
When Transaction-Level Wage Transparency Can Increase Consumer Preference

Lucas Stich (LMU Munich)
Christoph Ungemach (TU Munich)
Christoph Fuchs (University of Vienna)
Martin Spann (LMU Munich)

Discussion Paper No. 346

November 10, 2022

When Transaction-Level Wage Transparency Can Increase Consumer Preference

Lucas Stich

Christoph Ungemach

Christoph Fuchs

Martin Spann

November 1, 2022

The first two authors contributed equally to this project. Financial support from the German Research Foundation through CRC TRR 190 (project number 280092119) is gratefully acknowledged. Correspondence: Lucas Stich.

When Transaction-Level Wage Transparency Can Increase Consumer Preference

Abstract

Firms are usually reluctant to disclose information about the production costs of their goods and services; however, some firms have recently started to disclose cost information to consumers. This research examines the consequences of disclosing transaction-level wage information on consumer preferences. Six experiments, both in field and lab settings across multiple service domains, document that disclosing a service worker's compensation can increase consumer preference for that firm's service if the compensation is sufficiently high (i.e., perceived as fair by consumers). This greater preference for services provided in a fair-wage setting is driven by consumers' feelings of anticipated guilt and higher expectations concerning quality. Available social norms regarding fair compensation and the nature of the service worker (human vs. non-human) are both identified as important boundary conditions of the proposed process. This research offers a first step toward understanding the psychological and behavioral consequences of disclosing transaction-level wage information to consumers, thereby enabling managers to better identify when they should disclose wage information as part of their marketing strategy. This research also informs policy makers on how to encourage social preferences and consumer choices in order to promote fair outcomes for consumers, firms, and workers.

Keywords: transaction-level wage transparency, social preferences, fairness, pricing, wage inequality

Consumers increasingly seek transparency from firms regarding their supply and value chains, including information about how products are manufactured, the origin of product components, working conditions, and the sources and costs of raw materials and labor (Lim et al. 2018). However, most firms are reluctant to disclose such information, especially when it comes to their costs. This is most likely due to fear of losing a competitive advantage (Lim et al. 2018), or due to concerns about reactance from consumers who regard firm margins as too high (Kahneman et al. 1986). And yet, several firms have started offering greater transparency by disclosing production costs to their customers.¹ For example, the clothing manufacturer Everlane is deliberately transparent in its marketing strategy by disclosing the costs of materials, hardware, duties, transportation, and labor for each product they sell.² Customers can readily view a breakdown of costs on the Everlane website, as well as the rationale behind the price of each product. Alta Gracia goes even further by disclosing the payment of certified “living wages” to its workers in the Dominican Republic (Buell and Kalkanci 2020).³

Initial research has started exploring how consumers react when firms disclose the costs of various components required to produce and market a product. For example, Mohan et al. (2020) show that being transparent regarding several different cost components such as materials, transportation, and labor cost can generally increase consumers’ trust and willingness to buy from firms (irrespective of whether these costs are low or high). However, existing research has not addressed how consumers react to disclosures of *specific* cost components, which might induce distinct consumer reactions due to their idiosyncratic nature (see Web Appendix A for an overview of related studies).

¹ <https://thepricingconundrum.substack.com/p/disclosure-based-price-transparency>

² <https://www.inc.com/suzanne-lucas/the-radically-transparent-fashion-startup-everlane-is-finding-out-why-that-idea-should-extend-to-employees-too.html>

³ Alta Gracia’s wages thus are 340% higher than required by law and equivalent to a “living wage” certified by the Worker Rights Consortium.

In this research, we study how consumers respond when firms disclose an economically important cost component at the transaction level that might elicit unique consumer reactions, namely, wage information. Specifically, we examine how consumers respond in terms of preference (i.e., choice, willingness to pay, purchase intentions) to offers of service firms disclosing how much they pay their workers to produce a specific service. For example, how do consumers react to a taxi firm that discloses to them how much it pays drivers for a particular ride, or a spa that discloses how much it pays its massage therapist for a one-hour massage, or a translation service that reveals how much it pays translators for translating a specific text?

Our conceptualization of transaction-level wage transparency differs from existing conceptualizations of “wage transparency,” which refer to a firm’s practice of disclosing monthly or annual salaries of employees by position level within the firm (Greiner et al. 2011; Long and Nasiry 2020). Wage information is usually not available to consumers at the transaction level or easily applicable to the specific service worker providing the service. Aggregate monthly or annual salary information does also not facilitate the assessment of the fairness regarding the remuneration for the service provided. Our new conceptualization also differs from existing research on reporting CEO-to-worker pay ratios, which is concerned with relative wage discrepancies across hierarchical levels within a firm (Mohan et al. 2018). The CEO-to-worker pay ratio is even less suitable to assess the fairness of the remuneration received by a specific service worker, as it is a ratio of the CEO’s compensation and the *average* worker’s annual salary. Consumers may look up this information to avoid high-ratio firms, but cannot utilize it to promote firms providing fair remuneration to their workers.

Instead, our conceptualization focuses on disclosing to consumers a worker’s absolute wage for a service at the transaction level, that is, how much a firm actually pays the worker to produce a given service. Studying this form of transparency is particularly relevant for services (vs. goods),

because the value creation is more directly attributable to the individual worker producing the service. Moreover, a large part of value creation is usually provided by human labor—that of a service worker—which also explains why labor costs tend to account for the lion’s share of a service firm’s total costs. More broadly, services form the backbone of modern economies, accounting for the majority of value creation. In 2019, more than 75% of the gross domestic product in the U.S. was comprised of services,⁴ which reflects the increasing shift from a goods-based to a services-based economy over the last few decades (Rai and Sambamurthy 2006; Rust and Huang 2014).

Beyond their economic significance in services, wages are conceptually distinct from other types of cost information because they involve a social component: wages are tied to people and therefore can potentially appeal to consumers’ social preferences. Accordingly, wages may direct consumers’ attention to the fairness of the economic exchange relationship between a firm and the service worker.

Previous research has highlighted the importance of fairness considerations in exchange relationships between firms and consumers (e.g., Kahneman et al. 1986; Xia et al. 2004). We posit that fairness considerations in the domain of services affect not only the direct economic exchange between the firm and the consumer, but also the exchange relationship between the firm and the service worker. That is, consumer preferences for a particular firm might be affected not only by specific service attributes such as price, but also by transparent information about how much the firm pays its workers to produce the service. People tend to have a general preference for fair economic exchanges (see also Andorfer and Liebe 2012), which may extend to those between the firm and its service workers (i.e., whether the firm pays its service workers fairly).

⁴ <https://data.worldbank.org/indicator/NV.SRV.TOTL.ZS?locations=US>

To examine consumer responses to transaction-level wage transparency, we report the results of six studies using different experimental paradigms in both field and lab settings and across multiple domains, including city tours, beverage delivery, ride-hailing, wellness, and translation services. The results indicate that disclosing a service worker's compensation can increase consumer preference for that firm's service in terms of choice, willingness to pay, and purchase intentions if this compensation is perceived as fair by consumers. We propose and provide evidence that this effect is driven, in part, by consumers' feelings of anticipated guilt and by quality expectations. Furthermore, we demonstrate that feelings related to anticipated guilt depend on shared social norms about fair compensation, and on the involvement of human versus non-human labor. Importantly, the effect of anticipated guilt holds above and beyond the effect of quality expectations, which constitute an alternative process explanation. This research offers a first step toward understanding the psychological and behavioral consequences of disclosing transaction-level wage information to consumers, thereby making several contributions to the existing literature.

First, we add to emerging research on cost transparency by documenting how transaction-level wage transparency affects consumer preferences. Our findings suggest that this form of transparency can be beneficial in terms of consumer demand if firms pay sufficiently high wages to their workers. Conversely, disclosing wages that are perceived as unfair may have detrimental effects on consumer preferences. Specifically, our results suggest fair compensation of service workers matters to consumers, even though they do not have a direct contract with the service workers themselves.

Second, our findings provide new insights into the role of guilt (and warm glow) in economic transactions between consumers, firms, and service workers. Intuitively, consumers should hold firms accountable for compensating their workers fairly. Any sense of guilt in response to unfair compensation should therefore be on the part of the firm, not the consumer. Instead, our

results indicate that consumers experience guilt themselves when encountering unfair exchanges between firms and service workers.

Third, our findings advance the literature on efficiency wages and the notion that paying more than a minimum required wage can be economically viable because workers become more motivated and productive (Akerlof 1982; Akerlof and Yellen 1990). Our research adds a complementary, consumer demand-based view in support of fair wages. By making higher (fair) wages transparent, firms may benefit from increased consumer preference for their services, both because consumers anticipate higher quality services from a firm that discloses its payment of fair wages and lower levels of guilt linked to their choice.

Finally, disclosing transaction-level wage information may be relevant for policy makers attempting to increase social welfare and reduce wage inequality. The proposed approach of transaction-level wage transparency offers an alternative solution to government mandates that operate on the firm level. By addressing wage gaps and inequality through a market mechanism, both firms and consumers are enabled to settle the provision of fairer wages in a form that offers additional benefits for all parties involved. While the practice of tipping also provides consumers with an option to provide fair compensation to service workers, it is markedly different from the disclosure of transaction-level wage information. When tipping, consumers typically do not know whether (and precisely how much of) the tip will end up in the pocket of the service worker. Thus, there is some uncertainty as to whether service workers actually receive fair compensation. In addition, consumers provide tips within a relatively narrow set of service domains, thereby widening compensation gaps between occupations (e.g., between waiters and chefs, Dubner 2016). Furthermore, there is a difference in who is responsible for providing fair wages; tipping puts the responsibility squarely on consumers, whereas transaction-level wage transparency creates a shared responsibility with the firm providing a fair wage, facilitated through customers' choices.

Theory

Disclosing information about the compensation of the service worker allows consumers to evaluate the exchange relationship between the firm and its worker. By involving a person (i.e., the service worker), a social component enters the economic exchange. This social component may give rise to social preferences (Fehr and Schmidt 1999), which may in turn affect consumer decisions. Caring about others' outcomes in an exchange may also stem from altruism to the extent that consumers might even incur some cost to avoid scenarios that would be unfair to third parties (Paolilli 2009).

Aside from social preferences, we also consider an alternative process—consumers might use disclosed wage information to make inferences about service quality. Just as consumers infer higher quality from higher prices (Gneezy et al. 2014), it is conceivable that consumers also infer higher quality from higher wages. Notably, quality expectations are distinct from the social considerations mentioned above, as they affect the perceived utility of the service itself rather than the exchange relationship between the firm and its worker. Next, we develop our predictions based on our account related to fairness and emotions of guilt. We then also describe quality inferences as an alternative process.

Feelings of Guilt

Guilt, as a moral emotion (Haidt 2003), is a significant driver of prosocial and compensatory behavior (de Hooge et al. 2007; Ketelaar and Au 2003). Guilt can be experienced, but it can also be anticipated because it has the power to influence people's behavior in the present so that they do not feel guilty later (Huhmann and Brotherton 1997; Paharia 2020). Feelings of guilt commonly arise when people anticipate negative consequences for another person due to their own actions. Such moral transgressions might be perceived as violations of a social norm (Ortony et al. 1988; Tangney

and Dearing 2002). The social aspect of these considerations is reflected in reparative actions that people take in response to guilt—such as apologies, confessions, and prosocial actions—all of which aim to restore the social relationship (e.g., Barrett 1995; Lindsay-Hartz 1984). According to de Hooge et al. (2011), the motivation to exhibit compensatory behaviors toward those whom the person feels guilty about constitutes a basic function of guilt. The notion of people acting more prosocial, due to guilt induced by their unfair behavior toward others, is supported by empirical evidence from social games (Ketelaar and Au 2003; Nelissen et al. 2007). Likewise, studies on tipping (Azar 2020) show that a desire to avoid feeling guilty, and the inclination to comply with social norms, are the most frequent motivators that consumers cite regarding whether and how much they decide to tip.

The concept of *warm glow*, as described in the economic literature on impure altruism (e.g., Andreoni 1990), is sometimes referred to as the positive equivalent (Erlandsson et al. 2016; Paharia 2020) or the “flip side” of guilt (Giebelhausen et al. 2016). In addition, avoiding a social interaction that could lead to a negative self-image is consistent with the notion of warm glow. For example, in the context of charitable giving, Andreoni et al. (2017) found that guilt avoidance is an important element of warm glow. Pelozo et al. (2013) showed that product promotion through ethical appeals can be driven by the desire to avoid anticipated guilt. Both guilt and warm glow can explain prosocial behaviors in response to unfair treatment, based on either its perceived disutility (burden of guilt) which consumers seek to avoid or be relieved from, or the perceived utility (warm glow) of resolving the unfairness. Thus, warm glow (feeling good about doing the right thing or what is considered fair) can be parameterized as a complementary expression of guilt (feeling guilty about doing something unfair, which one seeks to avoid).

