant.

When we included engagement as the dependent variable into the model, results revealed that collecting data ($\beta = -1.57, t = -7.25, p < .0001, 95\% \text{ CI} = [-1.99, -1.14]$), as well as providing monetary benefits ($\beta = -1.62, t = -7.47, p < .0001, 95\% \text{ CI} = [-2.04, -1.19]$) and nonmonetary benefits in return for data ($\beta = -1.38, t = -6.38, p < .0001, 95\% \text{ CI} = [-1.81, -.96]$) decreased perceived reciprocity of the interaction, which in turn decreased engagement ($\beta = .74, t = 22.57, p < .0001, 95\% \text{ CI} = [.67, .80]$). The relative indirect effects of collecting data ($\beta = -1.16, \text{SE}=.15, 95\% \text{ CI: } [-1.45, -.86]$), providing monetary benefits ($\beta = -1.19, \text{SE}=.16, 95\% \text{ CI: } [-1.51, -.87]$) and nonmonetary benefits ($\beta = -1.02, \text{SE}=.14, 95\% \text{ CI: } [-1.45, -.86]$) through perceived reciprocity were significant.

Including purchase intention as the dependent variable into the model revealed similar results. Collecting data ($\beta = -1.57, t = -7.25, p < .0001, 95\% \text{ CI} = [-1.99, -1.14]$), as well as providing monetary benefits ($\beta = -1.62, t = -7.47, p < .0001, 95\% \text{ CI} = [-2.04, -1.19]$) and nonmonetary benefits in return for data ($\beta = -1.38, t = -6.38, p < .0001, 95\% \text{ CI} = [-1.81, -.96]$) decreased perceived reciprocity of the interaction, which in turn decreased purchase intention ($\beta = 12.26, t = 21.85, p < .0001, 95\% \text{ CI} = [11.16, 13.37]$). The relative indirect effects of collecting data ($\beta = -19.24, \text{SE}=2.50, 95\% \text{ CI: } [-24.21, -14.46]$), providing monetary benefits ($\beta = -19.82, \text{SE}=2.70, 95\% \text{ CI: } [-25.19, -14.62]$) and nonmonetary benefits ($\beta = -16.97, \text{SE}=2.40, 95\% \text{ CI: } [-21.73, -12.25]$) through perceived reciprocity were significant.

Table 6. Study 3 Multicategorical Mediation Results

Comparison	Mediator Variable	Dependent Variable	Overall Indirect Effect
Absent vs Present	Trust	Engagement	b = -.99, se = .13, CI ₉₅ : -1.24, -.73
Absent vs Monetary Benefits			b = -1.02, se = .14, CI ₉₅ : -1.30, -.74
Absent vs Nonmonetary Benefits			b = -.87, se = .13, CI ₉₅ : -1.12, -.62
Absent vs Present	Perceived Reciprocity	Engagement	b = -1.16, se = .15, CI ₉₅ : -1.45, -.87
Absent vs Monetary Benefits			b = -1.19, se = .16, CI ₉₅ : -1.52, -.88
Absent vs Nonmonetary Benefits			b = -1.02, se = .14, CI ₉₅ : -1.31, -.87

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Absent vs Present		$b = -19.24, se = 2.53, CI_{95}: -24.16, -14.31$
Absent vs Monetary Benefits	Purchase	$b = -19.82, se = 2.72, CI_{95}: -25.13, -14.52$
Absent vs Nonmonetary Benefits		$b = -16.97, se = 2.40, CI_{95}: -21.72, -12.34$

These findings have important implications. First, providing benefits in exchange for collecting consumer data may not increase the perceived reciprocity of the interaction. Even when firms offer something in return, consumers may not perceive the exchange as balanced. Second, offering monetary benefits such as discounts may perform worse than providing nonmonetary benefits or even offering no explicit benefits at all.¹ One explanation is that monetary incentives make the transactional nature of the exchange more salient, prompting consumers to evaluate whether the compensation they receive is comparable to the value of the personal data they provide. Given that consumers often lack a clear understanding of the value of their personal data, they may struggle to make this assessment and ultimately perceive the monetary compensation as insufficient.

