



## Marketing Science

Publication details, including instructions for authors and subscription information:  
<http://pubsonline.informs.org>

### Lifting the Veil: The Benefits of Cost Transparency

Bhavya Mohan, Ryan W. Buell, Leslie K. John

To cite this article:

Bhavya Mohan, Ryan W. Buell, Leslie K. John (2020) Lifting the Veil: The Benefits of Cost Transparency. Marketing Science 39(6):1105-1121. <https://doi.org/10.1287/mksc.2019.1200>

Full terms and conditions of use: <https://pubsonline.informs.org/Publications/Librarians-Portal/PubsOnLine-Terms-and-Conditions>

This article may be used only for the purposes of research, teaching, and/or private study. Commercial use or systematic downloading (by robots or other automatic processes) is prohibited without explicit Publisher approval, unless otherwise noted. For more information, contact [permissions@informs.org](mailto:permissions@informs.org).

The Publisher does not warrant or guarantee the article's accuracy, completeness, merchantability, fitness for a particular purpose, or non-infringement. Descriptions of, or references to, products or publications, or inclusion of an advertisement in this article, neither constitutes nor implies a guarantee, endorsement, or support of claims made of that product, publication, or service.

Copyright © 2020, INFORMS

Please scroll down for article—it is on subsequent pages



With 12,500 members from nearly 90 countries, INFORMS is the largest international association of operations research (O.R.) and analytics professionals and students. INFORMS provides unique networking and learning opportunities for individual professionals, and organizations of all types and sizes, to better understand and use O.R. and analytics tools and methods to transform strategic visions and achieve better outcomes.

For more information on INFORMS, its publications, membership, or meetings visit <http://www.informs.org>

# Lifting the Veil: The Benefits of Cost Transparency

Bhavya Mohan,<sup>a</sup> Ryan W. Buell,<sup>b</sup> Leslie K. John<sup>b</sup>

<sup>a</sup> University of San Francisco, San Francisco, California 94117; <sup>b</sup> Harvard Business School, Boston, Massachusetts 02163

Contact: [bmohan@usfca.edu](mailto:bmohan@usfca.edu),  <http://orcid.org/0000-0001-6533-6208> (BM); [rhuell@hbs.edu](mailto:rhuell@hbs.edu) (RWB); [ljohn@hbs.edu](mailto:ljohn@hbs.edu),

 <http://orcid.org/0000-0002-0928-6493> (LKJ)

Received: July 17, 2018

Revised: March 17, 2019

Accepted: July 30, 2019

Published Online in Articles in Advance:

April 22, 2020

<https://doi.org/10.1287/mksc.2019.1200>

Copyright: © 2020 INFORMS

**Abstract.** Firms do not typically disclose information on their costs to produce a good to consumers. However, we provide evidence of when and why doing so can increase consumers' purchase interest. Specifically, building on the psychology of disclosure and trust, we posit that cost transparency, insofar as it represents an act of sensitive disclosure, fosters trust. In turn, this heightened trust enhances consumers' willingness to purchase from that firm. In support of this account, we present six studies conducted in the field and in the laboratory. A preregistered field experiment indicated that diners were 21.1% more likely to buy a bowl of chicken noodle soup when a sign revealing its ingredients also included the cafeteria's costs to make it. Five subsequent online experiments replicated and extended this basic effect, providing evidence of when and why it occurs. Taken together, these studies imply that the proactive revelation of costs can improve a firm's bottom line.

**History:** This paper has been accepted for the *Marketing Science* Special Issue on Field Experiments.

**Supplemental Material:** Data and the e-companion are available at <https://doi.org/10.1287/mksc.2019.1200>.

**Keywords:** cost transparency • pricing • consumer behavior • field experiments

## Introduction

Cost transparency refers to the disclosure of the costs to produce a good or provide a service. Although cost transparency is a strategy traditionally employed in the context of supplier-firm relationships, wherein the two-way sharing of cost information between parties facilitates collaboration on cost-reduction measures (Lamming et al. 2002, Zhu 2004), we investigate its effects within the context of consumer-firm relationships. Information on the costs associated with providing goods and services is rarely shared with consumers, but we provide evidence of when and why voluntarily doing so can increase consumers' purchase interest. Specifically, building on the psychology of disclosure and trust, we posit that cost transparency, insofar as it represents an act of intimate disclosure, fosters trust. In turn, we propose that this heightened trust increases consumers' willingness to purchase from the transparent firm. In the sections that follow, we discuss our central predictions and highlight alternative accounts. Then, we present six experiments, conducted in the laboratory and in the field, that document the main effects of cost transparency, its underlying psychological drivers, and conditions that moderate its effects.

## Cost, Operational, and Price Transparency

Cost transparency broadly refers to a firm's disclosure of the costs that the firm incurs to provide a given product or service. In the present research, we

operationalize cost transparency as the practice of revealing the unit costs of production to consumers. An emerging trend, a handful of retail firms have begun to voluntarily institute cost transparency (Neilson and Mistry 2013, Schlossberg 2015). Our basic prediction, which we develop in this introduction and test in five of our six experiments, is as follows:

**Hypothesis 1.** *Cost transparency can increase purchase interest.*

Cost transparency is related to, but distinct from, two other forms of transparency that have been examined in prior work: operational transparency and price transparency. Next, we delineate what makes cost transparency distinct, setting up our hypotheses about the unique effects of cost transparency vis-à-vis these other forms of transparency.

Operational transparency refers to a firm's disclosure of its operating processes, not the costs associated with those processes (Buell et al. 2017). Specifically, operational transparency entails disclosure of the "behind-the-scenes" work that the firm undertakes through its operating processes (Buell and Norton 2011). Research has shown that consumers prefer services that are operationally transparent relative to those that are not (Buell and Norton 2011). For example, the travel site Kayak.com is beloved in part because of its operational transparency: the site discloses in real time which airlines it is searching. Operational transparency increases

consumers' perceptions of the effort required to create the product (or, in the case of Kayak, to generate the quote), in turn heightening their sense of gratitude and willingness to pay (Chinander and Schweitzer 2003, Morales 2005, Gershoff et al. 2012, Buell and Norton 2011).

Therefore, not only do these two forms of transparency—cost versus operational transparency—entail disclosure of different information (costs versus operational processes), we also posit them to operate by means of different underlying psychological processes (by enhancing perceptions and appreciation of effort in the case of operational transparency and, as delineated in the next section, by engendering trust in the case of cost transparency). Although the two are related in the sense that revealing the costs associated with producing a good sometimes necessitates revealing information about operational processes, we document that disclosing costs has a distinct and separable effect on customer purchase intentions. We posit that because costs are typically tightly guarded secrets, cost transparency is different from operational transparency in that it typically conveys more sensitive information to consumers than operational transparency alone. Indeed, research documenting the beneficial effects of operational transparency has been conducted in contexts where the hidden work being revealed (e.g., chefs cooking in a kitchen, workers filling potholes, dating websites matching on dimensions of common interest, etc.) is in no way proprietary (Buell 2019).

What does it mean for information to be “sensitive”? In line with previous research, we define information as sensitive if it is perceived as risky for the discloser to reveal, in the sense that it makes the discloser vulnerable to experiencing negative consequences (Derlega et al. 1993, Kelly and McKillop 1996, Laurenceau et al. 1998, Moon 2000). For example, disclosing information about one's emotions and feelings is typically considered sensitive because it makes the discloser vulnerable to negative consequences, such as embarrassment (Laurenceau et al. 1998). Analogously, a firm's disclosure of cost information reveals information about its profit margins, which could make the firm vulnerable to negative consequences, such as consumer ire or supplier price increases. By contrast, we posit that relative to cost information, information on operational processes is typically not perceived as particularly sensitive (although there may be cases in which operational processes are deemed sensitive; for example, when consumers are aware that the way a particular good is created is a trade secret). In sum, we predict cost transparency and operational transparency to differ in terms of the sensitivity of the

information they entail. Specifically, we hypothesize the following:

**Hypothesis 2A.** *Consumers deem it more sensitive for a firm to disclose its costs than for it to disclose its operational processes.*

Cost transparency is also distinct from price transparency. Whereas cost transparency entails disclosing the firm-side *costs* inherent in a price, price transparency entails disclosing and delineating the firm-side *proceeds* inherent in a price—for example, by dividing a price into gross retail proceeds, royalties, and taxes (Carter and Curry 2010). Similarly, price partitioning refers to the common technique of revealing the price of the component parts of a product—for example, by dividing a product's price into its base price and shipping and handling (Morwitz et al. 1998, Bertini and Wathieu 2008). Price transparency and price partitioning have both been found to increase purchase intentions, and to do so via a cognitive process (Morwitz et al. 1998). Specifically, by dividing a price into several subcomponents, each of which is necessarily smaller than the total price, small prices are made salient. The result is that these tactics cause consumers to perceive prices to be relatively low, in turn increasing purchase intentions. Again, cost transparency and price transparency entail disclosure of different information (costs versus proceeds inherent in a price), and with respect to increasing purchase intentions, we posit them to have different underlying mechanisms (enhanced trust for cost transparency and decreased price perceptions for price transparency, as delineated in the next section).