Against this background, we predict that the disclosure of transaction-level wage information affects consumers’ preferences for services, through consumers’ anticipated feelings of

guilt. If consumers perceive the wage in an exchange relationship between a firm and service worker as fair (vs. unfair), they should experience reduced (increased) levels of anticipated guilt. Conversely, from the perspective of seeking relief from guilt (warm-glow motive), consumers should experience increased (reduced) levels of warm glow if they perceive the compensation of a service worker as fair (unfair). These feelings should then increase consumers' preference for the service which provides a fair wage. Formally:

H1: Disclosing service workers' wages that consumers perceive as fair (at the transaction level) increases consumer preference for a firm's offering.

H2: The effect of disclosing transaction-level wage information on consumer preference for a firm's offering is mediated by anticipated feelings of guilt.

The level of anticipated guilt may also depend on norms and standard practices pertaining to what workers are paid in a particular domain or industry. Because guilt arises from norm violations (Ortony et al. 1988; Tangney and Dearing 2002), consumers' feelings of guilt regarding a disclosed wage may depend on their understanding of what would commonly be considered fair compensation for a service. Horton and Kapelner (2021) showed empirically that people generally have good knowledge of hourly wages for a wide range of occupations. Consumers usually derive expectations about such (wage) distributions from their personal experiences and memory (e.g., Ungemach et al. 2011), or from publicly available information (e.g., salary information posted on platforms such as Glassdoor). Comparisons with such references can affect consumers' judgments. For example, Card et al. (2012) demonstrated that wages below a certain reference point result in lower job satisfaction and higher turnover. Boyce et al. (2010) showed that the rank of a person's income, rather than the absolute income, predicts general life satisfaction. These studies focus on evaluations of a person's own salary, but we predict similar effects when consumers form

judgments about the fairness of others' wages. For example, tipping can be explained by the social motivation of consumers to obey norms related to compensation for service provision (Azar 2011). These norms vary over time and across countries and professions (Azar 2020), but they strongly influence consumers' ideas about what they should pay for a service, as in pay-what-you-want pricing scenarios. Soule and Madrigal (2015) confirmed that consumers' voluntary payments are strongly affected by descriptive norms of what others do.

Therefore, we posit that consumers perceive wages below a particular norm (i.e., what is usually paid) as unfair, and hence develop stronger feelings of anticipated guilt. However, in a different normative context, the same wage could be perceived as fair, in which case we would not expect any increase in anticipated guilt or a decrease in willingness to purchase the service. The evaluation of a wage against what is perceived as a fair wage, due to existing norms, is an important part of the proposed process.

H3: The mediating effect of transaction-level wage transparency on consumer preference, through anticipated feelings of guilt, is moderated by available norms regarding common wages in the relevant domain.

Our theory assumes that the proposed emotional responses in the form of anticipated guilt result from social considerations and preferences in exchange relationships between *human* actors. Thus, we would not expect the predicted outcomes in settings that involve non-human actors. Advancements in artificial intelligence and robotics enable firms to increasingly automate and replace human labor with non-human labor, transforming how goods and services are produced and delivered (Granulo et al. 2019). We predict that consumers will experience different emotional reactions to transaction-level wage transparency depending on whether the service worker is human versus non-human. Specifically, because consumers do not perceive non-human workers as social

entities, they are unlikely to experience feelings of guilt as a result of unfair behavior toward them. In fact, previous research on people's reactions to robots shows that people assign emotions and feelings to humans but not to machines (Gray et al. 2007). This is also in line with research by De Melo et al. (2016), who found that people show less guilt when exploiting machines, as compared to humans. In addition, due to the novelty of such human-machine interactions, we expect consumers to be less likely to hold established shared norms regarding fairness in these interactions. Formally, we hypothesize the following boundary condition for our theoretical framework:

H4: The mediating effect of transaction-level wage transparency on consumer preference, through anticipated feelings of guilt, is moderated by the nature of the worker (human vs. non-human).

While we assume the need for fair compensation exists more generally, the extent to which consumers are able to meet this need (and pay higher prices to provide fair compensation) may depend on their own available resources (e.g., income, socio-economic status). For example, consumers may choose lower-priced options because they simply cannot afford higher-priced ones. Conversely, consumers facing severe resource constraints may have had personal experiences with unfair exchanges, and thus be more motivated to ensure that other workers receive fair compensation. Therefore, we consider and empirically explore the extent to which consumers' individual resource constraints may affect their ability and willingness to provide fair compensation to service workers.

Quality Expectations as an Alternative Process

While the previous theorizing focused on the role of anticipated guilt as a process account for the effect of transaction-level wage transparency on consumers' preference, we also consider a

potential alternative account—quality expectations. Prior research has demonstrated that consumers rely on information such as price to make inferences about a product’s quality (Gerstner 1985; Huber and McCann 1982; Rao and Monroe 1989; Riesz 1979), which can affect consumer preferences (Gneezy et al. 2014). Our main argument is that transaction-level wage information may also be used to form quality-related inferences. According to efficiency-wage theory, paying higher wages can motivate employees, and as a result, increase productivity (Akerlof 1982; Akerlof and Yellen 1990; Cohn et al. 2014; Fisman and Luca 2018). Complementary to this firm-level perspective, consumers may develop similar beliefs about the motivation levels of workers who receive fair wages. Specifically, consumers may believe that higher wages motivate service workers to provide better service (e.g., higher disclosed compensation may make consumers anticipate increased effort from the service worker), thus raising their quality expectations. Yet, we posit that this quality-based account—which is also new to the literature—is independent of the effect concerning social preferences toward the service worker described above (H1), and that the effect of guilt persists, even if we control for quality expectations.

Overview of Studies

We present the results of six studies ($N = 2,777$; Table 1) across five different service domains designed to test these hypotheses. In the first set of studies (1-3), all pre-registered and incentive-compatible, we test the predicted main effect (H1), namely, that disclosing payment of a higher (fairer) wage to a service worker can increase consumers’ preference for that service. Study 1 tests in a field setting whether a fair (vs. unfair or undisclosed) wage paid to a service worker increases consumers’ willingness to pay for that service. Study 2, in a similar field setting, provides further support for the main effect in a different service domain, demonstrating that consumers choosing between two beverage-delivery services prefer the more expensive option, if it

discloses a higher wage for the service worker. In the domain of ride-hailing services, Study 3 shows that the preference for the more expensive service (paying a fair wage) depends on the magnitude of the price increase. However, preferences were not further affected by individual differences regarding resource constraints or the “pain of paying.”

Table 1: Overview of Studies

Study	Context	N	Key DV	Contribution	Main Finding
1	City Tour, Field Study	315	Incentive-compatible WTP	Establishes the main effect (H1).	Significantly higher WTP for services that disclose a fair wage versus an unfair wage or versus not disclosing the wage.
2	Beverage Delivery, Field Study	331	Incentive-compatible choice	Establishes the main effect (H1).	Significantly higher preference for the more expensive service, when higher wages are disclosed.
3	Ride-Hailing	606	Incentive-compatible choice	Establishes the main (H1) effect across varying sets of prices; tests moderation of self-reported level of resources.	Preference for the more expensive service (paying a fair wage) is dependent on price. No (moderating) effect of self-reported level of resources (income, scarcity mindset, socio-economic status, tightwad-spendthrift).
4	Wellness	315	Purchase intention, anticipated guilt, quality expectations	Provides process evidence for the role of anticipated guilt (H2) through measured mediation.	Both feelings of anticipated guilt and quality expectations mediate the effect of paying fair wages on purchase intentions.
5	Wellness	410	Purchase intention, anticipated guilt, quality expectations	Provides further process evidence through moderation of descriptive norms regarding common wages (H3).	Whether a wage is perceived as unfair and evokes feelings of increased guilt and decreased purchase intentions depends on the prevailing norm for wages for that service.
6	Translation	800	Booking intention, anticipated guilt, quality expectations	Provides further process evidence through moderation of the nature of the labor (H4).	Whether consumers experience guilt as a result of subjectively unfair compensation is dependent on whether the labor involves human (vs. non-human) labor.

Next, to probe our proposed psychological process, Studies 4-6 examine whether feelings of anticipated guilt mediate the effect (Study 4, H2), and test two theoretically derived moderators: prevailing norms for wages (Study 5, H3) and the nature of the labor (Study 6, H4). All three studies also establish that transaction-level wage disclosure independently affects consumers’ preference for a service through feelings of anticipated guilt, as well as consumers’ expectations regarding the service quality. We report all data exclusions (if any) and conditions. In all our studies, sample sizes were determined a-priori based on pre-tests and power considerations. All the stimuli are available in the Web Appendix.

Study 1: City Tour Study

Study 1 aims to test our main prediction that paying service workers a higher (i.e., fairer) transaction-level wage, and making it transparent, increases consumer preference for that service. We conducted a pre-registered experiment in a field setting with university students who participated in a survey on guided city tours.

Method

Three hundred and fifteen students (50% female, $M_{\text{age}} = 25$ years) volunteered to complete an online survey about local city tours, distributed through a university mailing list of a major European university. The first part of the survey asked participants to share their experiences and attitudes about city tours, their ratings of main attractions in the city, their preferred means of transportation to explore a city, how long they have lived there, and how well they knew the city. In the last part of the survey, as a token of appreciation, participants got the chance to book a two-hour guided city tour for themselves and up to four friends at their own preferred price using a truth-telling mechanism (Wertenbroch and Skiera 2002). Participants were randomly assigned to one of three conditions that differed in their descriptions of the city tour available for booking at the end of the survey. All three conditions provided the same diagnostic information, including the name, starting point, language, theme, and regular price (99€) of the tour. What differed between conditions was the disclosure of the tour guide's compensation. In the "non-transparent" condition, no information about the tour guide's wage was disclosed, whereas a compensation of 20€ and 75€ was disclosed in the "low-wage" and "high-wage" conditions.

The dependent variable was the stated willingness to pay (WTP) for the described tour, measured using the Becker-DeGroot-Marschak mechanism (Becker et al. 1964), which participants indicated on a slider scale ranging from 0 to 99€ (in 1€ increments). The exact procedure was

described to participants in detail (see exemplary stimuli in Web Appendix B) and implemented after the completion of the study as part of an online meeting with a randomly selected participant. After stating their WTP, participants in the “non-transparent” condition were asked to estimate the amount the tour guide would receive. All participants then rated the fairness of the tour guide’s compensation (disclosed or estimated) on a 7-point scale (“extremely unfair” to “extremely fair”). Finally, participants provided their e-mail address (optional) and answered basic demographic questions (age and gender).

Results and Discussion

Manipulation check (fairness). We first examined the effect of the treatments on participants’ perceptions regarding the fairness of the tour guide’s compensation using linear regression. As expected, participants in the transparent high-wage condition indicated higher fairness ratings ($M = 4.89$, $SD = 1.64$) than those in the transparent low-wage condition ($M = 3.13$, $SD = 1.72$; $\beta = -1.76$, $p < .001$) and non-transparent condition ($M = 4.39$, $SD = 1.61$; $\beta = -.51$, $p = .031$).⁵ These findings demonstrate that our experimental conditions successfully manipulated the perceived fairness of the wages.

Main analyses. A linear regression of WTP on treatments revealed significant effects, with participants in the high-wage condition being willing to pay 7.41€ more ($M = 41.70$, $SD = 25.10$; $p = .028$) than participants in the low-wage condition ($M = 34.29$, $SD = 22.74$). Similarly, participants in the high-wage condition were willing to pay 5.74€ more than those in the non-transparent condition ($M = 35.96$, $SD = 23.99$; $p = .09$).

In sum, the results of this incentive-compatible study provide evidence in a field setting that

⁵ The relatively high fairness rating in the non-transparent condition can be explained by the relatively high compensations that participants estimated the tour guide would receive ($M = 42.72$, $Mdn = 49$, $SD = 22.01$).

paying a fair transaction-level wage can increase consumers' willingness to pay for a service. Specifically, we show that consumers are willing to pay more for the same service offer (with an identical market value), if this service offer discloses that the service worker is paid a fair wage. This result is remarkable given that no further information about the service worker (name, age, gender, or experience) was provided.

Study 2: Beverage Delivery Study

Study 2 was pre-registered and designed to test the effect of higher wages on an alternative preference measure in a different service domain (beverage delivery). In an incentive-compatible choice task, we used horizontally differentiated services and varied prices to further enhance ecological validity. Specifically, participants were asked to choose between two beverage-delivery services. Both service offers disclosed the amount paid to the delivery driver, but their total prices differed. While the less expensive offer always disclosed the same payment for the delivery driver, we varied the payment amount for the more expensive offer. We expected participants to be more likely to choose the more expensive offer when the disclosed payment for the delivery driver was higher than that of the less expensive offer.