Study 4

Study 4 had two main objectives. First, it aimed to examine a potential boundary condition. We predicted that specifying both the type of information being collected and the benefits offered in return could facilitate consumers' evaluation of the exchange, thereby enhance the perceived reciprocity and improve interaction outcomes. To test this prediction, we included conditions in which the inputs and outputs of the exchange were specified at varying levels of detail. Second, the study aimed to test our prediction in a different context. To this end, we focused on the service industry.

¹ Based on the finding that money is considered as a more compatible medium than goods in data disclosure, we initially expected to observe a difference between monetary and nonmonetary benefits conditions and made the preregistration accordingly. However, we did not observe such a pattern.

Methods

Three hundred and one participants took part in the study. Three participants did not complete the study, and five participants failed to pass the attention check question, leaving us with a final sample of two hundred ninety-three (Connect, 51.2% female, Mage = 41.7 years; <https://aspredicted.org/j2xt-fc2x.pdf>). The study employed one-factor between-subjects design (exchange: absent, present, specific). Participants were asked to imagine that they did not feel like cooking and decided to order dinner. While searching for options, they came across CityBites and downloaded the application. While browsing the available options, a notice about data collection appeared (see Table 7). After reading the notice, participants completed the perceived reciprocity, trust, and engagement scales and indicated how likely they would be to place an order. Finally, they responded to an attention check question.

Table 7. Stimuli used in Study 4

Exchange Absent Condition	Exchange Present Condition	Exchange Specific Condition
Imagine you do not feel like cooking today and decide to order dinner. While browsing, you come across with the food delivery app CityBites. You download the app and open it to explore your options for ordering food.	Imagine you do not feel like cooking today and decide to order dinner. While browsing, you come across with the food delivery app CityBites. You download the app and open it to explore your options for ordering food.	Imagine you do not feel like cooking today and decide to order dinner. While browsing, you come across with the food delivery app CityBites. You download the app and open it to explore your options for ordering food.
While browsing restaurants in the app, the following message appears: “At CityBites, we collect data on our users.”	While browsing restaurants in the app, the following message appears: “At CityBites, we collect data on our users. In return, we offer them a free meal.”	While browsing restaurants in the app, the following message appears: “At CityBites, we collect information about our users’ birthdays. In return, we offer them a free meal on their birthday.”

Results and Discussion

Trust. A one-way ANOVA reveals significant differences across conditions ($F(2, 290) = 12.15, p < .001, \eta^2 = .077, a = .93$). Participants in the specific condition ($M_{\text{specific}} = 4.61,$

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$SD_{\text{specific}} = 1.21$) trusted the brand more than the ones in the present ($M_{\text{present}} = 3.91$, $SD_{\text{present}} = 1.65$, $p < .001$) and absent condition ($M_{\text{absent}} = 3.63$, $SD_{\text{absent}} = 1.41$, $p < .001$). The difference between exchange present and absent conditions did not reach significance ($p = .165$).

Engagement. A one-way ANOVA reveals significant differences across conditions ($F(2, 290) = 16.52$, $p < .001$, $\eta^2 = .102$, $r = .95$). Participants in the specific condition ($M_{\text{specific}} = 4.41$, $SD_{\text{specific}} = 1.46$) engaged with the brand more than the ones in the present ($M_{\text{present}} = 3.57$, $SD_{\text{present}} = 1.92$, $p < .001$) and absent condition ($M_{\text{absent}} = 3.06$, $SD_{\text{absent}} = 1.53$, $p < .001$). The difference between exchange present and absent conditions was also significant ($p = .031$).

Purchase Likelihood. A one-way ANOVA reveals significant differences across conditions ($F(2, 290) = 17.50$, $p < .001$, $\eta^2 = .108$). Participants in the specific condition ($M_{\text{specific}} = 65.60$, $SD_{\text{specific}} = 24.20$) were more likely to place an order compared to the ones in the present ($M_{\text{present}} = 50.14$, $SD_{\text{present}} = 33.41$, $p < .001$) and absent condition ($M_{\text{absent}} = 41.21$, $SD_{\text{absent}} = 28.70$, $p < .001$). The difference between exchange present and absent conditions was also significant ($p = .032$).