As with the distinction between cost transparency and operational transparency, here, too, we posit that the different mechanisms underlying the effect of price transparency and our predicted effect of cost transparency stem in part from differences in the perceived sensitivity of the disclosed information. Specifically, we theorize that cost information, by virtue of the fact that it is typically a tightly guarded secret, is perceived by consumers as more sensitive than price information, which is regularly disclosed in the context of customer-firm interactions.

**Hypothesis 2B.** *Consumers deem it more sensitive for a firm to disclose cost information than for it to disclose price information.*

Building on these hypothesized differences in the perceived sensitivity of disclosures about cost information, we next elucidate the theoretical underpinnings of our proposed process account of the effect of cost transparency on purchasing—namely, that disclosing sensitive information engenders trust and, in turn, purchase interest.

## Disclosure, Trust, and Liking

A substantial body of work in social psychology and allied fields suggests that disclosure of sensitive information is associated with heightened relationship quality (Laurenceau et al. 1998). Clever experimental studies have shown that this relationship can be causal: inducing people to make sensitive self-disclosures causes others to like them (Aron et al. 1997, Sedikides et al. 1999). To be sure, there is a point at which this relationship breaks down; disclosure and liking have a curvilinear relationship: those disclosing information that is moderate to highly sensitive are liked more than those who disclose information that is not very sensitive or that is extremely sensitive (Cozby 1972). Connecting this prior work to the present investigation, firms' disclosure of cost information may hit this "sweet spot" in terms of being sufficiently sensitive to foster liking but not so sensitive as to be perceived as "too much information."

What mechanism drives the capacity for self-disclosure to increase liking? Previous theorizing has invoked trust: self-disclosure has been argued to foster trust, which in turn is thought to be an ingredient that produces liking (Wheless and Grotz 1977, Collins and Miller 1994). Consistent with this account, self-disclosure is correlated with trust (Malhotra et al. 2004, Awad and Krishnan 2006). Experimental research goes further, providing causal evidence that abstaining from disclosure (for example, by opting out of answering survey questions) makes people seem untrustworthy, in turn reducing others' liking of them (John et al. 2016).

The present research is based on the notion that these relationship benefits of disclosure can manifest even when those disclosures are made by nonhuman entities; specifically, that they extend beyond person-to-person interactions to consumer-firm interactions. This premise stems from the theory of social response, which posits that, in responding to a stimulus that has human-like characteristics, people reflexively draw upon the same social behaviors as they would in a human-to-human interaction (Reeves and Nass 1996, Nass and Moon 2000). Consistent with this account, when a nonhuman entity engages in self-disclosure—a prototypically human activity—it can produce benefits similar to those of person-to-person self-disclosure. For example, people like computers that "disclose" information, such as a computer that outputs a system message that it "rarely gets to use its full potential" (Moon 2000). Thus, we posit that when a firm "self-discloses," it can enhance its relationships with its customers, just as when people self-disclose.

Research has further suggested that self-disclosures are especially likely to engender trust when the

disclosed information is sensitive in nature. For example, studies documenting that self-disclosure causes liking induce participants not simply to disclose, but to disclose *sensitive* information in particular (e.g., Aron et al. 1997, Sedikides et al. 1999). Similarly, it appears to be computers' disclosures of sensitive information that causes human users to like those computers (Moon 2000). Recent research goes further by directly comparing the effect of disclosing sensitive information versus nonsensitive information on trust: participants expressed greater trust for a business leader who revealed a personal weakness (e.g., "I'm quite shy. I am nervous about public speaking") relative to when that same leader revealed nonsensitive information (e.g., "I like to climb mountains in Colorado") (Jiang et al. 2019).

Because costs are generally viewed as confidential, we posit that costs represent the type of sensitive information that previous research has found to lend itself to fostering trust and liking in person-to-person disclosure. More comprehensively, therefore, we propose that akin to interpersonal disclosure, firm disclosure of cost information fosters consumers' trust, in turn increasing purchase interest. In this vein, one scenario study found that when a firm disclosed competitors' prices—even when those prices were relatively low—it instilled trust in consumers and increased stated purchase interest relative to non-disclosure (Trifts and Häubl 2003). Insofar as revealing competitors' prices constitutes sensitive disclosure, this finding fits with the present perspective.

It is important to acknowledge that brands and firms fall into a bit of a middle ground, in that they are neither machinelike computers nor people. However, we know that consumers form close ties with brands, and that norms of intrapersonal relationships inform these connections (Aggarwal 2004). Moreover, consumers regard brands as having multidimensional personalities, akin to human beings (Aaker 1997). Importantly, prior work suggests that perceptions of a brand's personality can directly influence perceived trustworthiness, which in turn builds a consumer's likelihood to purchase from a brand (Sung and Kim 2010). Accordingly, we predict the following:

**Hypothesis 3.** *Cost transparency increases purchase interest by enhancing consumers' trust in the firm.*

Consistently, we further posit that for disclosure to foster liking (via trust), it must be done voluntarily and proactively, as opposed to forcibly or reactively, by regulation or requirement. Indeed, although people are viewed as untrustworthy, and in turn disliked, when they opt out of answering questions, this effect is restricted to cases in which that abstention is volitional as opposed to incidental (as would be the case when, say, the abstention is the result of a computer



glitch (John et al. 2016)). Analogously, we propose that cost transparency needs to be voluntarily instated by the firm, as opposed to mandated, for it to enhance trust and, in turn, increase purchase interest. In this vein, firms that voluntarily disclose unsavory information—such as adverse side effects of their products—are seen as more trustworthy than when those disclosures come from a third party, such as the news media (Fennis and Stroebe 2014). Thus, we predict the following:

**Hypothesis 4.** *Cost transparency must be voluntarily instated in order for its benefit to be realized.*

This prediction also helps to distinguish our account from a possible alternative account rooted in the principle of dual entitlement (Kahneman et al. 1986): although consumers believe that firms are entitled to make a profit, they also believe that they are entitled to a reasonable price. Hence, when consumers perceive a firm to be making unreasonably large profits, they are less willing to buy from the “offending” firm because they deem its prices unfair (Bazerman 1985; Köszegi and Rabin 2006; Gneezy et al. 2014). However, because consumers do not routinely think about firms’ (often considerable) costs, they are prone to overestimating profits and, hence, to erroneously concluding the firm to be taking unreasonably large profits. Thus, in making consumers more aware of firms’ costs, cost transparency may correct consumers’ false beliefs that profits are unreasonably large, causing consumers to perceive prices as fairer, in turn spurring purchase interest. By contrast, we posit price fairness to operate not by disabusing false beliefs about profitability (as in a price fairness account) but rather via enhanced trust, which, unlike a price fairness account, requires the firm’s voluntary revelation of such costs. If there is something special about a firm’s voluntary disclosure of costs, above and beyond making prices seem fair, then additional variance in purchase interest should be explained via consumer trust in the firm.