Methods

Three hundred and thirty-one participants (66% female, $M_{\text{age}} = 28$ years) were recruited via the mailing list of another major European university to participate in this three-condition, between-subjects experiment, answering questions on their experiences and preferences regarding beverages and beverage-delivery services (including weekly spending for beverages). At the end of the survey, participants had the opportunity to win a crate (6 bottles) of apple juice as a "thank you" for their participation. Specifically, participants could choose between two delivery services offering two

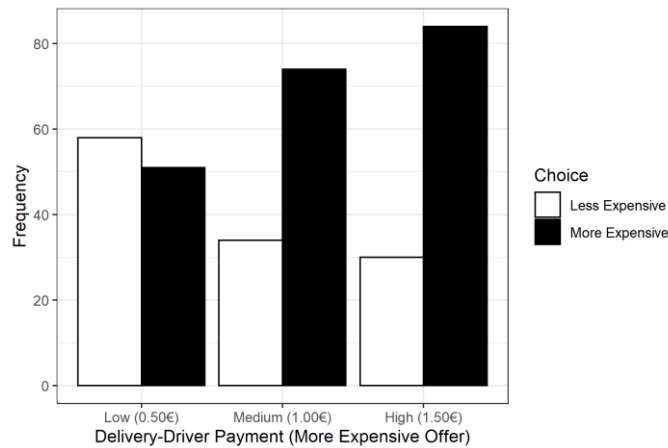
different brands of apple juice. Both alternatives displayed the total price of the product, as well as the amount the delivery driver would receive. However, winning participants only had to pay the amount for the delivery driver. The chosen apple juice was free of charge. This choice was the key dependent measure of this study. Following the choice task, participants provided their e-mail address (optional) and answered basic demographic questions (age, gender, and zip code). After the survey was closed, two winners were randomly drawn and their choices implemented, that is, they received their chosen apple juice and had to pay the delivery fee for the driver (making this task consequential).

The two choice alternatives were designed as follows: the less expensive delivery offer always had a total price of 10.49€, and a fixed amount for the delivery driver (0.50€). The more expensive offer always had a total price of 10.99€. However, within that offer, we manipulated the delivery driver's payment. Participants were randomly assigned to one of three delivery-driver payments (low: 0.50€; medium: 1.00€; high: 1.50€). The order of the more expensive offer (left vs. right), the names of the two delivery services, and the two apple juice brands were all counter-balanced (see Web Appendix C for exemplary stimuli). Given that participants had to pay the delivery driver themselves, this design directly measured participants' willingness to provide a higher transaction-level wage for the service worker.

Results and Discussion

When both offers disclosed the same delivery-driver payment (0.50€), slightly more participants (53%) preferred the less expensive beverage-delivery service. However, when the more expensive alternative disclosed a higher delivery-driver payment (to be covered by participants), they preferred the more expensive service in both the medium (69%) and high (74%) payment conditions (see Figure 1).

Figure 1: Choice by Payment Condition



A logistic regression of choice of the more expensive offer on the experimental conditions corroborated this result. Compared to the low-payment condition, where drivers received the same payment in both offerings (0.50€), participants were significantly more likely to choose the more expensive option in the medium-payment (odds ratio [OR] = 2.48, $p = .001$) and high-payment (OR = 3.19, $p < .001$) conditions. These regression results are robust when controlling for self-reported weekly spending for beverages, age, and gender.

In sum, this experiment demonstrates in a field setting that consumers are willing to pay more for services offers that provide higher transaction-level wages to (anonymous) service workers. In our experimental conditions, this effect increases with the amount paid to the service worker.

To further explore whether people are willing to forego their own monetary payoffs to achieve fair compensation for service workers, we conducted an auxiliary study with workers on the online labor market Amazon Mechanical Turk (MTurk). In this study, participants were empowered to determine the earnings of another MTurk worker for a given task. Specifically, participants had to make a trade-off between a higher (lower) payment to themselves as a bonus payment for their participation and a lower (higher) payment to the service worker completing the task (see Web

Appendix H for details). In line with the findings presented above, participants were willing to give up real economic gains for themselves in exchange for higher payment of an anonymous service worker. Naturally, we would expect this effect to flatten (and at some point reverse) due to individual differences and resource constraints, for example. We examine whether such factors can potentially moderate our main effect in Study 3.

Study 3: Ride-hailing Study

In this pre-registered and incentive-compatible study, we probe consumers' willingness to pay more for service offers that provide fair transaction-level wages in the domain of ride-hailing services; we do this by implementing larger price differences between options, and manipulating more explicitly the perceived fairness of the service worker's wage. Importantly, we directly test resource constraints as a potential moderator of preferences for fair(er) wages. Specifically, while consumers may like the general idea of paying more to do what they perceive as "the right thing," resource constraints may prevent consumers from acting accordingly. There are a variety of possible measures available to capture such constraints. To cover both actual and perceived resource constraints, as well as different attitudes toward spending, we employed four different measures. Personal annual income and current socio-economic status (SES; Griskevicius et al. 2013) were included as indicators of actual resource availability. In order to capture scarcity as a mindset (Goldsmith et al. 2020), we measured resource scarcity using a four-item scale (Roux et al. 2015). Finally, we included the Tightwad-Spendthrift scale (Rick et al. 2008) to assess the extent to which people find the prospect of spending money painful. Tightwads are assumed to experience a high level of pain upon paying, and thus spend less than they would "ideally" like to spend.

Methods

Pre-test. To determine fair/unfair compensation for drivers of a ride-hailing service (e.g., Uber, Lyft), we conducted a pre-test with the same population as in the main study (MTurk, U.S. sample; $N = 151$, 44% female, $M_{\text{age}} = 36$ years).⁶ Participants were asked how much an Uber/Lyft driver should be paid per hour (without tips). In addition, we elicited fairness and underpaid/overpaid ratings (7-point scales) for 12 payment levels (\$5 to \$60, in \$5 increments). Finally, we asked basic demographic questions (age, gender, personal annual income).

The median suggested hourly wage was \$15 ($M = 16.34$, $SD = 9.52$). According to the fairness ratings, the shift from an unfair to a fair wage (crossing the midpoint) occurred between \$10 and \$15. Fairness ratings plateaued at \$20 and decreased again for values higher than \$30. This pattern was also reflected in the ratings of underpaid/overpaid wages: wages of \$10 or less were perceived as underpaid, and wages of \$40 were perceived as overpaid. A regression analysis revealed no systematic relationship between suggested fair wages and self-reported annual income.

Main study. Six hundred and six participants (44% female, $M_{\text{age}} = 41$) of the same population as the pre-test (MTurk, U.S. sample) read that they needed a ride from Manhattan to JFK Airport to catch a flight, and would be willing to spend up to \$80 for that ride. Inspired by real-world applications (Google Maps app), participants were shown a smartphone screen with a map app displaying available rides in their area. The app displayed the route, expected total ride time, and two available ride-hailing services (Uber and Lyft). For each ride-hailing option, participants saw the total price and approximate amount of money the driver would get (for exemplary stimuli see Web Appendix D). To manipulate perceptions of disclosed payments to drivers as unfair versus fair, the selection of these values was informed by the results of the pre-test.

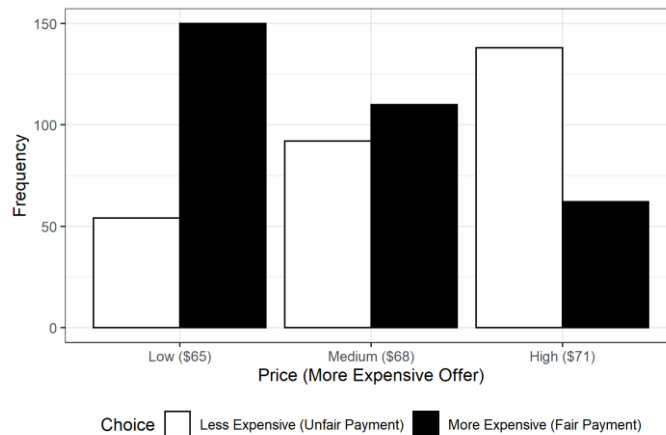
⁶ In the pre-test, two participants were excluded from analyses due to suggesting unrealistic driver wages of more than \$200 per hour.

Participants were exposed to two options—one less expensive and one more expensive option. The price of the less expensive option was held constant at \$62, and always disclosed a payment of \$9 (unfair payment) for the driver. The price of the more expensive option varied, while the disclosed payment for the driver was held constant at \$21 (fair payment). Specifically, we varied the price of the more expensive option by randomly assigning participants to one of three price conditions: low (\$65), medium (\$68), and high (\$71) price. Thus, the cost for participants to choose the fair payment (\$21) increased across the three conditions from low to high. To increase ecological validity, we used nationally operating service providers (Lyft and Uber) and counterbalanced which of the two providers was the less versus more expensive option. The dependent measure was the participants' choice of the ride-hailing service. Participants were told that their choice had actual consequences, as five randomly selected participants would receive a voucher for the selected service provider over the difference between the budgeted amount (i.e., \$80 given in the instructions) and the amount spent given their choice (i.e., price of the option chosen). Thus, in addition to their payment for completing the study, participants could receive one of these vouchers (which increased the cost of choosing the fair-wage option), thereby making the task incentive-compatible. After the choice task, participants indicated the perceived fairness of the driver's compensation in each offer, and what they thought was a fair hourly wage for a driver. Next, participants completed established scales of resource constraints: current socio-economic status, scarcity mindset (all measured on 7-point scales), and spendthrift-tightwads scale. Finally, participants indicated their perceived awareness of the research hypothesis (PARH scale; Rubin 2016), age, gender, Uber/Lyft customer status (yes, no), ride-hailing service preference (Uber, Lyft, none of the two), and personal annual income.

Results and Discussion

Participants' choice of the more expensive option (providing fair payment to the driver) was highest in the low-price condition (74%). This preference for the more expensive option decreased as the price for this option increased (medium-price: 54%, high-price: 31%), see Figure 2.

Figure 2: Choice by Price Condition



Thus, even in the high-price condition, where participants had to pay a substantially higher price for the fair option, close to a third of participants were willing to pay more for a similar service that provided a fair payment to the driver. A logistic regression of choice of the more expensive option on the experimental conditions showed that the likelihood of choosing that option, relative to the low-price condition, was significantly lower in the medium-price (OR = .43, $p < .001$) and high-price (OR = .16, $p < .001$) conditions.

Our four measures of resource constraints were significantly correlated with each other (r : $-.71$ to $.47$, $p < .05$), suggesting that the measures captured both overlapping and distinct facets of resource constraints. Therefore, to test the extent to which resource constraints moderate the effect of price on choice, we ran four separate regression models (one for each resource constraint measure; see Table 2).

Table 2: Logistic Regressions

	Choice of More Expensive Ride-Hailing Service (=1)			
	(1)	(2)	(3)	(4)
Medium (\$68)	-0.280 (0.490)	-1.361** (0.688)	-0.915 (0.580)	-0.890* (0.489)
High (\$71)	-2.260*** (0.539)	-1.695** (0.682)	-1.750*** (0.593)	-2.501*** (0.524)
Socio-Economic Status (SES)	-0.009 (0.090)			
Medium (\$68) × SES	-0.162 (0.118)			
High (\$71) × SES	-0.110 (0.123)			
Scarcity Mindset		-0.021 (0.107)		
Medium (\$68) × Scarcity Mindset		-0.110 (0.141)		
High (\$71) × Scarcity Mindset		-0.029 (0.144)		
Tightwad-Spendthrift Score			0.032 (0.033)	
Medium (\$68) × Tightwad-Spendthrift Score			0.006 (0.047)	
High (\$71) × Tightwad-Spendthrift Score			-0.007 (0.047)	
Income				-0.119 (0.096)
Medium (\$68) × Income				-0.0002 (0.137)
High (\$71) × Income				-0.202 (0.139)
Constant	1.057*** (0.389)	1.115** (0.516)	0.657 (0.408)	1.424*** (0.366)
Observations	606	606	606	606
AIC	767.2	772.6	771.1	770.1

NOTE.—* $p < 0.1$; ** $p < 0.05$; *** $p < 0.01$

Compared to the low-price condition, the high-price condition had a significant negative effect on the choice of the more expensive (fair payment) ride-hailing service in all four regressions. However, the effect of the medium-price condition was significant in only one of the four models. Importantly, none of the regressions revealed a significant main or interaction effect involving either of the four resource-constraint measures. Thus, while participants' preference for the fair-

payment service is significantly reduced when the price is high, we observed no significant effects of individual differences regarding actual or perceived resource constraints, or different attitudes toward spending (pain of paying). These effects remained robust when controlling for PARH scores as a covariate (main effect and interaction with price condition) in the analyses. Thus, there was no indication that our results were driven by demand effects.

In summary, in yet another service domain, the results demonstrate that consumers generally prefer offerings that compensate service workers fairly. This preference significantly decreases when it becomes more costly to satisfy, but does not completely disappear within the tested price range of our study. The results suggest that even for standardized services such as ride-hailing, a substantial share of consumers do not seek the lowest price but instead consider worker compensation under transaction-level price transparency.