Perceived Reciprocity. A one-way ANOVA reveals significant differences across conditions ($F(2, 290) = 14.33$, $p < .001$, $\eta^2 = .090$, $r = .95$). Participants in the specific condition ($M_{\text{specific}} = 4.68$, $SD_{\text{specific}} = 1.30$) perceived their interaction with the brand more reciprocal compared to the ones in the present ($M_{\text{present}} = 3.91$, $SD_{\text{present}} = 1.79$, $p < .001$) and absent condition ($M_{\text{absent}} = 3.55$, $SD_{\text{absent}} = 1.37$, $p < .001$). The difference between exchange present and absent conditions did not reach significance ($p = .095$).

Table 8. Study 4 Descriptive Statistics

Conditions	Mean (SD)			
	Perceived Reciprocity	Trust	Engagement	Purchase Likelihood
Specific	4.68 (1.30)	4.61 (1.21)	4.41 (1.46)	65.60 (24.20)
Present	3.91 (1.79)	3.91 (1.65)	3.57 (1.91)	33.42 (41.21)
Absent	3.55 (1.37)	3.63 (1.41)	3.06 (1.53)	41.21 (28.70)

Underlying Mechanism. The independent variable had three levels; therefore, we used multicategorical mediation (model 4, 10,000 bootstrap resamples; Hayes 2018), with exchange absent condition as the reference group. We tested two pathways comparing exchange absent baseline condition with i) present condition (dummy 1), and ii) specific condition (dummy 2). Compared with the exchange-absent condition, specifying the exchange enhances perceived reciprocity and improves interaction outcomes. In contrast, simply making the exchange present does not mitigate the negative effects.

More specifically, a multicategorical mediation analysis with trust as the dependent variable revealed that presenting something in return for collected data did not significantly increase the perceived reciprocity ($\beta = .36, t = 1.67, p = .0954, 95\% \text{ CI} = [-.06, .78]$). However, specifying the exchange increased perceived reciprocity of the interaction ($\beta = 1.13, t = 5.24, p < .0001, 95\% \text{ CI} = [.71, 1.56]$), which in turn enhanced trust ($\beta = .76, t = 22.07, p < .0001, 95\% \text{ CI} = [.69, .82]$). The relative indirect effect of presenting something in return was not significant ($\beta = .27, \text{SE}=.17, 95\% \text{ CI: } [-.06, .62]$). However, the relative indirect effect of specifying the exchange through perceived reciprocity was significant ($\beta = .86, \text{SE}=.15, 95\% \text{ CI: } [.57, 1.17]$).

When we included engagement as the dependent variable into the model, results revealed that presenting something in return for collected data did not significantly increase the perceived

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reciprocity ($\beta = .36, t = 1.67, p = .0954, 95\% \text{ CI} = [-.06, .78]$). However, specifying the exchange increased perceived reciprocity of the interaction ($\beta = 1.13, t = 5.24, p < .0001, 95\% \text{ CI} = [.71, 1.56]$), which in turn increased engagement ($\beta = .86, t = 21.33, p < .0001, 95\% \text{ CI} = [.78, .94]$). The relative indirect effect of presenting something in return was not significant ($\beta = .31, \text{SE} = .20, 95\% \text{ CI} = [-.07, .70]$). However, the relative indirect effect of specifying the exchange through perceived reciprocity was significant ($\beta = .97, \text{SE} = .17, 95\% \text{ CI} = [.64, 1.30]$).

Including purchase intention as the dependent variable into the model revealed similar results. Presenting something in return for collected data did not significantly increase the perceived reciprocity ($\beta = .36, t = 1.67, p = .0954, 95\% \text{ CI} = [-.06, .78]$). However, specifying the exchange increased perceived reciprocity of the interaction ($\beta = 1.13, t = 5.24, p < .0001, 95\% \text{ CI} = [.71, 1.56]$), which in turn increased purchase intention ($\beta = 14.31, t = 18.71, p < .0001, 95\% \text{ CI} = [12.80, 15.81]$). The relative indirect effect of presenting something in return was not significant ($\beta = 5.14, \text{SE} = 3.26, 95\% \text{ CI} = [-1.19, 11.54]$). However, the relative indirect effect of specifying the exchange through perceived reciprocity was significant ($\beta = 16.17, \text{SE} = 2.79, 95\% \text{ CI} = [10.76, 21.65]$).