Moreover, there is a situation in which these two accounts make different predictions regarding the effect of disclosing costs on purchase interest. Price fairness should foster purchase interest when consumers are prone to thinking firms are taking unreasonably high profits, such as when prices are surprisingly high. Because consumers do not typically think about firms’ costs, when they encounter an unexpectedly high price, they are likely to infer the high price is a reflection of high margins (as opposed to high costs). By this account, when consumers encounter surprisingly low prices, they are less prone to infer unreasonably high profits; as a result, in such cases, revealing reasonable margins (via cost transparency) should have little or no effect on purchase

interest. By contrast, if, as we posit, a firm’s voluntary revelation of its costs increases trust, then it should increase purchase interest both when prices are surprisingly high as well as when prices are surprisingly low. Thus, we hypothesize the following:

**Hypothesis 5.** *The beneficial effect of cost transparency on purchase interest will arise even when prices are surprisingly low (in contrast to a price fairness account).*

## Overview of Experiments

We test these hypotheses across a variety of instantiations of cost transparency and across a variety of brands and product categories, both in the laboratory and in the field. We begin with anecdotal field evidence consistent with the basic prediction that cost transparency increases sales. We then report six experiments. Study 1A is a field experiment showing that cost transparency can increase sales (Hypothesis 1). Study 1B replicates the effect in an incentive-compatible experiment, revealing the effects are not dependent on the specific cost structure from Study 1A (Hypothesis 1). Guided by our theoretical framework, Studies 2–5 shed light on when and why the beneficial effect of cost transparency emerges. Study 2 indicates that cost transparency is indeed perceived as a form of sensitive disclosure (Hypotheses 2A and 2B). Next, Study 3 shows that the effect of cost transparency on purchase interest is mediated by firm trustworthiness (Hypothesis 3). Study 4 demonstrates the critical role of the voluntary nature of the disclosure, showing that cost transparency boosts purchase interest only when instated voluntarily by the firm as opposed to involuntarily (e.g., as required by law) (Hypothesis 4). Finally, Study 5 shows that cost transparency increases purchase interest even when prices are unexpectedly low—a result not predicted by a price fairness account (Hypothesis 5). Study 5 also provides converging evidence for the trust mechanism underlying our effect, showing that it accounts for the effect of cost transparency on purchase interest even when controlling for perceived price fairness.

We report all manipulations and measures. For all studies, we did not analyze the data until after data collection had been completed. We set the desired number of participants at the outset of each experiment. No data were excluded unless explicitly indicated.

## Anecdotal Evidence

On December 2, 2013, a privately held online retailer launched a holiday gift shop with an email to its mailing list promoting a leather wallet offered in five colors (burgundy, black, grey, bone, and tan), priced at \$115.00. On January 28, 2014, in an effort to boost postholiday sales, the retailer decided to add an

infographic to the wallets' online product detail pages that included, among other information, the costs incurred to produce the wallet (the infographic is included in the online appendix). As the wallets differed only in color, the company intended to use the same infographic for every wallet in the line.

But what the company intended to do was not what actually happened. Serendipitously (for us at least), the company inadvertently failed to introduce the infographic for two of the wallet colors (bone and tan). Thus, the infographic was implemented for only three of the five wallet colors (burgundy, black, and grey), a mistake that was overlooked for five weeks, creating a natural experiment enabling us to test the impact of cost transparency on sales.

We used a difference-in-differences approach to compare the daily sales between the treatment and control groups before versus after the infographic was introduced. By doing so, we isolated the effect of the infographic on the daily count of wallets sold in each category. We analyzed the sales performance of five color combinations over a 92-day period ( $n = 460$ ), starting with the launch of the holiday gift shop on December 2, 2013 and ending on March 6, 2014. We did so by modeling the daily number of units sold per color combination as a function of the time period and treatment classification of the product group. When controlling for color popularity and stockouts, there was a marginally significant interaction between time and treatment: specifically, the postholiday sales decline was smaller in the treatment condition relative to the control (coefficient = 0.582;  $p = 0.06$ , two-tailed). The results are consistent with the idea that the infographic containing cost transparency buffered against the postholiday sales decline. Under the most conservative assumption of full substitution—that all of the incremental customers who bought wallets under infographic exposure would have otherwise bought a wallet in the control condition in the absence of such exposure—the best estimate provided by the fully specified version of this model is that the infographic, which included cost information, increased sales of the treated wallets by 22.0% (see the online appendix for a detailed write-up of this anecdotal evidence).

Though consistent with our prediction that cost transparency can increase sales, this anecdotal evidence is not definitive. For one, the novelty of the infographic may have directed consumers' attention to the wallets, and so perhaps it was merely increased salience that spurred sales. Moreover, the infographic, in addition to providing cost information, also featured other information—notably, favorable competitive benchmark information (competitors' markups were much higher than that of the target firm).

Therefore, as described next, Study 1A was a field experiment that provided a cleaner test of the effect

of cost transparency on sales. In addition, in the online appendix, we report an online experiment that is a conceptual replication of the anecdotal field study with a more precise manipulation of cost transparency. Specifically, in this online experiment, Amazon Mechanical Turk (MTurk) workers saw a screenshot of the online retailer's wallet product view and indicated their interest in buying the wallet. For half of the participants, the screenshot also contained the same cost transparency information as in the field study, but without the additional confounding information. We measured willingness to buy the wallet by asking, "Given the opportunity, how likely would you be to purchase this product?" (seven-point response scale: 1 = not at all likely, 7 = very likely). Consistent with the anecdotal field evidence, willingness to buy was greater in the cost transparency condition relative to the control condition ( $M_{\text{cost}} = 2.69$ , standard deviation (SD) = 1.81;  $M_{\text{control}} = 2.26$ , SD = 1.72;  $t(322) = 2.20$ ,  $p = 0.03$ ).

## Study 1A: Field Experiment

Study 1A was a preregistered field experiment in which we tested the effect of cost transparency on sales (Hypothesis 1).<sup>1</sup>

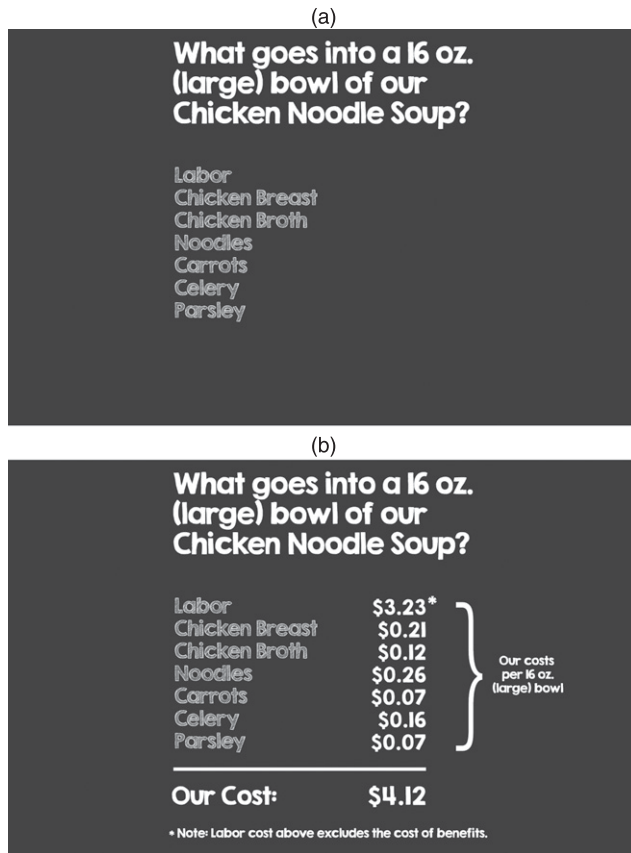
### Method

We partnered with the dining services organization of a large university in the northeastern United States, identifying the costs of producing a 16-ounce bowl of chicken noodle soup priced at \$4.95, an item that was available for lunchtime purchase in the dining hall on a daily basis. Cost components included chicken breast (\$0.21/bowl), chicken broth (\$0.12/bowl), noodles (\$0.26/bowl), carrots (\$0.07/bowl), celery (\$0.16/bowl), parsley (\$0.07/bowl), and labor (\$3.23/bowl).

Next to the chicken noodle soup, customers saw one of two different signs: control versus cost transparency. Both signs were titled, "What goes into a 16 oz. (large) bowl of our Chicken Noodle Soup?" and both listed the chicken noodle soup components described in the previous paragraph. However, the cost transparency (i.e., treatment) condition additionally included the cost of each component as well as the total cost (i.e., the sum of the individual cost components) of \$4.12 (Figure 1). As per the requirement of our field partner that the cost disclosures be truthful and comprehensive, we noted on the sign that the labor costs did not include the costs of benefits. For this and all studies, images of the stimuli appear in the [Appendix](#).