Further, the difference in preference between price conditions is unaffected by actual and perceived resource constraints or different attitudes toward spending. One possible explanation for not observing direct or moderating effects of the resource-constraint measures is that consumers with lower (rather than higher) budgets are likely the ones who are most affected by low wages. They are also more likely to have personal experiences with unfair exchanges, enabling them to relate more to feelings of being paid unfairly. Accordingly, consumers with lower (rather than higher) budgets may have a stronger relative preference for providing fair compensation within their financial means, potentially offsetting any moderating effects of resource constraints. This finding is also consistent with anecdotal and empirical evidence. For example, despite frequently being financially constrained, many waiters give generous tips at restaurants because they can better put themselves in the shoes of other waiters. Moreover, empirical research on consumers' tipping behavior toward cab drivers found that low-income consumers tip as much as higher-income consumers (Elliott et al. 2017).

Study 4: Wellness Study and Measured Mediation

In the previous studies, we have documented the effects of transaction-level wage disclosure on consumer preferences (H1), as expressed in incentive-compatible WTP and choice settings across different service domains. Study 4 aims to shed more light on the psychological processes underlying these effects on preference. We predicted that feelings of anticipated guilt and, conversely, warm glow mediate the observed preferences. To test this prediction (H2) we devised a three-cell, between-subjects experiment, using wellness services. Participants read a description of a single spa offer that disclosed wage information, and were asked to state their willingness to purchase it. To test for mediation, we measured the expected feelings of guilt induced by the service offer. We also controlled for participants' expectations of service quality.

Methods

Pre-test. To determine fair wages for massage therapists, we asked 108 participants (41% female, $M_{\text{age}} = 37$ years; MTurk, U.S. sample) how much a qualified massage therapist should be paid for a one-hour massage. The median and mode of their responses was \$50 ($M = 53.5$, $SD = 23.89$). In addition, we elicited fairness and appropriateness ratings (7-point scales) for seven payment levels (\$10 to \$70, in \$10 increments). These ratings plateaued at wages of \$50 and more.

Main study. Three hundred and fifteen participants (53% female, $M_{\text{age}} = 35.7$ years; MTurk, U.S. sample) were randomly assigned to one of three conditions (transparent wage: low vs. medium vs. high). Participants read the description of a spa offer, which included the qualifications and experience of the massage therapist, the amount of money the massage therapist received, and the total price of the service (for exemplary stimuli see Web Appendix E).

With a constant total price of \$100, participants learned that the massage therapist was paid \$15 (low-wage condition; unfair), \$50 (medium-wage condition; fair), or \$85 (high-wage condition;

fair, but might be considered overpayment). These values were informed by the results of the pre-test. After indicating their willingness to purchase the service (1 = “would definitely not book” to 7 = “would definitely book”), participants completed an anticipated guilt (warm glow) measure. We adopted established items from prior marketing studies to measure anticipated guilt and warm glow (Giebelhausen et al. 2016; Paharia 2020) to account for the bivalent nature of the construct. Specifically, participants indicated to what extent they felt “bad,” “guilty,” “remorseful,” “ashamed” (anticipated guilt) and conversely, “happy,” “good,” “a sense of warm glow,” and “morally satisfied” (anticipated warm glow) when considering booking the spa (1 = “not at all” to 7 = “very much”). In line with previous research (Giebelhausen et al. 2016), we averaged the items into a combined guilt (warm glow) index ($\alpha = .94$). Next, participants indicated their expectations regarding the quality of the massage (1 = “very low” to 7 = “very high”), their age, gender, income, state of residence, social value orientation (SVO; Murphy et al. 2011, as an exploratory measure), and perceived awareness of the research hypothesis (PARH).

Results

Purchase intentions. An analysis of variance (ANOVA) on purchase intentions revealed significant differences across the three wage conditions ($F(2, 312) = 21.5, p < .001$). According to planned contrasts across conditions, participants were significantly more likely to book the offer when the massage therapist was paid a high ($M = 5.12, SD = 1.35$) or medium wage ($M = 4.90, SD = 1.45$), as opposed to a low wage ($M = 3.77, SD = 1.96, t(312) = 6.47, p < .001$). There were no significant differences in purchase intentions between the high and medium wage conditions ($t(312) = .98, p = .33$). The addition of quality expectations as a covariate in the model produced robust results. In addition to a significant effect of wage ($F(2, 311) = 10.35, p < .001$), this model revealed a significant effect of quality expectations ($F(1, 311) = 56.54, p < .001$). The results

remained also robust when controlling for PARH scores as a covariate (main effect and interaction with wage) in the analyses.

Anticipated guilt. A second ANOVA on the guilt index revealed similar effects ($F(2, 312) = 31.04, p < .001$). Participants in the medium ($M = 3.14, SD = 1.41$) and high ($M = 2.85, SD = 1.28$) wage conditions reported significantly lower levels of guilt than those in the low wage condition ($M = 4.38, SD = 1.74, t(312) = -7.73, p < .001$). We found no significant difference in guilt between the high and medium wage conditions ($t(312) = -1.43, p = .15$).

Mediation analyses. We conducted a mediation analysis (PROCESS model 4 with 10,000 bootstrapped samples; Hayes 2018) with the wage conditions as the categorical independent variable, the combined guilt index as the mediator variable, and purchase intention as the dependent variable. The results revealed that both fair-wage conditions (medium and high) were associated with significantly lower levels of guilt ($a_{\text{medium}} = -1.24, t = -5.98, p < .001$; $a_{\text{high}} = -1.53, t = -7.46, p < .001$). The guilt index was also significantly and negatively associated with purchase intentions ($b = -.78, t = -18.71, p < .001$). As predicted, anticipated feelings of guilt mediated the effects of the medium (95% confidence interval [CI_{95%}] [.62, 1.32]) and high (CI_{95%} [.86, 1.55]) wage conditions on willingness to purchase. The results of this mediation analysis hold when controlling for quality expectations; anticipated feelings of guilt still mediated the effects of the medium (CI_{95%} [.37, 1.00]) and high (CI_{95%} [.45, 1.10]) wage conditions on willingness to purchase.

In addition, we also tested a parallel mediation model with both the guilt index and quality expectations as mediators. The results revealed that both of these independently mediated the effects of the medium (CI_{95%_guilt}: [.58, 1.24]; CI_{95%_quality}: [.01, .18]) and high (CI_{95%_guilt}: [.8, 1.45]; CI_{95%_quality}: [.02, .25]) wage conditions on purchase intentions. As above, both fair-wage conditions were associated with significantly lower levels of guilt. The guilt index was again significantly and negatively associated with purchase intentions ($b_{\text{guilt}} = -.74, t = -16.07, p < .001$). Furthermore,

both fair-wage conditions were also associated with significantly higher quality expectations ($a_{\text{medium_quality}} = .54, t = 3.61, p < .001$; $a_{\text{high_quality}} = .84, t = 5.65, p < .001$). Quality expectations in turn were significantly and positively associated with purchase intentions ($b_{\text{quality}} = .15, t = 2.45, p = .015$).

Discussion

Study 4 provides evidence that paying service workers a fair transaction-level wage can increase consumer purchase intentions if the wage is disclosed. However, such increased demand is *not a linear* function of the service worker's wage. Wages beyond what consumers consider fair provide no additional utility or further increase in purchase intentions. Moreover, and consistent with our theorizing, reduced feelings of anticipated guilt mediate the effect of paying higher wages (H2). In addition, these results reveal the novel finding that paying a fair wage also affects consumers' quality inferences, with higher payment resulting in higher anticipated quality and greater purchase intentions. Importantly, and in line with our proposed framework, anticipated feelings of guilt appear to operate independently of quality expectations, as suggested by the robustness of the mediation analyses to adding quality expectations.

Study 5: Wellness Study and Moderated Mediation

Thus far, we have presented either higher or lower service worker wages in order to manipulate perceived fairness. However, we argue that whether a wage is considered fair is also a function of consumers' expectations and existing wage norms. If the perceived fairness of wage information affects consumer preference through guilt, this effect may be attenuated if some general practice (i.e., a descriptive norm) involves paying low wages in that service setting. In Study 5 we seek to provide further process evidence, through moderation, by testing whether the manipulation

of descriptive norms regarding common wages moderates the effect of disclosing wage information on consumer preference, through anticipated feelings of guilt (H3).

Methods

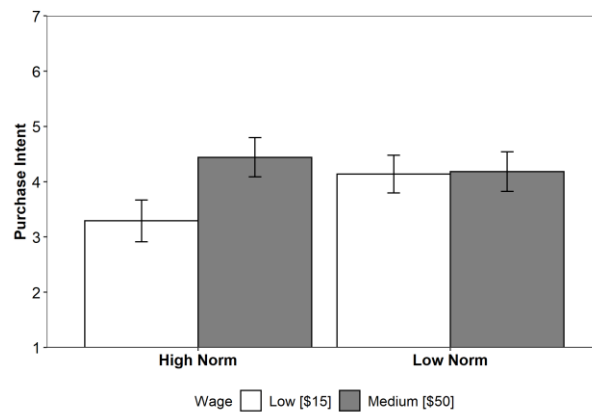
Four hundred and ten participants (55% female, $M_{\text{age}} = 37.3$ years; MTurk, U.S. sample) were randomly assigned to one condition in a 2 (wage: low [\$15] vs. medium [\$50]) \times 2 (norm: low wage [\$10] vs. high wage [\$75]) between-subjects design. Similar to Study 4, participants read the description of a spa offer (for exemplary stimuli see Web Appendix F). Depending on the assigned wage condition, they learned that the massage therapist received \$15 (low-wage condition; unfair) or \$50 (medium-wage condition; fair) for a one-hour massage. As an additional factor, we manipulated wage norms for this service by explaining that, as part of their internet search for spas, participants learned that a common wage for massage therapists was \$10 per hour (low-wage-norm condition) or \$75 per hour (high-wage-norm condition). As in Study 4, participants then indicated their intention to book the offer, feelings of anticipated guilt/warm glow ($\alpha = .93$), quality expectations, general demographics (age, gender, income, and state of residence), and their perceived awareness of the research hypothesis (PARH).

Results

Purchase intention. A 2×2 ANOVA for purchase intentions revealed a significant main effect of wage ($F(1, 406) = 10.74, p = .001$), no significant main effect of norm ($F(1, 406) = 2.58, p > .1$), and a significant wage \times norm interaction ($F(1, 406) = 9.17, p = .002$). In line with our previous findings, when participants learned that the industry norm was a high wage of \$75, participants were more likely to book the offer when the massage therapist received the medium wage rather than the low wage ($M_{\text{medium}} = 4.44, SD = 1.84; M_{\text{low}} = 3.29, SD = 1.93; F(1, 406) =$

19.78, $p < .001$). Moreover, consistent with H3, when they learned that the norm was a low wage of \$10, participants were equally inclined to book the offer, regardless of whether the massage therapist received the medium wage or the low wage ($M_{\text{medium}} = 4.18$, $SD = 1.86$; $M_{\text{low}} = 4.14$, $SD = 1.77$; $F(1, 406) = 0.03$, $p > .8$). Figure 3 provides a summary of the results across all four conditions.

Figure 3: Purchase Intent by Wage and Norm Conditions

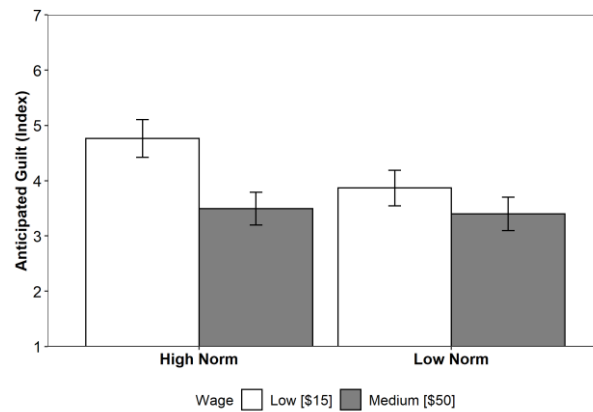


NOTE.—Error bars represent 95% confidence intervals.

Consistent results were obtained from a 2×2 analysis of covariance, with quality expectations as a covariate. In addition to a significant effect of the wage ($F(1, 405) = 6.76$, $p < .01$) and a significant wage \times norm interaction ($F(1, 405) = 8.42$, $p < .01$), it revealed a significant effect of quality expectations ($F(1, 405) = 55.6$, $p < .001$). The results were also robust when controlling for PARH scores as a covariate (main effect and interactions with wage and norm) in the analyses.

Anticipated guilt. A 2×2 ANOVA for the guilt index revealed significant main effects of wage ($F(1, 406) = 29.22$, $p < .001$) and norm ($F(1, 406) = 9.56$, $p < .01$), as well as a significant wage \times norm interaction ($F(1, 406) = 6.21$, $p < .05$), highlighting the moderating effect of norms on anticipated guilt.