Table 9. Study 2 Multicategorical Mediation Results

Comparison	Mediator Variable	Dependent Variable	Overall Indirect Effect
Absent vs Present	Perceived Reciprocity	Trust	$b = .27, \text{se} = .17, \text{CI}_{95\%} = [-.06, .62]$
Absent vs Specific		Engagement	$b = .86, \text{se} = .15, \text{CI}_{95\%} = [.57, 1.17]$
Absent vs Present			$b = .31, \text{se} = .19, \text{CI}_{95\%} = [-.07, .69]$
Absent vs Specific		Purchase	$b = .97, \text{se} = .16, \text{CI}_{95\%} = [.64, 1.30]$
Absent vs Present			$b = 5.14, \text{se} = 3.25, \text{CI}_{95\%} = [-1.19, 11.54]$
Absent vs Specific			$b = 16.17, \text{se} = 2.79, \text{CI}_{95\%} = [10.76, 21.65]$

The results of Study 4 provide further insights into perceived reciprocity in consumer–brand interactions. When brands provide specific information about the type of data they collect and

the benefits offered in return, consumers perceive the interaction as more reciprocal. These findings highlight the importance of clearly specifying the terms of the exchange between consumers and brands, as greater transparency regarding both the inputs and outputs of the exchange can improve perceptions of reciprocity.

General Discussion

The new technology era has enabled firms to integrate various forms of high-tech tools into their operations to better address the needs and desires of customers (Grewal et al. 2021). Collecting consumer data can help firms learn more about their consumers; however, our research suggests that the integration of data collection technologies can have unintended consequences for brands. Across four studies, consistent with our predictions, we show that the collection of consumer data can impair trust, engagement, and purchase likelihood, since it decreases perceived reciprocity of the interaction. Consumers view the collection of data as a transfer of value to the brands and expect to receive something of comparable value in return. Since consumers are often unable to assess the value of their personal data, the benefits offered by brands may not effectively create a sense of reciprocity. Importantly, our findings suggest that clearly specifying the type of data collected and how exactly it will be reciprocated can mitigate these negative effects. Together, these findings contribute to multiple research streams in psychology and marketing and offer important theoretical and managerial implications.

Theoretical Implications

First, this research contributes to privacy and targeting literatures by shifting attention from consumers’ disclosure decisions and firms’ use of consumer data to the consequences of data

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collection itself. Prior privacy research has largely focused on the factors that influence consumers' willingness to disclose information, whereas research on targeting has primarily examined consumers' responses to the use of collected data. Extending these findings, we demonstrate that the mere collection of consumer data can impair consumer–brand interactions. By identifying consequences of data collection that emerge before firms use the collected information, this research broadens understanding of how data practices shape consumer–brand relationships.

Second, this research extends social exchange theory to contemporary data-driven marketplace environments. Social exchange theory proposes that exchange relationships are governed by norms of reciprocity, whereby individuals expect benefits that are comparable to their contributions. Our findings suggest that consumers view the collection of personal data as a transfer of value to firms and evaluate these interactions through the lens of reciprocity. Since personal data are intangible and difficult to value, and consumers often take a passive role in data collection settings, consumers may struggle to assess whether the exchange is balanced. By identifying perceived reciprocity as the mechanism linking data collection to consumer–brand interaction outcomes, this research advances understanding of how exchange processes operate when the resources being exchanged are informational rather than monetary or material.

Third, this research contributes to emerging work on the value of personal data. Although our studies do not directly measure consumers' valuation of data, our findings suggest that consumers expect some form of return when their personal information is collected by brands in marketplace exchanges. Importantly, simply offering benefits in exchange for consumer data was insufficient to increase perceived reciprocity. This finding suggests that consumers may struggle to determine whether the benefits they receive are comparable in value to the

information they provide. By showing that explicitly specifying both the information collected and the benefits provided in return enhances perceived reciprocity, our research identifies transparency regarding the terms of exchange as an important factor shaping consumers' evaluations of data transactions.