As described in the preregistration, we ran the field experiment over five consecutive weeks, from January 22 to February 27, 2018, dividing each weekday lunch period into two single-hour shifts from 11:30 a.m. to 12:30 p.m. and from 12:35 to 1:35 p.m. Therefore, excluding holidays, during which the

**Figure 1.** Study 1A Stimuli (i.e., the Signs That Were Placed Beside the Chicken Noodle Soup in the Control (a) vs. Treatment (b) Conditions)



Note. (a) Control sign; (b) cost transparency sign (treatment condition).

dining hall was closed, our period of analysis included the transactions from 50 hours of lunchtime sales ( $n = 9,227$ ). Every day, we showed both signs, one per shift, and alternated which was shown in each shift. We included a five-minute changeover period between shifts, corresponding to the approximate throughput time of lunchtime customers in the cafeteria. This design feature enabled us to provide a clean link between the experimental manipulation that was on display when diners were choosing their lunch and the sales that resulted from it.

### Empirical Approach

We used logistic regression to model the probability that a given customer included a bowl of chicken noodle soup in his or her purchase, as a function of the signage condition, the time of day, and the day of the week:

$$\Pr(CNS_{it}) = f(\delta_0 + \delta_1 TREATMENT_{it} + X_t + Z_t + \epsilon_{it}).$$

We conducted this estimation with robust standard errors, clustered by day. Because we had a directional prediction—that cost transparency would increase

the probability of chicken noodle soup purchases—we preregistered and conducted one-tailed tests.

### Results

As shown in Table 1, the cost transparency treatment was associated with an increase in the probability that a given customer purchased chicken noodle soup (coefficient = 0.198;  $p = 0.04$ , one-tailed). Relative to base rates, cost transparency was associated with a 21.1% increase in the probability of buying a bowl of chicken noodle soup, with the probability increasing from 2.3% to 2.8% per customer. These results provide converging evidence of the potential for cost transparency to increase sales. However, although these results are consistent with our theorizing, there is a potential confound in the experiment. Specifically, the revealed cost of labor is higher than all other revealed costs. Moreover, the labor cost line item is accompanied by an asterisk, and a footnote that labor benefits are excluded. These caveats, although required by the field experiment partner, potentially confound the experiment; it is possible, for instance, that drawing additional attention to the labor costs, which without benefits represent 78% of the total cost of the soup, heightens our effect. Thus, Study 1B tests the effects of cost transparency using an incentive-compatible online experiment in a setting with a more uniform cost structure.

### Study 1B: Incentive-Compatible Laboratory Experiment

This study tested whether cost transparency affects consumer behavior in a realistic, incentive-compatible context without drawing attention to

**Table 1.** Field Experiment (Study 1A): Probability of a Diner Purchasing Chicken Noodle Soup, Attributable to the Treatment Condition, Modelled by Logistic Regression

	Purchased chicken noodle soup
Transparency	0.198** (0.115)
Monday indicator	0.307 (0.312)
Tuesday indicator	0.355 (0.349)
Wednesday indicator	0.376 (0.362)
Thursday indicator	0.241 (0.347)
Constant	-4.423*** (1.038)
Observations	9,227
Adjusted $R^2$	0.036

Note. Model also includes time-fixed effects.

\* $p < 0.10$ ; \*\* $p < 0.05$ ; \*\*\* $p < 0.01$ , one-tailed. Robust standard errors, clustered by day, are shown in parentheses.



labor costs and benefits as in Study 1A. Relative to Study 1A, in Study 1B, we used a product with less variation in the magnitude of its different cost components (a backpack). Participants were shown the product view of two comparable backpacks, each sold by a different retailer (J.Crew versus Everlane). Whereas J.Crew has not instated cost transparency on its website, Everlane has. Between subjects, we varied whether we revealed this fact to participants: half of participants saw the cost transparency information that Everlane reveals alongside the backpack (for the other half of participants, this information was omitted, in which case participants did not encounter cost transparency). Then, participants indicated whether they wanted to enter a drawing for a \$50 gift card for J.Crew versus for Everlane. We predicted that the proportion of participants who chose the draw for the Everlane gift card would be increased when they encountered the firm's instated cost transparency.

## Method

**Design and Procedure.** Participants ( $n = 509$  MTurk workers,  $M_{\text{age}} = 37.6$ , 51% male) were randomized to one of two conditions varying in cost transparency: no transparency, which served as the control condition, versus cost transparency.

Regardless of condition, participants were told, "On the following pages, you will see screen shots from two different companies' websites. You will then be asked which company you would prefer to buy from." Participants subsequently saw a screenshot of two comparable backpacks, one available on each retailer's website. In the cost transparency condition, participants were given additional information about the cost-transparent retailer (Everlane). Under a "Cost Transparency" header, the screenshot stated, "See below for what it costs us to make the Modern Snap Backpack," above an infographic denoting the costs of making the backpack. The infographic revealed a materials cost of \$12.92, a hardware cost of \$5.13, a labor cost of \$10.66, a duties cost of \$1.81, and a transport cost of \$5.83, for a total cost of \$36.35.

On the next page, we told participants (truthfully) that we would be conducting a draw for a \$50 gift card. Participants indicated whether, if they won, they would like a \$50 gift card for J.Crew versus for Everlane. To be able to notify the winner, at the end of the survey, we asked participants to provide their email address (at this point, participants were told that they would need to provide their email address to be entered into the draw; the percentage of participants providing an email address was similar across conditions:  $M_{\text{CostTransparency}} = 59.3\%$ ,  $M_{\text{control}} = 52.7\%$ ;  $\chi^2 = 2.22$ ,  $p = 0.14$ , and the results hold when the data set is restricted to those who provided an email address).

**Dependent Measure.** The dependent variable was the proportion of participants who preferred the cost-transparent retailer's gift card.

In this study as well as Studies 4 and 5, after the dependent measure, we included a comprehension check assessing whether participants correctly identified the condition-specific information they had seen. For each of these studies, we report the results using the full sample (i.e., regardless of whether participants passed the comprehension check); however, all reported results hold when restricting the data set to those who passed the comprehension checks. This and all subsequent experiments included demographics (age, gender, education, income). The effects are substantively equivalent when these variables are taken into account.

## Results

**Choice.** Participants were more likely to prefer the Everlane gift card when they saw this company's instated cost transparency relative to when they did not ( $M_{\text{CostTransparency}} = 70.8\%$ ,  $M_{\text{control}} = 54.7\%$ ;  $\chi^2 = 14.04$ ,  $p < 0.01$ ). In sum, Study 1B provides converging evidence in support of Hypothesis 1: revealing cost transparency can affect consumers' choices.

## Study 2: Sensitivity Perceptions (Hypotheses 2A and 2B)

In Study 2, we tested whether cost transparency is perceived as a sensitive disclosure. Recall that our process account is predicated on the idea that it is sensitive disclosures in particular that foster trust and, in turn, liking (which we operationalize here as increased purchase interest). Therefore, in Study 2, we assessed whether consumers view firms' disclosure of costs as sensitive relative to other disclosures: operational transparency, price transparency, and competitor pricing.

We predicted that cost transparency would be viewed as more sensitive than both operational transparency and price transparency (Hypotheses 2A and 2B). We also predicted that disclosure of competitors' prices would be viewed as more sensitive than operational transparency and price transparency, though not as sensitive as cost transparency—a prediction stemming from research showing that disclosing competitors' prices increases trust (Trifts and Häubl 2003), consistent with our conceptual account.

## Method

Based on how previous research has defined the construct of disclosure sensitivity (Derlega et al. 1993, Kelly and McKillop 1996, Laurenceau et al. 1998, Moon 2000), participants ( $n = 196$  MTurk workers,  $M_{\text{age}} = 34.3$ , 55% male) were told, "In this survey, we are interested in your judgments of the sensitivity of



information that a company might divulge to consumers. By ‘sensitive,’ we mean information that is risky for the company to disclose, in the sense of making it vulnerable to negative consequences arising from that disclosure.”