Figure 4: Anticipated Guilt (Index) by Wage and Norm Conditions



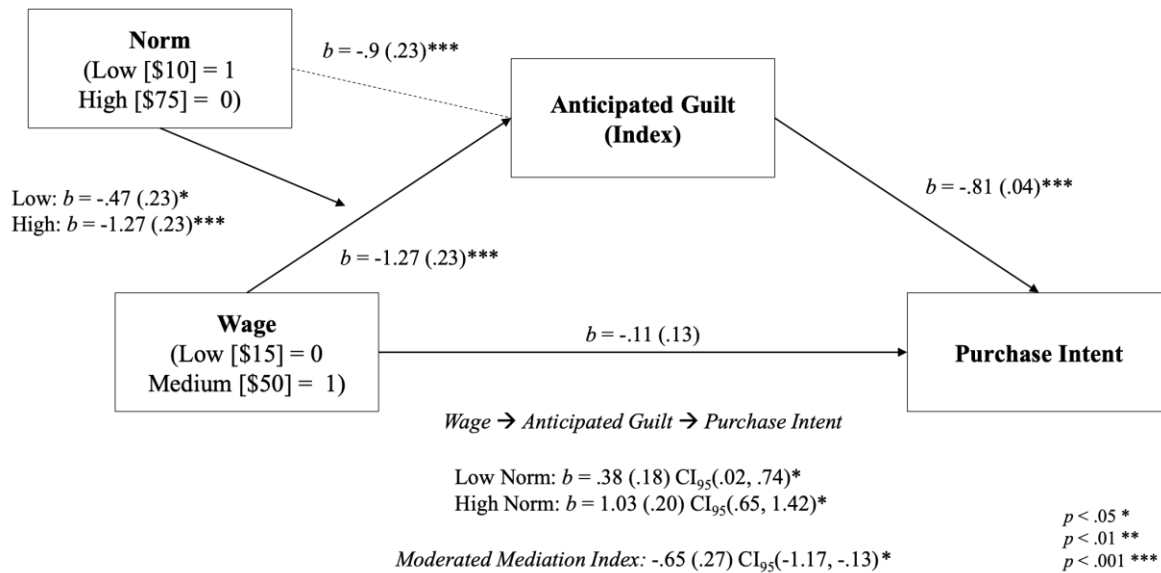
NOTE.—Error bars represent 95% confidence intervals.

When participants learned that the industry norm was a high wage of \$75, they reported higher levels of anticipated guilt when the massage therapist received the low wage as opposed to the medium wage ($M_{\text{low}} = 4.76$, $SD = 1.74$; $M_{\text{medium}} = 3.50$, $SD = 1.54$; $F(1, 406) = 31.03$, $p < .001$). However, learning that the industry norm was a low wage of \$10 prompted participants to report lower levels of anticipated guilt, thereby attenuating the effect of the wage the massage therapist received ($M_{\text{low}} = 3.87$, $SD = 1.65$; $M_{\text{medium}} = 3.40$, $SD = 1.56$; $F(1, 406) = 4.26$, $p < .05$). Figure 4 provides a summary of the results across all four conditions.

Moderated mediation analysis. To test whether the mediating effect of transaction-level wage disclosures on purchase intentions (through anticipated feelings of guilt) was moderated by wage norms, we conducted a moderated mediation analysis (PROCESS model 7 with 10,000 bootstrapped samples; Hayes 2018), with wage (0 = low, 1 = medium) as the independent variable, the index of anticipated guilt as the mediator, purchase intention as the dependent variable, and the indicated wage norm (0 = high, 1 = low) as moderator of the path between wage and the anticipated guilt index. This model revealed significant positive indirect effects through anticipated guilt in both the low norm ($b = .38$, $CI_{95\%} [.02, .74]$) and high norm ($b = 1.03$, $CI_{95\%} [.65, 1.42]$) conditions. However, the positive indirect effect on purchase intentions through anticipated guilt was

significantly stronger when the indicated norm was a higher (vs. lower) wage (index of moderated mediation $CI_{95\%} [-1.17, -.13]$).

Figure 5: Moderated Mediation Model



The results of the model in Figure 5 show that the positive effect of offering a higher wage to a service worker on consumers' intention of purchasing the service, through decreased feelings of guilt, is attenuated when the general norm is to pay less. The results of this moderated mediation model remained robust when controlling for quality expectations.

Discussion

Study 5 provides additional process evidence through moderated mediation. The study supports our prediction that the positive effect of disclosing fair transaction-level wages depends on the prevailing norm regarding the payment for a service (H3). Paying a wage close to what is perceived as the norm (fair wage) reduces feelings of guilt and increases consumers' willingness to purchase. Paying a low wage is perceived as unfair if the general norm is a higher wage; it also

evokes increased guilt and lower purchase intentions, but not if the general norm is to pay a lower wage.

Study 6: Translation Study and Moderated Mediation

In the previous studies, we demonstrated that disclosing transaction-level wage information taps into consumers' social preferences. Such disclosures trigger feelings of guilt when consumers anticipate negative consequences for others as a result of their own actions. In this context, "others" refers to other social actors. We do not expect consumers to feel guilt over unfair behavior toward non-human actors (e.g., machines, software). Thus, an important boundary condition of our main effect and our proposed process is the nature of the worker. Study 6 tests whether the mediating effect of disclosing wage information on consumer preferences, through anticipated feelings of guilt, is moderated by the nature of the labor (human vs. software). We test this hypothesis (H4) in a service domain that involves no direct contact between customers and the service worker—that is, translation services.

Methods

Eight hundred participants⁷ (49% female; $M_{\text{age}} = 38.8$ years, MTurk, U.S. sample) were randomly assigned to one of four conditions in an experiment using a 2(compensation⁸: unfair [\$15] vs. fair [\$75]) \times 2(nature of the worker: human vs. non-human) between-subjects design.

Participants were asked to imagine they were writing a professional blog featuring comprehensive travelogues. For one of their recent reports (equivalent to roughly five pages of text), they received

⁷ Participants had to correctly answer two comprehension questions before being able to proceed and complete the study.

⁸ To determine fair/unfair compensation for translation services, we conducted a pre-test (MTurk, U.S. sample; $N = 108$, 45% female, $M_{\text{age}} = 35$ years) similar to the ones described in Studies 3 and 4. The median suggested hourly wage was \$30 ($M = 38.49$, $SD = 26.92$). According to the fairness ratings, compensations smaller than \$20 were considered unfair, whereas compensations greater than \$50 were considered fair.

a large number of requests for translation into a foreign language, requiring the help of a professional translation service. They subsequently saw the price quote for a translation service, and were asked to indicate how likely they were to book it. The offer stated the name of the translation company and the translator, a service description, and a quality assurance (to keep stated quality levels constant across conditions). The total price was held constant at \$125 across conditions.

Depending on the nature-of-worker condition (human vs. non-human labor), the service was either provided by a *human* translator or a translation *software*. Depending on the compensation condition, the disclosed cost of the translator/translation software was \$15 or \$75, which was explained to participants as the money paid by the translation company to its employee/for using the translation software. The respective difference between the disclosed compensation and the total price was displayed as other costs (\$110 vs. \$50), for exemplary stimuli see Web Appendix G. The key dependent measure was participants' reported likelihood of booking the translation service (7-point scale, 1 = "not at all likely" to 7 = "extremely likely"). Participants then rated their feelings of anticipated guilt (index, $\alpha = .92$), quality expectations, preferences and beliefs regarding services performed by a human service provider (vs. software), and completed general questions regarding demographics (age, gender) and the PARH scale.

Results

Booking intention. A 2×2 ANOVA on booking intentions revealed significant main effects of compensation ($F(1, 796) = 22.44, p < .001$) and nature of the labor ($F(1, 796) = 4.27, p = .039$), as well as a significant interaction ($F(1, 796) = 15.51, p < .001$). When participants considered an offer involving human labor (the translator), they were more likely to book the offer when the translator received the \$75 (vs. \$15) compensation ($M_{\text{fair}} = 4.84, SD = 1.43; M_{\text{unfair}} = 3.85, SD = 1.65; F(1, 796) = 37.54, p < .001$). However, when participants considered an offer involving

non-human labor (the translation software), they were equally likely to book the presented offer, regardless of the compensation condition ($M_{\text{fair}} = 4.15$, $SD = 1.63$; $M_{\text{unfair}} = 4.06$, $SD = 1.78$; $F(1, 796) = 0.32$, $p = .571$). Similar results were obtained from a 2×2 ANCOVA with quality expectations as a covariate. In addition to a significant main effect of compensation ($F(1, 795) = 12.38$, $p < .001$) and a significant compensation \times nature of the labor interaction ($F(1, 795) = 7.15$, $p = .008$), a significant effect of quality expectations was revealed ($F(1, 795) = 249.24$, $p < .001$). There was no significant effect of the nature of labor ($F(1, 795) = .01$, $p = .93$). The results remained robust when including PARH scores as a covariate (main effect and interactions) in the analyses.

Anticipated guilt. A 2×2 ANOVA on the guilt index revealed a significant main effect of compensation ($F(1, 796) = 45.01$, $p < .001$), a non-significant effect of the nature of labor, and a significant two-way interaction ($F(1, 796) = 20.83$, $p < .001$). As expected, when participants considered the offer involving the human translator, they reported higher levels of anticipated guilt when the translator received the \$15 (vs. \$75) compensation ($M_{\text{unfair}} = 3.86$, $SD = 1.57$; $M_{\text{fair}} = 2.76$, $SD = 1.14$; $F(1, 796) = 63.39$, $p < .001$). However, when participants considered the offer involving the non-human actor, they reported similar levels of anticipated guilt across the two compensation conditions ($M_{\text{unfair}} = 3.36$, $SD = 1.41$; $M_{\text{fair}} = 3.14$, $SD = 1.36$; $F(1, 796) = 2.31$, $p = .129$).

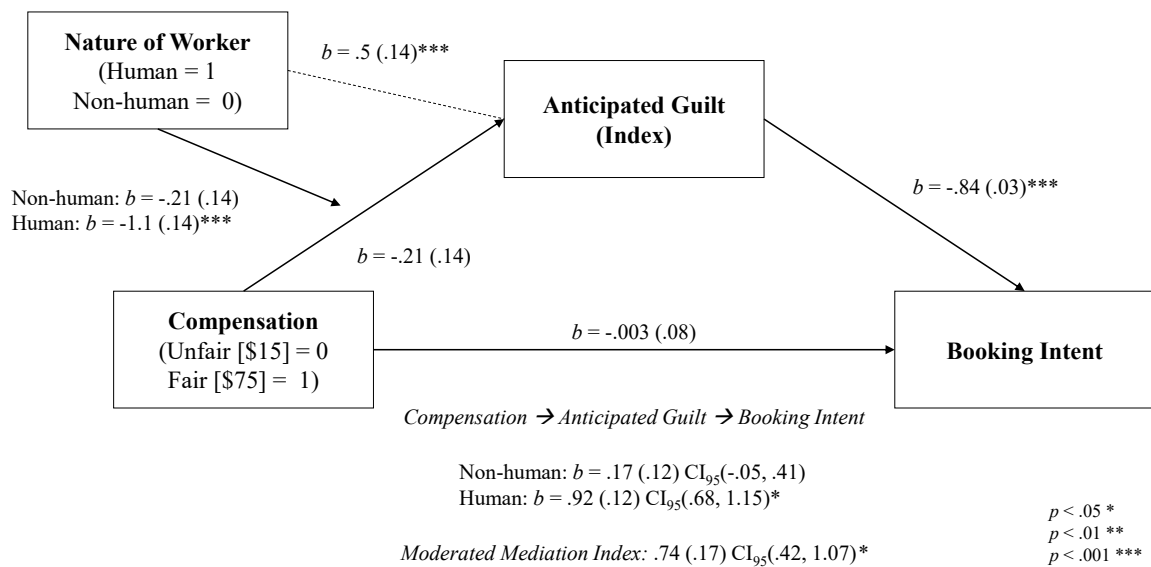
Quality expectations. Another 2×2 ANOVA on quality expectations provided significant main effects of compensation ($F(1, 796) = 11.32$, $p < .001$) and nature of worker ($F(1, 796) = 16.57$, $p < .001$), and a significant two-way interaction ($F(1, 796) = 10.56$, $p < .001$). When participants considered the offer involving the human translator, they reported higher levels of expected quality when the translator was compensated fairly (vs. unfairly) ($M_{\text{fair}} = 5.84$, $SD = .99$; $M_{\text{unfair}} = 5.26$, $SD = 1.27$; $F(1, 796) = 21.82$, $p < .001$). However, when participants considered the offer involving the translation software, they reported similar levels of expected quality across the two

compensation conditions ($M_{\text{fair}} = 5.19$, $SD = 1.39$; $M_{\text{unfair}} = 5.18$, $SD = 1.36$; $F(1, 796) = .007$, $p = .94$).

Moderated mediation analysis. To test whether the mediating effect of compensation disclosure on purchase intentions through anticipated feelings of guilt was moderated by the nature of the worker (H4), we conducted a moderated mediation analysis (PROCESS model 7 with 10,000 bootstrapped samples; Hayes 2018). The model contained compensation (0 = unfair, 1 = fair) as the independent variable, the guilt index as the mediator variable, booking intention as the dependent variable, and the nature of the worker (0 = non-human, 1 = human) as the moderator variable of the path between compensation and the index of anticipated guilt.