Importantly, our findings indicate that simply offering benefits, whether monetary or nonmonetary, may not be sufficient to foster a sense of reciprocity, even when consumers perceive such benefits as appropriate. This finding suggests that it may be difficult to assess whether the benefits they receive are comparable in value to their personal data. By showing that explicitly specifying both the information collected and the benefits provided in return enhances perceived reciprocity, our research identifies transparency regarding the terms of exchange as an important factor shaping consumers' evaluations of data transactions. It is also important to note that in Study 3, providing discounts or personalized content did not enhance perceived reciprocity. In Study 4, offering a free meal in exchange for collecting data still did not increase perceived reciprocity or trust; however, it had a positive effect on engagement and purchase likelihood. This pattern suggests that there might be other mechanisms at play in addition to perceived reciprocity which could be further explored in future.

Managerial Implications

Our findings offer several implications for managers operating in increasingly data-driven marketplace. Firms often view consumer data as a strategic asset that enables personalization, targeting, and improved customer experiences. However, our results suggest that collecting consumer data can have unintended consequences for consumer–brand interactions. Managers should therefore recognize that data collection is not merely a technological or legal issue but also a relational one that can impose costs on firms. In particular, for brands

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with which consumers have established relationships, the collection of consumers' data poses a risk of making the interaction more transactional. Managers should therefore carefully design data collection practices in a manner that is consistent with the nature of the products and services they offer as well as the expectations of their target consumers.

It is important to recognize that consumers may prefer not to have their data collected.

However, many consumers may also be willing to engage in a tradeoff and share their data if they perceive the exchange as fair and beneficial. Therefore, brands should carefully consider how to structure data exchanges in ways that consumers perceive as reciprocal. Practitioners should seek to better understand what consumers expect in return for sharing their data and design offerings accordingly so that the exchange can be beneficial to both parties.

Importantly, our findings suggest that simply offering benefits in exchange for consumer data may not be sufficient to foster perceived reciprocity. Firms frequently compensate consumers through discounts, loyalty rewards, personalized recommendations, or exclusive features.

However, consumers may struggle to determine whether such benefits adequately compensate them for the personal data they provide. As a result, managers should not assume that increasing incentives alone will necessarily improve consumers' reactions to data collection practices. Instead, firms should focus on making the terms of the exchange more explicit. Clearly specifying both the information being collected and the benefits provided in return can help consumers evaluate the exchange and enhance perceived reciprocity. Rather than relying on broad statements about data collection or generic privacy notices, firms may benefit from communicating the specific categories of information collected and explicitly linking them to the benefits consumers receive. Such disclosures can help consumers better understand the exchange and mitigate negative reactions to data collection.

Finally, in the marketplace, some brands have begun offering products and services designed to prevent any form of data collection. For example, Ghostery is a browser that blocks advertisements, trackers, and privacy notices before consumers even encounter them, while DuckDuckGo promotes tools that allow users to “take control of their personal information online without tradeoffs.” Our findings suggest that there may be growing opportunities for products and services that reduce, limit, or eliminate the collection of consumer data.

Limitations and Future Research

One limitation of our research concerns the use of explicit disclosures regarding data collection practices. Consumers are increasingly exposed to information about firms’ data collection practices through a variety of channels, including privacy policies, privacy notices, news coverage, and communications informing them of changes to firms’ privacy policies. Although consumers ultimately decide whether to share their personal data, such decisions are typically made after they have been informed about the nature and extent of data collection. In our studies, we relied on explicit disclosures to increase internal validity. While this approach may reduce external validity relative to naturally occurring marketplace settings, it is important to note that consumers are frequently exposed to information about data collection in the real world. Future research could examine how different forms of data collection disclosures, as well as specific disclosure elements, influence perceived reciprocity and consumer–brand interaction outcomes.

Another limitation concerns the exchange-specific manipulation used in Study 4. Specifically, the birthday setting may have improved consumers’ evaluations of the brand because of its personal relevance. In addition, because providing a birthday reward requires knowledge of a consumer’s birth date, participants may have perceived the collection of this information as more appropriate, justified, or necessary to deliver the promised benefit.

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Future research could examine whether the positive effects of exchange-specific benefits become stronger when the benefits are perceived as personally meaningful and closely linked to the information being collected.

Future research could also investigate whether different types of personal data differentially influence reciprocity perceptions. Consumers may assign different levels of sensitivity and value to various forms of information, such as demographic data, behavioral data, financial information, or highly personal information. Examining how these differences shape expectations regarding compensation and reciprocity would provide a more nuanced understanding of data exchanges.