Next, participants rated the sensitivity of five different types of firm disclosures. Specifically, participants were asked, “How vulnerable, if at all, would a company be making itself if it disclosed to consumers...?” Then, the following options were given: “the price of the products it sells?” (control); “the work it does to produce the products it sells?” (operational transparency); “the taxes included in the price of the products it sells?” (price transparency); “competitors’ prices—i.e., what competitors charge consumers for the same products?” (competitor pricing); “the cost of producing the products it sells?” (cost transparency) (five-point response scale: 1 = not at all vulnerable, 2 = somewhat vulnerable, 3 = vulnerable, 4 = very vulnerable, and 5 = extremely vulnerable). Administration order was counterbalanced between subjects.

## Results

A repeated-measures analysis of variance (ANOVA) revealed significant differences in perceived sensitivity as a function of disclosure type ( $F(4, 780) = 47.94$ ,  $p < 0.01$ ). Consistent with Hypotheses 2A and 2B, cost transparency ( $M_{\text{cost}} = 3.28$ ,  $SD = 1.11$ ) was perceived as more sensitive relative to every other type of disclosure; that is, relative to transparency about product prices ( $M_{\text{control}} = 2.11$ ,  $SD = 1.35$ ;  $t(195) = 10.76$ ,  $p < 0.01$ ); the taxes included in a product’s price ( $M_{\text{price\_transparency}} = 2.15$ ,  $SD = 1.23$ ;  $t(195) = 10.61$ ,  $p < 0.01$ ); operational transparency ( $M_{\text{operational\_transparency}} = 2.59$ ,  $SD = 1.17$ ;  $t(195) = 7.02$ ,  $p < 0.01$ ); and transparency about competitors’ prices ( $M_{\text{competitor\_prices}} = 2.84$ ,  $SD = 1.07$ ;  $t(195) = 4.56$ ,  $p < 0.01$ ). To the extent that the sensitivity of a disclosure affects the capacity to influence trust, these results lend credence to our account that a firm’s disclosure of costs increases purchase intentions by increasing trust—a proposition we tested directly in Study 3.

As for the other forms of transparency that we tested, revealing competitor prices was deemed the second-most sensitive form of disclosure; it was perceived as more sensitive relative to control ( $t(195) = 6.83$ ,  $p < 0.01$ ), price transparency ( $t(195) = 7.20$ ,  $p < 0.01$ ), and operational transparency ( $t(195) = 2.38$ ,  $p = 0.02$ ). Operational transparency was deemed the third-most sensitive form of disclosure; it was perceived as more sensitive relative to control ( $t(195) = 4.49$ ,  $p < 0.01$ ) and price transparency ( $t(195) = 4.85$ ,  $p < 0.01$ ). Finally, price transparency was the least sensitive form of disclosure; its perceived sensitivity was no different from control ( $t(195) = 0.43$ ,  $p = 0.67$ ).

## Study 3: The Mediating Role of Trust (Hypothesis 3)

The anecdotal evidence and the results of Studies 1A and 1B suggest that cost transparency can increase purchasing. Study 2 suggests that, consistent with our process account, consumers perceive costs as sensitive information relative to other types of information—namely, information on operational processes and pricing. In Study 3, we tested whether the effect of cost transparency on purchase intentions is mediated by consumer trust toward the firm (Hypothesis 3). In so doing, Study 3 also sought to replicate our basic effect that cost transparency can increase purchase interest (Hypothesis 1).

## Method

**Design and Procedure.** Participants ( $n = 612$  MTurk workers,  $M_{\text{age}} = 35.2$ , 55% male) were randomized to one of two conditions varying in cost transparency: no transparency, which served as the control condition, versus cost transparency. In the control condition, participants were shown a graphic depicting the front and back of a chocolate bar package. We worked with a chocolate manufacturer and retailer to develop a package for a fictitious brand called “Cocoa Passion” with realistic cost information. In the control condition, a description of the bar, flavors, ingredients, and nutrition facts were listed on the packaging. In the cost transparency condition, the packaging also provided the following unit cost information on the six cost components: \$0.29 (beans), \$0.03 (sugar), \$1.39 (cocoa butter), \$0.17 (packaging), \$0.90 (labor), and \$0.11 (utilities). The total cost of these components, \$2.89, was also featured.

**Dependent Measures.** We first measured trust by asking, “How trustworthy would you consider this brand?” (seven-point sliding response scale: 1 = not at all trustworthy, 7 = very trustworthy (John et al. 2016)). On the subsequent screen, we measured willingness to buy by asking, “Given the opportunity, how likely would you be to purchase the chocolate bar?” (seven-point response scale: 1 = not at all likely, 7 = very likely).

## Results

**Willingness to Buy.** Cost transparency increased willingness to buy relative to the control condition ( $M_{\text{cost}} = 4.27$ ,  $SD = 2.04$ ;  $M_{\text{control}} = 3.74$ ,  $SD = 2.00$ ;  $t(610) = 3.26$ ,  $p < 0.01$ ).

**Trust in Firm.** Trust was greater in the cost transparency condition relative to the control condition ( $M_{\text{cost}} = 5.27$ ,  $SD = 1.38$ ;  $M_{\text{control}} = 4.82$ ,  $SD = 1.38$ ;  $t(610) = 4.02$ ,  $p < 0.01$ ).

**Mediation Analysis.** Cost transparency predicted both trust ( $\beta = 0.45$ ,  $p < 0.01$ ) and willingness to buy ( $\beta = 0.53$ ,  $p < 0.01$ ). When trust and cost transparency were both included in the model predicting willingness to buy, trust remained significant ( $\beta = 0.80$ ,  $p < 0.01$ ), but cost transparency was reduced to non-significance ( $\beta = 0.17$ ,  $p = 0.21$ ), providing support for mediation. We used a bootstrap procedure to construct bias-corrected confidence intervals for the indirect effect based on 5,000 resamples (Preacher and Hayes 2008). The 95% bias-corrected confidence interval excluded zero (0.18, 0.54), suggesting a significant mediation effect.

In sum, consistent with our anecdotal evidence (and Studies 1A and 1B), Study 3 indicated that cost transparency increased purchase interest, and that, consistent with Hypothesis 3, this effect was mediated by consumers' trust in the firm.

#### Study 4: Voluntary Disclosure (Hypothesis 4)

Taken together, the studies so far provide evidence that cost transparency represents a form of sensitive disclosure that can increase purchase interest, and that it does so by increasing consumer perceptions of a firm's trustworthiness. Stemming from this account, Study 4 tested the prediction that disclosure needs to be voluntary for cost transparency to increase purchase interest (Hypothesis 4). We assessed participants' propensity to purchase a shirt as a function of whether and why the firm had disclosed its costs. Specifically, in the required condition, the firm disclosed its costs because regulation required it. In the voluntary disclosure condition, the firm voluntarily disclosed its costs. In the control condition, no cost information was provided. Relative to the control condition, we predicted cost transparency to increase purchase interest only when instated voluntarily, and not when instated involuntarily.

Study 4 also tested whether a benefit of (voluntary) cost transparency can be observed using a simpler operationalization of cost transparency. Specifically, in the preceding experiments, we operationalized cost transparency by providing the costs associated with each component of producing the good, as well as the total cost (i.e., the sum of the individual cost components). In Study 4, we tested whether merely disclosing the total costs to create the good—absent disclosure of the individual components and their associated costs—can be sufficient to increase purchase interest.

#### Method

**Design and Procedure.** Participants ( $n = 454$  MTurk workers,  $M_{\text{age}} = 37.1$ , 54% male) first indicated their gender and were then shown a simulated retail

product page for a \$15 T-shirt (worn by a model of their same gender).

Between subjects, we varied whether and why the retailer had disclosed its costs. In the involuntary transparency condition, an infographic indicated that the total cost of manufacturing the shirt was \$6.70. Additional text stated, "Due to regulations in the country in which this brand is based, this T-shirt company is forced to disclose its costs to customers. If regulation didn't require it, this company would choose to NOT disclose its costs to its customers." The voluntary transparency condition included the same cost-transparent infographic but provided a different rationale: "Due to the desire to be transparent to its customers, this T-shirt company voluntarily discloses its costs to its customers." The control condition had no cost transparency information.

**Dependent Measure.** We measured willingness to buy by asking, "Given the opportunity, how likely would you be to purchase this shirt from this T-shirt company?" (seven-point response scale: 1 = not at all likely, 7 = very likely).