The results revealed a significant positive indirect effect through anticipated guilt when the translation was conducted by a human translator ($b = .92$, $CI_{95\%} [.68, 1.15]$), but not when it was conducted by a software ($b = .17$, $CI_{95\%} [-.05, .41]$). The positive indirect effect on booking intentions through anticipated guilt was significantly stronger when the labor was provided by a human (vs. non-human) translator, index of moderated mediation $CI_{95\%} [.42, 1.07]$.

Figure 6: Moderated Mediation Model



The results of the model in Figure 6 show that the positive effect of offering a fair compensation to a service worker on consumers' likelihood of purchasing the service, through decreased feelings of guilt, is only observed when the service worker is human. The results of this moderated mediation model remained robust when adding quality expectations as a covariate.

Discussion

The results of this study provide further evidence for our proposed mechanism whereby transaction-level wage transparency can increase consumers' preference for services. Moreover, as predicted by H4, the study reveals an important boundary condition of this effect, namely that the proposed changes in guilt due to unfair/fair compensation are only observed for human service workers. The same was observed for differences in quality expectations. Together, these results suggest that the effect of disclosing fair wages is more likely to occur in contexts where the share of human labor in value creation is substantial, and apparent to consumers. In addition, the observed main effect also appears to hold in service domains where consumers are not in direct contact with the service worker.

General Discussion

Summary of Findings

Across six studies in multiple service domains (i.e., city tours, beverage delivery, ride-hailing, wellness, and translations) using different samples (U.S. and non-U.S. samples), we examined the consequences of making transaction-level wages transparent to consumers. Specifically, we determined when and why disclosing wages paid to service workers can be valuable to consumers and firms. We provide evidence using various preference measures (i.e., WTP, choice, purchase intention) that disclosing payment of a fair(er) wage to the service worker

can increase consumers' preference for that service. Our findings advance the literature by suggesting that consumers not only care about fairness in the direct exchange between themselves and a firm (as established in research on price fairness), but also in the exchange between the firm and the service worker. We find that this greater preference for services provided in a fair-wage setting is driven by consumers' feelings of anticipated guilt and higher expectations concerning quality.

We also identified and tested several boundary conditions. First, we find that there are limits to how much more consumers are willing to pay for services disclosing fair payments (the results of Study 3 suggest that in case of too high prices, consumer preference for fair-payment options is reduced). However, we could not identify significant moderating effects of individual differences regarding resource constraints (actual or perceived), or attitudes toward spending. Second, we find that our documented main effect is moderated by existing social norms regarding wages. Third, we show that the effect also depends on the nature of the worker providing the service. We observe the effect for human but not for non-human actors.

Importantly, our studies provide evidence for both the robustness and generalizability of the effect. We document the effect across different levels of "identifiability" of the service worker and degrees of service interaction. Specifically, we included settings with detailed descriptions of the service worker (listing names, skills, and qualifications in the wellness studies), as well as complete anonymity (e.g., city tour, beverage delivery). We also covered high degrees of interaction between the consumer and service worker (e.g., city tour, wellness studies), and services with no direct interaction (e.g., translations).

Theoretical Contributions

This research advances burgeoning literature on cost transparency (e.g., Lim et al. 2018; Mohan et al. 2020), offering a nuanced theoretical perspective on when and why disclosing the compensation of service workers can create value for consumers, firms, and workers. By disclosing transaction-level wage information as part of a service offer, firms may differentiate offerings from their competitors by addressing consumers' preference for a fair exchange relationship between the firm and service workers. In this context, the disclosure of wage information can be understood as a potential decision signpost (Ungemach et al. 2018), enabling consumers to choose in line with their social preferences.

Our findings contribute to research on fairness in economic transactions (Bolton and Ockenfels 2000; Fehr and Schmidt 2006; Pigors and Rockenbach 2016) by highlighting that consumers seek fairness not only in their direct exchanges with firms, but also in the indirect exchange between firms and their workers. This finding is interesting in that consumers acknowledge firms' responsibility for fair compensation (because firms determine workers' wages), but they also accept responsibility themselves to ensure fair compensation through their purchase decisions. Even though consumers do not have a contractual relationship with the worker providing the service, they experience guilt if that service worker is underpaid. Thus, our findings advance our understanding of the role of guilt in economic transactions.

Moreover, our findings contribute to the efficiency wage hypothesis, which promotes the idea that paying more than the required minimum wage can be economically beneficial due to increased worker motivation and productivity (Akerlof 1982; Akerlof and Yellen 1990). In addition to this established benefit, our new findings suggest that by making fair wages transparent, firms may also benefit from increased consumer preference for their offers. In this demand-based account, disclosing higher transaction-level wages may increase demand (and WTP) not only because

consumers perceive that well-paid workers provide higher quality products (either through higher motivation, higher skills or both), but also because they anticipate positive emotional consequences (lower guilt or greater warm glow) if they choose offers from firms that disclose fair wages.

Implications for Practice and Public Policy

From a practical perspective, our findings may help managers understand how to use transaction-level wage transparency as a marketing strategy. Disclosing wage information as part of their service descriptions may enable firms to differentiate themselves from competitors by addressing consumers' need for a fair exchange relationship between the firm and its service workers. Being transparent about wages, if perceived as fair by consumers, may even allow firms to charge higher prices. However, the opportunity to differentiate service offerings this way may be reduced or even lost as a result of increased automation of services.

Of course, there are limits to consumers' willingness to pay more, but we observe sizeable increases in willingness to pay—independent of self-reported measures of disposable wealth and attitudes toward spending. Accordingly, there seems to be a general need among consumers to see service workers being paid fairly for their work. One potential explanation for the absence of a resource-constraints effect (such as lower willingness to pay for fair wages among less affluent consumers) could be that these consumers have a deeper understanding of unfair payment, and thus have a stronger desire that workers are paid fairly. In addition, it is important to note that fair wage disclosure could also help firms attract skilled workers in the service sector and counteract staff turnover and churn (e.g., the Great Resignation, Blow 2021).

Finally, disclosing transaction-level wages could induce competitive reactions, such that other firms pay and disclose fair wages too, which ultimately may result in fairer wages more generally. Evidence from an auxiliary study ($N = 370$, not reported in detail here) in which we

investigated choices between service offerings with or without disclosures of wage information and the subsequent option to tip, indicated that consumers prefer disclosures over non-disclosures, if the disclosed wage is perceived as fair. In addition, we also observed significant tipping amounts (>10%) across all conditions, with or without disclosure. This observation suggests that disclosing fair wages does not supersede tipping.

We also find that consumers avoid offerings with transparent wage information if the wage appears unfair. Combined, these findings suggest that in order to be effective, a disclosure strategy may require the firm to provide fair compensation, challenge the competition to match its fair wages, and potentially increase wages paid within the market. Our data and findings cannot provide direct evidence of this outcome but they highlight the potential for transaction-level wage transparency to increase social welfare, as disclosing wages arguably might help address gender pay gaps (e.g., Schlager et al. 2021). The findings are therefore also relevant for policy makers aiming to tackle wage inequality. While current measures addressing gender pay gaps focus on mandating the publication of firm-level pay information to pressure firms, the presented approach of disclosing wage information on a transaction level offers an alternative solution by addressing wage inequality more generally (e.g., across different genders and minority groups), as part of the exchange between consumers and firms. Thus, unlike tipping, which also provides consumers with an option to provide fair compensation to service workers, the burden of providing payments is not placed solely on the consumer. The disclosure of wage information differs from the practice of tipping in other important ways. Because consumers typically do not know how much a service worker is compensated at the individual service level, they face uncertainty about whether fair compensation has been achieved. Moreover, consumers conventionally provide tips within a rather narrow set of service domains, which can actually widen compensation gaps (e.g., between waiters and chefs, Dubner 2016). There is also evidence that tipping in and of itself can give rise to discrimination

(Ayres et al. 2005; Lynn et al. 2008), or, in the case of hospitality services, potentially reduce service workers' well-being by exposing them to sexual harassment (Azar 2020; Klein et al. 2021). Conversely, introducing the practice of disclosing transaction-level wages can span a much broader set of occupations and thus offers a potential option to help reduce such forms of discrimination.

Limitations and Avenues for Further Research

Our research has several limitations that also offer the potential for future investigations. First, our findings suggest that it may make strategic sense for firms to both pay and disclose wages that are perceived as fair by consumers. Yet, our research cannot establish whether the subsequent benefits of increased demand outweigh the additional costs of paying potentially higher wages. Such an analysis would require access to more detailed data on a disclosing firm's cost and demand structure. This evaluation is further complicated by the fact that some of the beneficial effects of disclosure on brand image, competitive position, and workforce may take time to materialize and lay out long-term implications. While there is little research on the long-term effects of wage transparency, research by Bamberger et al. (2021) suggests that short-term gains from wage inequality are dampened by adverse effects on long-term firm profitability through negative customer-related consequences and customer satisfaction. We believe that in certain contexts, the combined effect of perceptions of increased quality and social responsibility, greater willingness to pay, and heightened consumer preference might compensate for and even exceed the costs associated with paying potentially higher wages. However, more research is needed to establish whether this "win-win-win" outcome for firms, workers, and consumers can actually be realized. In this context, it would be interesting to assess the long-term effects of disclosing wages on consumer choice, competitive behavior, and the establishment of new norms. That is, studying competitive

dynamics and strategic decisions for firms related to their disclosures of transaction-level wage information offers another fruitful direction for research.

Second, our investigation involves service contexts in which workers' wages account for a major share of the value added. These services make up a substantial proportion of many national economies, but the effects of disclosing workers' wages in other domains, wherein wages account for smaller shares of the value added (e.g., physical goods), are unclear. The contribution of human labor to the production of goods is less apparent to consumers; additional research might explore new ways to make this value contribution transparent. Moreover, we only studied contexts in which a single worker provides the service. Would the findings change if multiple workers were involved? Continued research to address these questions might offer a more nuanced view of the effects of transaction-level wage transparency.

Overall, the present paper represents a first step toward identifying and clarifying the effects of disclosing transaction-level wage information on consumers' judgments and economic decisions in service domains. In light of current societal challenges, this research also offers promising avenues for further work seeking to encourage social preferences and consumer choices that help promote fair outcomes for consumers, firms, and workers.

References

- Akerlof, George A. (1982), "Labor Contracts as Partial Gift Exchange," *Quarterly Journal of Economics*, 97 (4), 543-69.
- Akerlof, George A. and Janet L. Yellen (1990), "The Fair Wage-Effort Hypothesis and Unemployment," *Quarterly Journal of Economics*, 105 (2), 255-83.
- Andorfer, Veronika A. and Ulf Liebe (2012), "Research on Fair Trade Consumption—a Review," *Journal of Business Ethics*, 106, 415-35.
- Andreoni, James (1990), "Impure Altruism and Donations to Public Goods: A Theory of Warm-Glow Giving," *Economic Journal*, 100 (401), 464-77.
- Andreoni, James, Justin M. Rao, and Hannah Trachtman (2017), "Avoiding the Ask: A Field Experiment on Altruism, Empathy, and Charitable Giving," *Journal of Political Economy*, 125 (3), 625-53.
- Ayres, Ian, Fredrick E. Vars, and Nasser Zakariya (2005), "To Insure Prejudice: Racial Disparities in Taxicab Tipping," *Yale Law Journal*, 114, 1613-74.
- Azar, Ofer H. (2011), "Business Strategy and the Social Norm of Tipping," *Journal of Economic Psychology*, 32 (3), 515-25.
- (2020), "The Economics of Tipping," *Journal of Economic Perspectives*, 34 (2), 215-36.
- Bamberger, Boas, Christian Homburg, and Dominik M. Wielgos (2021), "Wage Inequality: Its Impact on Customer Satisfaction and Firm Performance," *Journal of Marketing*, 85 (6), 24-43.
- Barrett, Karen Caplovitz (1995), "A Functionalist Approach to Shame and Guilt," in *Self-Conscious Emotions: The Psychology of Shame, Guilt, Embarrassment, and Pride*, June Price Tangney and Kurt W. Fischer, eds.: Guilford Press.
- Becker, Gordon M., Morris H. DeGroot, and Jacob Marschak (1964), "Measuring Utility by a Single-Response Sequential Method," *Behavioral Science*, 9 (3), 226-32.
- Blow, Paul (2021), "How to Manage the Great Resignation," *The Economist*, available at <https://www.economist.com/business/2021/11/27/how-to-manage-the-great-resignation>.
- Bolton, Gary E. and Axel Ockenfels (2000), "Erc: A Theory of Equity, Reciprocity, and Competition," *American Economic Review*, 90 (1), 166-93.
- Boyce, Christopher J., Gordon D.A. Brown, and Simon C. Moore (2010), "Money and Happiness: Rank of Income, Not Income, Affects Life Satisfaction," *Psychological Science*, 21 (4), 471-75.