Finally, our findings suggest that simply providing benefits may not be sufficient to restore reciprocity, raising the possibility that other factors contribute to consumers' evaluations of data exchanges. Future research could therefore explore additional mechanisms and exchange characteristics that strengthen perceived reciprocity. For instance, different types of personal data may differentially influence reciprocity perceptions. Consumers may assign different levels of sensitivity and value to demographic data and behavioral data. Examining how these differences shape expectations regarding compensation and reciprocity would provide a more nuanced understanding of data exchanges.

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Web Appendix: The Hidden Cost of Data Collection:

Data Collection Impairs Consumer- Brand Interaction Outcomes

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Web Appendix A: Pilot Study	2
Web Appendix B: Scale Items Used in the Studies	4
Web Appendix C: Study 1	5
Web Appendix D: Study 2	5
Web Appendix E: Study 3 Pilot Study	5
Web Appendix F: Study 3	6
Web Appendix G: Study 4	7

These materials have been supplied by the authors to aid in the understanding of their paper. The AMA is sharing these materials at the request of the authors.

Web Appendix A: Pilot Study

The primary objective of the Pilot Study was to explore what consumers thought about data collection practices that brands use. We predict that due to the prevalence of data collection practices in the marketplace, consumers started considering data collection as the default practice. Even when brands do not provide information about collecting their data, they expect brands to collect data.

Methods

Two hundred and seven participants took part in the study. Eight participants did not finish the study, eight participants failed to pass the attention check question, leaving us with a final sample of one hundred ninety-one (Connect, 50.8% female, $M_{age} = 38.9$ years; <https://aspredicted.org/d286-t5nm.pdf>). The study employed one-factor between-subjects design (data collection: present, absent, control). All participants were asked to imagine they were planning a hiking trip and considering buying a new backpack for this trip. While browsing online, they came across with the brand Terra known for its durable backpacks. They clicked on the website and started exploring the available products. In the data collection present condition, participants were additionally informed that Terra collected data on website visitors including browsing behavior, while participants in the data collection absent condition were informed that the brand was not collecting such data. Participants in the control condition were not presented with any information about the brand’s data collection practices. Then all participants rated the extent to which they thought that the brand collected data on consumers on a 7-point scale (1 = “not at all”, 7 = “very much”) and responded to an attention check question that asked them to pick the product mentioned in the shopping scenario.

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Results and Discussion

One sample t-tests¹ against the midpoint (4) demonstrated that participants in the data collection absent condition perceived the extent of data collection lower than the midpoint ($t(62) = -8.20, p < .001; M_{\text{data collection absent}} = 2.35, SD_{\text{data collection absent}} = 1.60$). Participants in the data collection present condition perceived the extent of data collection higher than the midpoint ($t(59) = 17.45, p < .001; M_{\text{data collection present}} = 6.27, SD_{\text{data collection present}} = 1.01$). Importantly, participants in the data collection control condition perceived the extent of data collection higher than the midpoint ($t(67) = 7.51, p < .001; M_{\text{data collection control}} = 5.10, SD_{\text{data collection control}} = 1.21$).

A one-way ANOVA reveals that ($F(2, 188) = 149.39, p < .001, \eta^2 = .614$) participants in the data collection present condition ($M_{\text{data collection present}} = 6.27, SD_{\text{data collection present}} = 1.01$) perceived the brand to be collecting more data compared to the ones in the data collection absent ($M_{\text{data collection absent}} = 2.35, SD_{\text{data collection absent}} = 1.60, p < .001$) and data collection control conditions ($M_{\text{data collection control}} = 5.10, SD_{\text{data collection control}} = 1.21, p < .001$). Importantly, the difference between data collection absent and data collection control conditions was also significant ($p < .001$).

The results of the pilot study demonstrate that consumers expect brands to collect data even when no information about data collection practices is provided. These findings suggest that consumers perceive data collection as a default practice in contemporary marketplace interactions and assume that brands collect data even in the absence of explicit disclosures.

Accordingly, in our studies, we operationalized data collection as either absent or present.

¹ In line with our preregistration, we conducted one sample t-tests against the midpoint of the scale. We additionally conducted a one-way ANOVA.