#### Results

**Willingness to Buy.** A one-way ANOVA revealed significant differences in willingness to buy as a function of the transparency manipulation ( $F(2, 451) = 3.95$ ,  $p = 0.02$ ). Follow-up pairwise comparisons indicated that, as predicted, willingness to buy was significantly higher in the voluntary transparency condition relative to both the control condition ( $M_{\text{voluntary}} = 4.38$ ,  $SD = 1.75$ ;  $M_{\text{control}} = 3.92$ ,  $SD = 1.88$ ;  $t(298) = 2.22$ ,  $p = 0.03$ ) and the involuntary transparency condition ( $M_{\text{involuntary}} = 3.86$ ,  $SD = 1.77$ ;  $t(309) = 2.63$ ,  $p < 0.01$ ). Willingness to buy was equivalent in the control and involuntary transparency conditions ( $t(295) = 0.28$ ,  $p = 0.78$ ).

In sum, consistent with Hypothesis 4, Study 4 suggests that for cost transparency to increase purchase interest, it must be done voluntarily.

#### Study 5: Cost Transparency Versus Price Fairness (Hypothesis 5)

In Study 5, we tested the specificity of our trust-based account of cost transparency—namely, that it explains variance not accounted for by perceptions of price fairness. Specifically, we measured perceived price fairness (the mediator implied by a cost salience account) and trust in the firm (our hypothesized mediator). We predicted that the positive effect of cost transparency on purchase interest would be mediated by trust, and that this mediation would hold, controlling for perceived price fairness.

In addition, Study 5 exploited a circumstance in which these accounts make different predictions of the effect of cost transparency on purchase interest. When consumers encounter surprisingly low prices, they are unlikely to expect the firm to be making an unreasonably high profit. As a result, if the observed effects arise only by disabusing people of the belief that firms are ripping them off, then revealing reasonable margins should have little or no effect on purchase interest when prices are lower than expectations. By contrast, we predicted that a firm's voluntary revelation of its costs increases trust, and that this should subsequently increase purchase interest both when prices are surprisingly high as well as when prices are surprisingly low.

In Study 5, participants estimated the price of a travel package. Next, its actual price was revealed, which we manipulated to be either higher or lower than the participants' estimate. Participants were subsequently shown a screenshot from the tour operator's website, which included the content of the initial description. For half of participants, the screenshot also included transparency into the tour operator's costs of providing each part of the described experience. Hence, the study had a 2(price: *higher than estimate* versus *lower than estimate*)  $\times$  2(cost transparency: *transparency* versus *no transparency*) between-subjects design.

### Pilot Study

To establish tour package prices that were higher and lower than expectations, we conducted a pretest ( $n = 626$  MTurk workers,  $M_{\text{age}} = 37.8$ , 52% male) in which participants read the description of a travel package for a guided six-night trip to Washington, DC consisting of admissions and guided tours for a list of popular sites and attractions; six nights of accommodations; select breakfasts, lunches, and dinners; bottled water on excursions; welcome and farewell receptions; and gratuities. Participants estimated the total price of the tour. The average estimate was \$1,306.25 ( $SD = \$1,438.05$ ), with a 25th percentile estimate of \$750.00 and a 75th percentile estimate of \$1,600.00.

### Method

**Design and Procedure.** We created a simulated online tour website called "D.C. Tours," which featured a description of the six-night travel package described in the previous section. Based on the distribution of participant price estimates in the pretest, the D.C. Tours website priced the tour at either \$750.00 or \$1,600.00 and provided either a description of the tour package or a description of the tour package with cost transparency.

The tour package was described, and a new set of participants ( $n = 1,202$  MTurk workers,  $M_{\text{age}} = 36.0$ , 47% male) estimated its price ( $M = \$1,349.73$ ,  $SD = \$1,044.33$ ). Those whose estimates were between \$750.00 and \$1,600.00 ( $n = 516$ ,  $M_{\text{age}} = 37.5$ , 45% male) were randomly assigned to one of four experimental conditions. All but three of these participants went on to complete the study. Those whose estimates were not within this range ( $n = 686$ ,  $M_{\text{age}} = 34.9$ , 49% male) were excluded from further participation; they were directed to a demographics page.

**Price Manipulation.** Participants retained in the study were reminded of their estimate and, based on random assignment, were told that the actual price of the travel package was either \$750.00 (lower than their estimate) or \$1,600.00 (higher than their estimate).

**Cost Transparency Manipulation.** Participants were shown a screenshot from the D.C. Tours website. Those randomly assigned to the control condition were told, "On its website, shown below, the tour operator lists each component of the tour. That is, prospective clients can see each component of the tour." The screenshot featured a photo of the U.S. Capitol building and reiterated the price, as assigned previously, and the features included in the travel package.

The other half of participants, randomly assigned to the cost transparency condition, were told, "On its website, shown below, the tour operator voluntarily posts their costs of providing each component of the tour. That is, prospective clients can see how much each component costs the tour operator. Below, you can see how much it costs the tour operator to provide each component, in red beside each component." Participants in this condition saw a website that was identical to that in the control condition except for the addition of costs for each component and the total cost. Costs were scaled identically as a percentage of tour price in both price conditions, such that total costs were equal to 80% of the quoted price, and the company in both cases earned a gross profit margin of 20%.

**Dependent Measures.** On the following screens, participants were asked, "How likely would you be to buy this tour?" (willingness to buy: 1 = not at all likely, 7 = very likely); "How trustworthy is this tour operator?" (trust: 1 = not at all trustworthy, 7 = very trustworthy); and "How fair is the price of the tour?" (price fairness: 1 = not at all fair, 7 = very fair (Bolton et al. 2003)). Administration order was counterbalanced between subjects.



## Results

**Willingness to Buy.** A 2(price: *higher than estimated* versus *lower than estimated*)  $\times$  2(cost transparency: *transparency* versus *no transparency*) ANOVA on willingness to buy revealed, not surprisingly, a main effect of price: willingness to buy was higher when prices were lower than expected relative to when they were higher than expected ( $F(1, 509) = 74.76, p < 0.01$ ). More importantly, there was a main effect of cost transparency ( $F(1, 509) = 11.67, p < 0.01$ ): willingness to buy was higher in the presence of cost transparency. The interaction was not significant ( $F(1, 509) = 0.33, p = 0.57$ ), indicating that cost transparency increased willingness to buy both when prices were higher than participant estimates ( $M_{\text{cost}} = 3.72, SD = 2.00$ ;  $M_{\text{control}} = 3.06, SD = 1.80$ ;  $t(253) = 2.79, p < 0.01$ ) and when they were lower than participant estimates ( $M_{\text{cost}} = 5.06, SD = 1.83$ ;  $M_{\text{control}} = 4.59, SD = 1.90$ ;  $t(256) = 2.03, p = 0.04$ ) (Figure 2). This latter result—that cost transparency increased willingness to buy even when prices were surprisingly low—is noteworthy because it is inconsistent with a price fairness account, whereas it is consistent with our trust-based account of cost transparency.

**Trust.** A 2(price: *higher than estimated* versus *lower than estimated*)  $\times$  2(cost transparency: *transparency* versus *no transparency*) ANOVA on trust revealed a main effect of price: trust was higher when prices were lower than expected relative to when they were higher than expected ( $F(1, 509) = 11.08, p < 0.01$ ). More importantly, there was a main effect of cost transparency ( $F(1, 509) = 13.76, p < 0.01$ ), such that trust

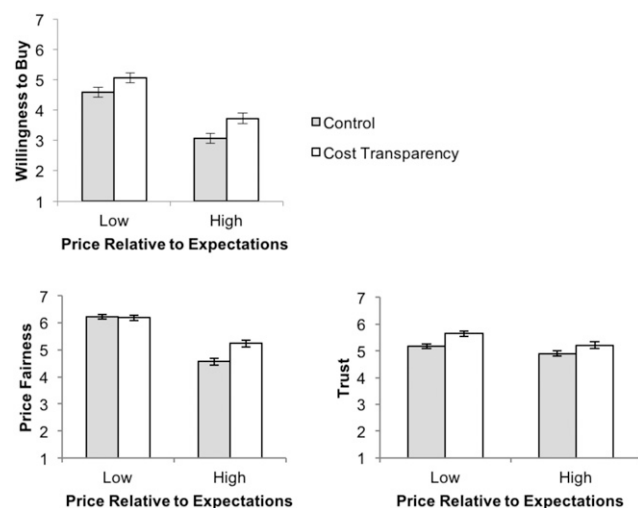
was higher in the presence of cost transparency. The interaction was not significant ( $F(1, 509) = 0.57, p = 0.45$ ), indicating that cost transparency increased trust both when prices were low ( $M_{\text{cost}} = 5.64, SD = 1.13$ ;  $M_{\text{control}} = 5.17, SD = 1.08$ ;  $t(256) = 3.44, p < 0.01$ ) as well as when prices were high ( $M_{\text{cost}} = 5.21, SD = 1.35$ ;  $M_{\text{control}} = 4.90, SD = 1.23$ ;  $t(253) = 1.94, p = 0.05$ ).