- Buell, Ryan W. and Basak Kalkanici (2020), "How Transparency into Internal and External Responsibility Initiatives Influences Consumer Choice," *Management Science*, 67 (2), 932-50.
- Card, David, Alexandre Mas, Enrico Moretti, and Emmanuel Saez (2012), "Inequality at Work: The Effect of Peer Salaries on Job Satisfaction," *American Economic Review*, 102 (6), 2981-3003.
- Cohn, Alain, Ernst Fehr, and Lorenz Goette (2014), "Fair Wages and Effort Provision: Combining Evidence from a Choice Experiment and a Field Experiment," *Management Science*, 61 (8), 1777-94.
- de Hooge, Ilona E., Rob M. A. Nelissen, Seger M. Breugelmans, and Marcel Zeelenberg (2011), "What Is Moral About Guilt? Acting "Prosocially" at the Disadvantage of Others," *Journal of Personality and Social Psychology*, 100 (3), 462-73.
- de Hooge, Ilona E., Marcel Zeelenberg, and Seger M. Breugelmans (2007), "Moral Sentiments and Cooperation: Differential Influences of Shame and Guilt," *Cognition and Emotion*, 21 (5), 1025-42.
- De Melo, Celso, Stacy Marsella, and Jonathan Gratch (2016), "People Do Not Feel Guilty About Exploiting Machines," *ACM Transactions on Computer-Human Interaction*, 23 (2), 1-17.
- Dubner, Stephen J. (2016), "The No-Tipping Point," *Freakonomics Radio*, available at <https://freakonomics.com/podcast/danny-meyer/>.
- Elliott, David, Marcello Tomasini, Marcos Oliveira, and Ronaldo Menezes (2017), "Tippers and Stiffers: An Analysis of Tipping Behavior in Taxi Trips," *2017 IEEE SmartWorld*, 1-8.
- Erlandsson, Arvid, Amanda Å. Jungstrand, and Daniel Västfjäll (2016), "Anticipated Guilt for Not Helping and Anticipated Warm Glow for Helping Are Differently Impacted by Personal Responsibility to Help," *Frontiers in Psychology*, 7 (1475), 1-19.
- Fehr, Ernst and Klaus M. Schmidt (2006), "The Economics of Fairness, Reciprocity and Altruism – Experimental Evidence and New Theories," in *Handbook of the Economics of Giving, Altruism and Reciprocity*, Serge-Christophe Kolm and Jean Mercier Ythier, eds. Vol. 1. Amsterdam: Elsevier.
- (1999), "A Theory of Fairness, Competition, and Cooperation," *Quarterly Journal of Economics*, 114 (3), 817-68.

- Fisman, Ray and Michael Luca (2018), "How Amazon's Higher Wages Could Increase Productivity," *Harvard Business Review*, available at <https://hbr.org/2018/10/how-amazons-higher-wages-could-increase-productivity>.
- Gerstner, Eitan (1985), "Do Higher Prices Signal Higher Quality?," *Journal of Marketing Research*, 22 (2), 209-15.
- Giebelhausen, Michael, HaeEun Helen Chun, J. Joseph Cronin Jr., and G. Tomas M. Hult (2016), "Adjusting the Warm-Glow Thermostat: How Incentivizing Participation in Voluntary Green Programs Moderates Their Impact on Service Satisfaction," *Journal of Marketing*, 80 (4), 56-71.
- Gneezy, Ayelet, Uri Gneezy, and Dominique Olié Lauga (2014), "A Reference-Dependent Model of the Price–Quality Heuristic," *Journal of Marketing Research*, 51 (2), 153-64.
- Goldsmith, Kelly, Vladas Griskevicius, and Rebecca Hamilton (2020), "Scarcity and Consumer Decision Making: Is Scarcity a Mindset, a Threat, a Reference Point, or a Journey?," *Journal of the Association for Consumer Research*, 5 (4), 358-64.
- Granulo, Armin, Christoph Fuchs, and Stefano Puntoni (2019), "Psychological Reactions to Human Versus Robotic Job Replacement," *Nature Human Behavior*, 3, 1062-69.
- Gray, Heather M., Kurt Gray, and Daniel M. Wegner (2007), "Dimensions of Mind Perception," *Science*, 315 (5812), 619-19.
- Greiner, Ben, Axel Ockenfels, and Peter Werner (2011), "Wage Transparency and Performance: A Real-Effort Experiment," *Economics Letters*, 111 (3), 236-38.
- Griskevicius, Vladas, Joshua M. Ackerman, Stephanie M. Cantú, Andrew W. Delton, Theresa E. Robertson, Jeffrey A. Simpson, Melissa Emery Thompson, and Joshua M. Tybur (2013), "When the Economy Falters, Do People Spend or Save? Responses to Resource Scarcity Depend on Childhood Environments," *Psychological Science*, 24 (2), 197-205.
- Haidt, Jonathan (2003), "The Moral Emotions," in *Handbook of Affective Sciences*, Richard J. Davidson and Klaus R. Scherer and H. Hill Goldsmith, eds.: Oxford University Press.
- Hayes, Andrew F. (2018), *Introduction to Mediation, Moderation, and Conditional Process Analysis: A Regression-Based Approach*. New York: Guilford Press.
- Horton, John J. and Adam Kapelner (2021), "Perceptions of Occupations: Good on Wages, Bad on Changes," *Working Paper*, available at <https://github.com/johnjosephorton/kwow/blob/master/kwow.pdf>.

- Huber, Joel and John McCann (1982), "The Impact of Inferential Beliefs on Product Evaluations," *Journal of Marketing Research*, 19 (3), 324-33.
- Huhmann, Bruce A. and Timothy P. Brotherton (1997), "A Content Analysis of Guilt Appeals in Popular Magazine Advertisements," *Journal of Advertising*, 26 (2), 35-46.
- Kahneman, Daniel, Jack L. Knetsch, and Richard Thaler (1986), "Fairness as a Constraint on Profit Seeking: Entitlements in the Market," *American Economic Review*, 76 (4), 728-41.
- Ketelaar, Timothy and Wing Tung Au (2003), "The Effects of Feelings of Guilt on the Behaviour of Uncooperative Individuals in Repeated Social Bargaining Games: An Affect-as-Information Interpretation of the Role of Emotion in Social Interaction," *Cognition & Emotion*, 17 (3), 429-53.
- Klein, Olivier, Camila Arnal, Sarah Eagan, Philippe Bernard, and Sarah J. Gervais (2021), "Does Tipping Facilitate Sexual Objectification? The Effect of Tips on Sexual Harassment of Bar and Restaurant Servers," *Equality, Diversity and Inclusion*, 40 (4), 448-60.
- Lim, Wei Shi, Vincent Mak, Christopher S. Tang, and Raghavendra P. KC (2018), "Adopting Cost Transparency as a Marketing Strategy: Analytical and Experimental Exploration," *Working Paper*, available at https://www.anderson.ucla.edu/documents/sites/faculty/review%20publications/research/Lim-Mak-Tang-Raghavendra_2018_SSRN-id3252823.pdf.
- Lindsay-Hartz, Janice (1984), "Contrasting Experiences of Shame and Guilt," *American Behavioral Scientist*, 27 (6), 689-704.
- Long, Xiaoyang and Javad Nasiry (2020), "Wage Transparency and Social Comparison in Sales Force Compensation," *Management Science*, 66 (11), 5290-315.
- Lynn, Michael, Michael C. Sturman, Christie Ganley, Elizabeth Adams, Matthew Douglas, and Jessica McNeal (2008), "Consumer Racial Discrimination in Tipping: A Replication and Extension," *Journal of Applied Social Psychology*, 38 (4), 1045-60.
- Mohan, Bhavya, Ryan W. Buell, and Leslie K. John (2020), "Lifting the Veil: The Benefits of Cost Transparency," *Marketing Science*, 39 (6), 1033-201.
- Mohan, Bhavya, Tobias Schlager, Rohit Deshpandé, and Michael I. Norton (2018), "Consumers Avoid Buying from Firms with Higher CEO-to-Worker Pay Ratios," *Journal of Consumer Psychology*, 28 (2), 344-52.
- Murphy, Ryan O., Kurt A. Ackermann, and Michel J. J. Handgraaf (2011), "Measuring Social Value Orientation," *Judgment and Decision Making*, 6 (8), 771-81.

- Nelissen, R. M. A., A. J. M. Dijkster, and N. K. de Vries (2007), "Emotions and Goals: Assessing Relations between Values and Emotions," *Cognition & Emotion*, 21 (4), 902-11.
- Ortony, Andrew, Gerald L. Clore, and Allan Collins (1988), *The Cognitive Structure of Emotions*: Cambridge University Press.
- Paharia, Neeru (2020), "Who Receives Credit or Blame? The Effects of Made-to-Order Production on Responses to Unethical and Ethical Company Production Practices," *Journal of Marketing*, 84 (1), 88-104.
- Paolilli, Antonio Luigi (2009), "About the "Economic" Origin of Altruism," *Journal of Socio-Economics*, 38 (1), 60-71.
- Pelozo, John, Katherine White, and Jingzhi Shang (2013), "Good and Guilt-Free: The Role of Self-Accountability in Influencing Preferences for Products with Ethical Attributes," *Journal of Marketing Research*, 77 (1), 104-19.
- Pigors, Mark and Bettina Rockenbach (2016), "Consumer Social Responsibility," *Management Science*, 62 (11), 3123-37.
- Rai, Arun and Vallabh Sambamurthy (2006), "Editorial Notes—the Growth of Interest in Services Management: Opportunities for Information Systems Scholars," *Information Systems Research*, 17 (4), 327-31.
- Rao, Akashay R. and Kent B. Monroe (1989), "The Effect of Price, Brand Name, and Store Name on Buyers' Perceptions of Product Quality: An Integrative Review," *Journal of Marketing Research*, 26 (3), 351-57.
- Rick, Scott I., Cynthia E. Cryder, and George Loewenstein (2008), "Tightwads and Spendthrifts," *Journal of Consumer Research*, 34 (6), 767-82.
- Riesz, Peter C. (1979), "Price-Quality Correlations for Packaged Food Products," *Journal of Consumer Affairs*, 13 (2), 236-47.
- Roux, Caroline, Kelly Goldsmith, and Andrea Bonezzi (2015), "On the Psychology of Scarcity: When Reminders of Resource Scarcity Promote Selfish (and Generous) Behavior," *Journal of Consumer Research*, 42 (4), 615-31.
- Rubin, Mark (2016), "The Perceived Awareness of the Research Hypothesis Scale: Assessing the Influence of Demand Characteristics," *figshare*, available at <https://doi.org/10.6084/m9.figshare.4315778.v2>.
- Rust, Roland T. and Ming-Hui Huang (2014), "The Service Revolution and the Transformation of Marketing Science," *Marketing Science*, 33 (2), 206-21.

- Schlager, Tobias, Bhavya Mohan, Katherine DeCelles, and Michael I. Norton (2021), "Consumers—Especially Women—Avoid Buying from Firms with Higher Gender Pay Gaps," *Journal of Consumer Psychology*, 31 (3), 518-31.
- Soule, Catherine A. Armstrong and Robert Madrigal (2015), "Anchors and Norms in Anonymous Pay-What-You-Want Pricing Contexts," *Journal of Behavioral and Experimental Economics*, 57, 167-75.
- Tangney, June Price and Ronda L. Dearing (2002), "Gender Differences in Morality," in *The Psychodynamics of Gender and Gender Role*, Robert F. Bornstein and Joseph M. Masling, eds.: American Psychological Association.
- Ungemach, Christoph, Adrian R. Camilleri, Eric J. Johnson, Richard P. Larrick, and Elke U. Weber (2018), "Translated Attributes as Choice Architecture: Aligning Objectives and Choices through Decision Signposts," *Management Science*, 64 (5), 2445-59.
- Ungemach, Christoph, Neil Stewart, and Stian Reimers (2011), "How Incidental Values from the Environment Affect Decisions About Money, Risk, and Delay," *Psychological Science*, 22 (2), 253-60.
- Wertenbroch, Klaus and Bernd Skiera (2002), "Measuring Consumers' Willingness to Pay at the Point of Purchase," *Journal of Marketing Research*, 39 (2), 228-41.
- Xia, Lan, Kent B. Monroe, and Jennifer L. Cox (2004), "The Price Is Unfair! A Conceptual Framework of Price Fairness Perceptions," *Journal of Marketing*, 68 (4), 1-15.