Web Appendix B: Scale Items Used in the Studies

Brand Trust Scale (Chaudhuri and Holbrook, 2001; 1 = “strongly disagree”, 7 = “strongly agree”)

- I would trust the brand Terra.
- I would rely on the brand Tera.
- Brand Terra is an honest brand.
- Brand Terra is safe.

Consumer Engagement Scale (adapted from Villanova and Matherly, 2024; 1 = “strongly disagree”, 7 = “strongly agree”)

- I am likely to increase my engagement with the brand Terra.
- I want to be associated with the Brand Terra products.

Purchase Likelihood (100 point slider scale, 1= very unlikely, 100= very likely, anchored at 50)

- How likely would you be to purchase a backpack from Brand Terra?

Perceived Reciprocity (adapted from Pervan, Bove, and Johnson, 2009; 1 = “strongly disagree”, 7 = “strongly agree”)

- Overall with the brand Terra, there would be a balance in our dealing.
- Overall with the brand Terra, we would provide each other with equal benefits.
- Overall with the brand Terra, the benefits we provide and receive would even out over time.

Data Collection Manipulation Check(1 = “not at all”, 7 = “very much”)

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- To what extent do you think that the brand Terra collects data on consumers?

Web Appendix C: Study 1

Measurement model. The measurement model aimed to capture two separate factors; trust and engagement. We conducted a confirmatory factor analysis (CFA; Jamovi) to verify that the data fit the proposed model appropriately. Results yielded: $\chi^2(8) = 18.7$, $p = .016$, CFI = 0.99, TLI = 0.99, and RMSEA = 0.082, indicating that the measurement model was in line with established parameters of adequate model fit. Therefore, we explored these factors as separate constructs.

Web Appendix D: Study 2

Measurement model. The measurement model aimed to capture three separate factors; perceived reciprocity, trust, and engagement. We conducted a confirmatory factor analysis (CFA; Jamovi) to verify that the data fit the proposed model appropriately. Results yielded: $\chi^2(24) = 49.8$, $p = .001$, CFI = 0.99, TLI = 0.99, and RMSEA = 0.06, indicating that the measurement model was in line with established parameters of adequate model fit. Therefore, we explored these factors as separate constructs.

Web Appendix E: Study 3 Pilot Study

In Study 3, we aimed to examine the effectiveness of providing benefits in exchange for collecting consumer data. To identify the benefits that consumers consider as equivalent to their

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data in terms of value, we conducted a pilot study with 100 participants (Connect, 60% female, Mage = 42.7 years). Participants viewed the following prompt:

Some companies collect data and provide benefits in return.

What type of benefit would you perceive as equivalent to the value of your data?

They provided open ended responses. An analysis of these responses revealed three main categories. The first and foremost, 62% of the participants referred to a type of monetary benefit including discounts, cash rewards, reduced service fees, and promotional codes. 16% of them mentioned nonmonetary benefits such as personalized content, recommendations, ads, and a better experience. 22% of them were unable to identify any benefit they considered comparable in value. Based on these insights, we included monetary and nonmonetary benefit manipulation into the design of Study 3.

Web Appendix F: Study 3

Measurement model. The measurement model aimed to capture three separate factors; perceived reciprocity, trust, and engagement. We conducted a confirmatory factor analysis (CFA; Jamovi) to verify that the data fit the proposed model appropriately. Results yielded: $\chi^2(24) = 88.7$, $p < .001$, CFI = 0.99, TLI = 0.98, and RMSEA = 0.08, indicating that the measurement model was in line with established parameters of adequate model fit (Bagozzi & Yi, 2012). Based on the proper fit of the three-factor model, these factors were treated as separate constructs.

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Web Appendix G: Study 4

Measurement model. The measurement model aimed to capture three separate factors; perceived reciprocity, trust, and engagement. We conducted a confirmatory factor analysis (CFA; Jamovi) to verify that the data fit the proposed model appropriately. Results yielded: $\chi^2(24) = 111$, $p < .001$, CFI = 0.97, TLI = 0.96, and RMSEA = 0.111, indicating that the measurement model was in line with established parameters of adequate model fit. Therefore, we explored these factors as separate constructs.

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