**Price Fairness.** A 2(price: *higher than estimated* versus *lower than estimated*)  $\times$  2(cost transparency: *transparency* versus *no transparency*) ANOVA on price fairness revealed a main effect of price: prices were perceived as fairer when they were lower than expected relative to when they were higher than expected ( $F(1, 509) = 137.33, p < 0.01$ ). There was also a main effect of cost transparency ( $F(1, 509) = 8.27, p < 0.01$ ). Importantly, the interaction was significant ( $F(1, 509) = 9.94, p < 0.01$ ). Cost transparency did not increase price fairness relative to the control condition when prices were lower than expected ( $M_{\text{cost}} = 6.19, SD = 1.13$ ;  $M_{\text{control}} = 6.22, SD = 0.97$ ;  $t(256) = 0.24, p = 0.81$ ). Cost transparency only increased price fairness when prices were higher than expected ( $M_{\text{cost}} = 5.23, SD = 1.44$ ;  $M_{\text{control}} = 4.56, SD = 1.47$ ;  $t(253) = 3.70, p < 0.01$ ). In other words, consistent with the dual entitlement account, the positive effect of cost transparency on price fairness was contingent on price.

**Mediation Analysis.** Cost transparency predicted trust in the firm ( $\beta = 0.39, p < 0.01$ ), price fairness perceptions ( $\beta = 0.32, p = 0.01$ ), and willingness to buy ( $\beta = 0.57, p < 0.01$ ). First, we tested whether trust mediated the effect of cost transparency on willingness to buy even when controlling for price fairness perceptions. We used a bootstrap procedure to construct bias-corrected confidence intervals for the indirect effect based on 5,000 resamples, with transparency as the independent variable, trust as the mediator, price fairness as a covariate, and willingness to buy as the dependent variable (Preacher and Hayes 2008). The 95% bias-corrected confidence interval excluded zero (0.03, 0.19). Thus, trust explains variance in the relationship between cost transparency and increased purchase interest beyond that accounted for by price fairness alone, consistent with Hypothesis 5.

**Moderated Mediation Analysis.** As an additional test of our conceptual model, we also conducted a moderated mediation analysis, with cost transparency as the independent variable, price level as the moderator, trust and price fairness as the two mediators, and willingness to buy as the dependent variable. Consistent with our account, our price moderated the effect of cost transparency on trust and price fairness. A 5,000-sample bootstrap analysis revealed that the

**Figure 2.** The Positive Effect of Cost Transparency on Purchase Interest Held Across Prices, as Did the Positive Effect on Trust



Note. The positive effect on price fairness perceptions manifested only when price was higher than expectations (Study 5).



95% bias-corrected confidence interval of the indirect effect via trust excluded the zero both for participants who saw the low price (0.07, 0.32) and for those who saw the high price (0.004, 0.27). The test of the equality of both indirect effects was not significant, as the 95% bias-corrected confidence interval included zero (−0.24, 0.09), indicating that the indirect effect was not attenuated by the price level manipulation. For price fairness, the indirect effect excluded the zero only for participants who saw the high price point (0.21, 0.72), but not for those who saw the low price point (−0.19, 0.15). The test of the equality was significant, as the 95% bias-corrected confidence interval excluded zero (0.18, 0.77), indicating that the indirect effect via price fairness was attenuated by price level.

In sum, Study 5 shows that price fairness is partly responsible for the effect of cost transparency on purchase interest, specifically when prices are higher than expected. Importantly, however, it does not fully explain the effect of cost transparency on purchase interest. Consistent with our theoretical account and with Hypothesis 5, additional variance is explained by perceived firm trustworthiness, and the benefit of cost transparency persists when prices are surprisingly low.

## General Discussion

We began with anecdotal field evidence consistent with the basic prediction that cost transparency increases sales (Hypothesis 1). We then reported six controlled experiments. Study 1A was a preregistered field experiment showing that cost transparency can increase sales, and Study 1B was an incentive-compatible experiment that provided converging evidence (Hypothesis 1). Four subsequent experiments (Studies 2–5) shed light on when and why the beneficial effect of cost transparency emerges. First, we showed that cost transparency is indeed perceived as a form of sensitive disclosure (Hypotheses 2A and 2B). Study 3 went further, showing that the capacity for cost transparency to increase purchasing is mediated by perceived firm trustworthiness (Hypothesis 3). Next, Study 4 showed that for cost transparency to boost purchase interest, it needs to be instated voluntarily (Hypothesis 4). Finally, Study 5 showed that cost transparency increases purchase interest even when prices are unexpectedly low (Hypothesis 5)—a result not predicted by a price fairness account. Study 5 also provided converging evidence for the trust mechanism underlying our effect, showing that it accounts for the effect of cost transparency on purchase interest even when controlling for perceived price fairness.

Attesting to its robustness, the beneficial effect of cost transparency on purchase interest emerged

under different instantiations of cost transparency—for example, when only total costs were revealed (Study 4), as well as when they were further broken down into their constituent cost components. We also demonstrated the effect relative to different baselines—for example, relative to no transparency (Studies 3 and 4) and relative to the disclosure of inputs, as in our field experiment. Further, we demonstrated the effect across a variety of different brands and product and service categories, including wallets, chicken noodle soup, chocolate, travel packages, and T-shirts. Finally, the beneficial effect of cost transparency emerged for both modest gross profit margins (17% in Study 1A) as well as larger ones (55% in Study 4).

## Opportunities for Future Research

It is noteworthy that cost transparency engendered trust despite the fact that participants could not verify whether the costs were accurate. In this vein, future research might explore when cost transparency engenders suspicion as opposed to trust, and more broadly, when it might undermine, as opposed to enhance, sales. For example, prior literature suggests that trustworthiness is related to the credibility of the source, particularly in the context of online retailers communicating with consumers (Trifts and Häubl 2003). It could also be that when costs are implausibly low, suspicion overrides any trust-associated benefit of disclosure, quashing or potentially reversing the positive effects of cost transparency. On the flip side, it could be that extremely high margins override the trust benefit of disclosure; indeed, perceived benevolence is a component of trust (Rotter 1967; Rousseau et al. 1998), and hence, if firms are taking extremely high margins, this could undermine the capacity for cost disclosures to enhance trust. Whereas we show the positive effect of cost transparency at margins as low as 17% and as high as 55%, future research could examine whether the effect would hold at extremely low and extremely high margins.

It could also be that the effects of cost transparency are moderated by a consumer's prior relationship with a brand. For instance, when consumers view firms transactionally as opposed to relationally, cost transparency may be met with suspicion toward the numbers as opposed to trust toward the disclosure. Building on past research examining how consumer-brand relationship contracts are formed (Aaker et al. 2004; Smit et al. 2007), the benefits of cost transparency may be particularly likely to emerge for newer brands (when the consumer has not yet formed an impression of the brand), thereby making consumers' subsequent interactions with that brand more malleable to the influence of cost transparency.

Indeed, in all of our studies, the firm implementing cost transparency was novel or relatively unknown.

Central to our account is the notion that cost transparency is a form of sensitive disclosure. Therefore, future research might investigate factors that modulate whether cost transparency is perceived as a sensitive disclosure and, in turn, its effectiveness. For example, different types of costs may be perceived as differentially sensitive and, in turn, may have different effects on purchasing. As another possibility, stemming from the comparative nature of human judgment (Fox and Tversky 1995, Hsee 1996, Ariely et al. 2003), perceived sensitivity may be affected by whether other firms disclose—or do not disclose; or similarly, whether a given firm implements cost transparency on some versus all of its products. Indeed, prior research suggests that a given disclosure is perceived as more revelatory if others abstain from making the same disclosure (Acquisti et al. 2012).