When Transaction-Level Wage Transparency Can Increase Consumer Preference

Table of Contents:

Web Appendix A:

Overview of Related Studies

Web Appendix B:

Stimuli (Example) for Study 1: City Tour Study

Web Appendix C:

Stimuli (Example) for Study 2: Beverage Delivery Study (Translated)

Web Appendix D:

Stimuli (Example) for Study 3: Ride-Hailing Study

Web Appendix E:

Stimuli (Example) for Study 4: Wellness Study and Measured Mediation

Web Appendix F:

Stimuli (Example) for Study 5: Wellness Study and Moderated Mediation

Web Appendix G:

Stimuli (Example) for Study 6: Translation Study and Moderated Mediation

Web Appendix H:

Auxiliary Study: Online Labor Market Study

*WEB APPENDIX A:
OVERVIEW OF RELATED STUDIES*

Paper	What is disclosed?	Disclosure of wage?	Disclosure to consumers?	Disclosure at the transaction level?	Channel	Method(s)	Level of analysis	Main dependent variable(s)	Main finding(s)
Bamberger et al. (2021)	Wage inequality between top managers and employees (ratio)	No	No	No	Customer satisfaction	Structural Equation Modeling using survey (company informants) and panel data	Company informants	Short-term profitability operationalized as return on assets (ROA); long-term profitability (operationalized as the future three-year average industry-adjusted ROA); aggregate customer satisfaction data (American Customer Satisfaction Index [ACSI])	Wage inequality harms customer satisfaction. The positive direct effect of wage inequality on short-term profitability vanishes in the long run, whereas the adverse effect through customer satisfaction persists, leading to a nonsignificant total effect on long-term profitability.
Buell and Kalkanci (2020)	Transparency concerning social responsibility practices	No	Yes	No	-	Field studies	Aggregate sales	Sales	Providing transparency into a company's internal responsibility efforts can be at least as effective in motivating customer purchases as providing transparency into responsibility efforts that are external to its value chain.
Greiner et al. (2011)	Peer wages	Yes	No	No	-	Lab experiment	Worker performance	Effort	Without transparency about peer wages in a real effort experiment, a change in wages does not affect performance. With transparency, however, higher-paid workers tend to work more accurately, and lower-paid workers shirk more under-piece rates.
Lim et al. (2018)	Quality; selling price	No	Yes	No	-	Analytical model and lab experiment	Seller decisions (to adopt cost transparency)	Demand and profit	Quality differentiation between firms is the key driver for predicting whether different firms should adopt cost transparency or not (results from analytical analysis). The experiment provides supportive evidence that, as quality differentiation decreases, both firms are more likely to adopt cost transparency and reduce prices.
Long and Nasiry (2020)	Wages of sales agents	Yes	No	No	-	Analytical model	Compensation schemes for sales agents	Sales outcomes	The work environment—which includes such aspects as demand uncertainty, correlation across sales territories, and the possibility of help/collaboration—plays a significant role in a firm's compensation and wage transparency decisions.
Mohan et al. (2018)	CEO-to-worker pay ratios	No	Yes	No	Fairness perceptions	Field and lab experiments	Consumer decisions	Choice and willingness-to-buy from high pay ratio retailer	Consumers avoid buying from firms with higher CEO-to-worker pay ratios.
Mohan et al. (2020)	Multiple cost components to produce a product	No	Yes	Yes	Trust	Field and lab experiments	Consumer decisions	Choice and willingness-to-buy cost-transparent option; trust	Cost transparency can increase sales and trust.

*WEB APPENDIX A:
OVERVIEW OF RELATED STUDIES*

Obloj and Zenger (2022)	Salary data	Yes	No	No	-	Econometric modeling	Academics	Pay equity and pay equality, as well as the performance-basis for pay, specifically how the links between pay and observable performance measures change both within the broader population and within individual academic departments and institutions.	Results suggest pay transparency has a significant and economically sizeable effect in reducing pay inequality and inequity, including by gender, as well as weakening the link between observable performance metrics and pay.
Schlager et al. (2021)	A firm's gender pay gap	No	Yes	No	Perceptions of unfairness	Lab experiments; text mining	Consumer	Willingness-to-buy, purchase intent, willingness-to-pay	Consumers—especially women—avoid buying from firms with higher gender pay gaps.
<i>This paper</i>	<i>Transaction-level wage information of service workers</i>	Yes	Yes	Yes	<i>Anticipated guilt; quality perceptions</i>	<i>Experiments in field and lab settings</i>	<i>Consumer</i>	<i>Service choice; purchase intent; willingness-to-pay</i>	<i>Disclosing transaction-level wage information of a service worker can increase consumer preference for that firm's service if the compensation is sufficiently high (i.e., perceived as fair by consumers).</i>

References

- Bamberger, Boas, Christian Homburg, and Dominik M. Wielgos (2021), “Wage Inequality: Its Impact on Customer Satisfaction and Firm Performance,” *Journal of Marketing*, 85 (6), 24-43.
- Buell, Ryan W. and Basak Kalkanici (2020), “How Transparency into Internal and External Responsibility Initiatives Influences Consumer Choice,” *Management Science*, 67 (2), 932-50.
- Greiner, Ben, Axel Ockenfels, and Peter Werner (2011), “Wage Transparency and Performance: A Real-Effort Experiment,” *Economics Letters*, 111 (3), 236-38.
- Lim, Wei Shi, Vincent Mak, Christopher S. Tang, and Raghavendra P. KC (2018), "Adopting Cost Transparency as a Marketing Strategy: Analytical and Experimental Exploration," Working Paper, available at https://www.anderson.ucla.edu/documents/sites/faculty/review%20publications/research/Lim-Mak-Tang-Raghavendra_2018_SSRN-id3252823.pdf.
- Long, Xiaoyang and Javad Nasiry (2020), “Wage Transparency and Social Comparison in Sales Force Compensation,” *Management Science*, 66 (11), 5290-315.
- Mohan, Bhavya, Tobias Schlager, Rohit Deshpandé, and Michael I. Norton (2018), “Consumers Avoid Buying from Firms with Higher CEO-to-Worker Pay Ratios,” *Journal of Consumer Psychology*, 28 (2), 344-52.
- Mohan, Bhavya, Ryan W. Buell, and Leslie K. John (2020), “Lifting the Veil: The Benefits of Cost Transparency,” *Marketing Science*, 39 (6), 1033-201.
- Obloj, Tomasz and Todd Zenger (2022), “The Influence of Pay Transparency on (Gender) Inequity, Inequality and the Performance Basis of Pay,” *Nature Human Behaviour*, 6, 646-55.
- Schlager, Tobias, Bhavya Mohan, Katherine DeCelles, and Michael I. Norton (2021), “Consumers—Especially Women—Avoid Buying from Firms with Higher Gender Pay Gaps,” *Journal of Consumer Psychology*, 31 (3), 518-31.

*WEB APPENDIX B:
STIMULI (EXAMPLE) FOR STUDY 1: CITY TOUR STUDY*

Now you have the chance to get a 2 hour guided tour of [CITY] for yourself and up to 4 friends worth 99 €. However, you can name the price that you are willing to pay for this tour. You do not have to pay more than you want. Please carefully review the offer below and think about how much you are willing to pay for it.

City Tour “Rediscover [CITY]”
<ul style="list-style-type: none">• Discover new and hidden places in [CITY].• Learn more about the history and legends of this city.• The city tour is led by an experienced city guide.• Languages: German, English.• Start and end meeting point: [LOCATION] ([LOCATION’]).
Regular price: 99 € (of which your tour guide receives 75 €)

The purchase price is not yet determined. Please tell us the highest price you are willing to pay for the tour. Among all participants, we will randomly draw one participant who will then actually get the chance to book the city tour.

We will use the following procedure. We will arrange an online meeting in which you will randomly draw a price. If the price you draw is less than or equal to the price you named, you can book the city tour for the price you have drawn (thus the maximum amount you would have to pay is the price you told us). If the price you draw is greater than the price you named, you cannot book the city tour.

This procedure ensures that it is best for you to truthfully tell us the maximum price you are willing to pay for the city tour. If you tell us a price that is higher than the price you are willing to pay, you may actually have to pay that higher price. If you tell us a price that is lower than the price you are willing to pay, you will not be able to book the tour although the “real” price you were willing to pay was higher. Note that the price you tell us will have no effect on the actual purchase price, as you are drawing the purchase price randomly.

*WEB APPENDIX C:
STIMULI (EXAMPLE) FOR STUDY 2: BEVERAGE DELIVERY STUDY (TRANSLATED)*

Please review the two offers below carefully. Then choose the offer that you personally prefer.

Beverage Delivery Service Maier



Becker's Best Naturally Cloudy Apple
6 x 1,0L (Glass)
DEPOSIT BOTTLES

Total Price Including Delivery Crate (incl. VAT and Deposit)	10,49 €
Of Which the Delivery Driver Gets	0,50 €

Beverage Delivery Service Huber



Wolfra Apple Juice Naturally Cloudy
6 x 1,0L (Glass)
DEPOSIT BOTTLES

Total Price Including Delivery Crate (incl. VAT and Deposit)	10,99 €
Of Which the Delivery Driver Gets	1,50 €

*WEB APPENDIX D:
STIMULI (EXAMPLE) FOR STUDY 3: RIDE-HAILING STUDY*

Please review the following **ride-hailing options carefully** and choose the one that you would **personally prefer to use**. (There are no right or wrong choices, please just choose the option you personally prefer.)

59 min

Uber
Driver gets approx. \$9 **\$62**

Lyft
Driver gets approx. \$21 **\$68**

*WEB APPENDIX H:
AUXILIARY STUDY: ONLINE LABOR MARKET STUDY*

This study was conducted to investigate consumer preference for fair wages in another incentive compatible setting. Leveraging an actual online labor market, we empowered participants to determine the wage paid in an exchange relationship between a service task requester and a service task provider. As part of a between-subjects manipulation, we indicated whether the service task provider received a low or a high wage for completing the task. Specifically, participants faced a trade-off between a higher (lower) payment to themselves and a lower (higher) payment to the service task provider completing the task. We conducted this study on the Amazon Mechanical Turk online labor market, which offered an ideal field setting.

Methods

Two hundred sixty-nine participants (48% female, $M_{\text{age}} = 36.5$ years; MTurk, U.S. sample) participated in this online experiment in exchange for a base payment of \$.30 and the possibility of earning a bonus payment of up to \$.10. Participants were randomly assigned to one of two conditions (low vs. high wage). In each condition, participants had the choice between two descriptions of a task (option A or B) that would be completed by another worker on the platform. The task (transcribing a 4-minute audio clip) remained identical; the descriptions differed only in how much the anonymous worker would receive for completing the task and how much participants themselves received as a bonus. In option A, which remained constant across the two experimental conditions, participants received \$.10 as a bonus payment, and the worker received \$.20 for completing the transcription. In option B, participants received \$.05 as a bonus payment, and the worker received either \$.25 (low wage condition) or \$.40 (high wage condition). Thus, within option B, we manipulated between-subjects whether the executing worker received a low or a high wage, requiring participants to make a trade-off between

providing the anonymous worker with a high wage at the expense of earning less money themselves (see below for exemplary stimuli).

You have the choice between two different Human Intelligence Tasks (HITs) to be published on Amazon Mechanical Turk (MTurk).

Both HITs are identical in terms of the task that another worker has to complete (see below).

However, the **HITs differ** with regard to **(1) what the other worker will be paid** for completing the task and **(2) what your bonus payment will be**.

Please review the two options below carefully. To indicate your choice, click on your preferred option. We will implement your choice exactly as you made it.

HIT (Audio Clip Transcription)

An MTurk worker will be asked to listen to a 2-minute audio clip of a team meeting and transcribe what was said. No filler terms like “hmm” and “errs” should be included in the transcription. MTurk workers typically need **4 minutes to complete** such a HIT.

Option “A”		Option “B”	
For completing the HIT (Audio Clip Transcription), <u>the other worker</u> will be paid	\$0.20	For completing the HIT (Audio Clip Transcription), <u>the other worker</u> will be paid	\$0.40
<u>Your</u> bonus payment will be	\$0.10	<u>Your</u> bonus payment will be	\$0.05
I choose Option “A”		I choose Option “B”	

Our dependent variable, choice of option B, therefore is incentive-compatible and consequential. The participants are not the direct beneficiaries of the task, so this design rules out the possibility that they might deliberately choose the higher wage option based on their expectation of better quality. After completing the choice task, participants completed demographic items (age, sex, and income) and indicated what they thought was a fair wage for an MTurk worker to complete a 4-minute task (manipulation check).

Results

Perceived fairness. The distribution of amounts that participants considered a fair wage for the task had a mean of \$.56 ($Mdn = .4$, $SD = .54$). There were no significant differences between the reported fair wages across the two conditions ($t(263.78) = 1.46$, $p > .05$). According to the distribution of fairness judgments, the proposed wage of \$.40 in the high wage condition was considered fair by at least 50% of the participants, whereas the wage of \$.25 was considered fair by only 14% of the participants. Thus, our manipulation of perceived fairness appeared effective.

Choice. Figure H1 shows the choice shares by condition. A chi-square test revealed that participants were more likely to choose option B (and accept a lower bonus payment than in option A) if the performing worker earned a higher wage (51%) than if the performing worker earned a lower wage (31%; $\chi^2(1, 269) = 10.73$, $p < .01$). This stronger preference for the higher wage option demonstrates that consumers may be willing to forgo economic gains for themselves, in exchange for providing another worker with a fair wage.

Figure H1: Choice of Wages/Bonus Payments