More broadly, future research could investigate how firms' disclosure of other types of sensitive information affects trust and performance. Similar to costs and profits, there are many categories of information that are privately held by companies and are traditionally considered taboo when communicating with customers. For example, disclosing confidential information regarding internal algorithms may fly in the face of conventional wisdom and practice. One might even envision situations in which price and operational transparency may be seen as particularly sensitive, such as when they are the basis of competitive advantage, or when a unique production process is being disclosed.

Finally, future research might also explore additional, complementary mechanisms of the beneficial effect of cost transparency on purchasing. For example, in addition to trust, the literature hints that firm disclosures can increase purchase interest via increased perceptions of firm competence (Trifts and Häubl 2003). Such an explanation is consistent with research on environmental disclosures: when companies voluntarily reveal their emissions, customers

perceive that the company must be performing well relative to industry competitors. As a result, the firm's market share increases, regardless of the firm's actual relative performance (Kalkanci et al. 2016).

### Limitations

From a practical standpoint, there are several caveats a firm would need to consider before deciding to reveal its costs. For one, firms may not want to disclose costs if cost structure is a competitive advantage. Moreover, a firm's suppliers may not allow the firm to make public the costs associated with certain components. Thus, there could be strategic risks or contractual barriers to disclosure.

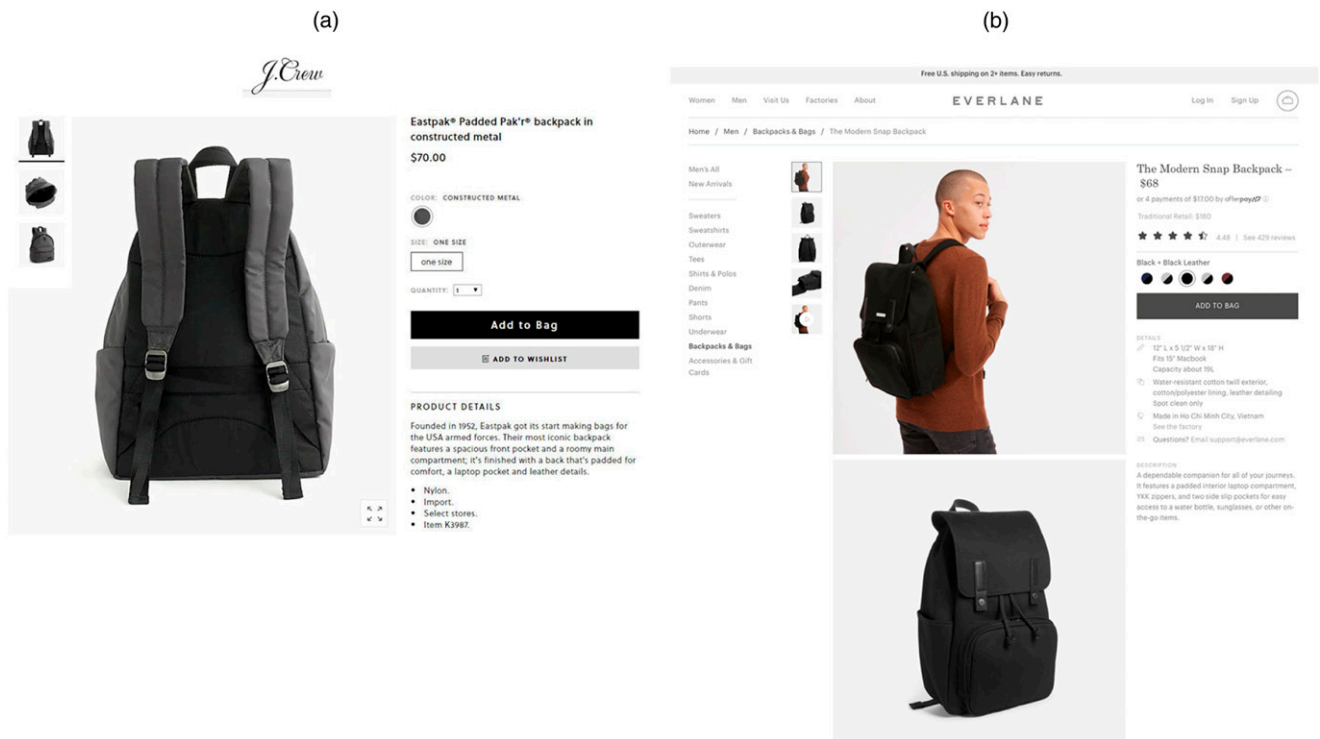
Even if firms have the desire to disclose costs, it may be infeasible for them to do so. The present research focuses on a set of contexts where unit costs can be readily calculated and explained. However, disclosing the unit costs associated with the production of a single good might be infeasible for companies that are not vertically integrated. And, for goods and services that are dependent on high fixed costs (e.g., research and development, overhead, constant labor costs), imputing unit costs may be complicated or confusing to consumers. For example, imputing research and development costs on a per-unit basis in a pharmaceutical context may require many assumptions and, potentially, customer education on how the sales of successful pharmaceuticals subsidize the production costs of less popular products and the costs of early-stage trials (and failures).

### Conclusion

In closing, we note that although firms typically treat their costs as tightly guarded secrets, the present research points to a potential upside of revealing them. Just as when people reveal sensitive information, when firms do so, it can engender trust and deepen the relationships among companies and consumers. We welcome further research into these dynamics, which may open the door to improved outcomes for consumers and firms alike.

## Appendix

**Figure A.1.** (Color online) Screenshots from the J.Crew and Everlane Websites (Study 1B)



*Notes.* Participants were shown both screenshots and asked whether they would prefer to enter a lottery for a \$50 gift card to J.Crew or Everlane. Some participants were additionally randomly assigned to view the cost transparency infographic associated with Everlane, as shown in Appendix Figure A.2.


**Figure A.2.** Cost Transparency Infographic (Study 1B)





(a) (b) (c)










## The Men's V

\$15

COLOR: NAVY BLUE

SELECT SIZE (WHAT SIZE AM I?)

XS

S

M

L

XL

CHOOSE QUANTITY





-

1

+

ADD TO BAG

[Pin it](#)

### What goes into the production of The Men's V?

TOTAL COST OF MANUFACTURING

**\$6.55**

*Note.* In the control condition, the graphic simply omitted the cost transparency information in the bottom-right corner.



**Figure A.5.** (Color online) Stimuli Used in Study 5

*Note.* (a) \$750 (lower than estimated) price, no cost transparency; (b) \$750 (lower than estimated) price, with cost transparency; (c) \$1,600 (higher than estimated) price, no cost transparency; (d) \$1,600 (higher than estimated) price, with cost transparency.

## Endnote

<sup>1</sup>Preregistration available at [https://aspredicted.org/see\\_one.php?a\\_id=7937](https://aspredicted.org/see_one.php?a_id=7937).

## References

- Aaker JL (1997) Dimensions of brand personality. *J. Marketing Res.* 34(3):347–356.
- Aaker JL, Fournier S, Brasel SA (2004) When good brands do bad. *J. Consumer Res.* 31(1):1–16.
- Acquisti A, John LK, Loewenstein G (2012) The impact of relative standards on the propensity to disclose. *J. Marketing Res.* 49(2): 160–174.
- Aggarwal P (2004) The effects of brand relationship norms on consumer attitudes and behavior. *J. Consumer Res.* 31(1):87–101.
- Ariely D, Loewenstein G, Prelec D (2003) Coherent arbitrariness: Stable demand curves without stable preferences. *Quart. J. Econom.* 118(1):73–105.
- Aron A, Melinat E, Aron EN, Vallone RD, Bator RJ (1997) The experimental generation of interpersonal closeness. *Personality Soc. Psych. Bull.* 23(4):363–377.
- Awad NF, Krishnan MS (2006) The personalization privacy paradox: An empirical evaluation of information transparency and the willingness to be profiled online for personalization. *MIS Quart.* 30(1):13–28.
- Bazerman MH (1985) Norms of distributive justice in interest arbitration. *ILR Rev.* 38(4):558–570.
- Bertini M, Wathieu L (2008) Research note—Attention arousal through price partitioning. *Marketing Sci.* 27(2):147–321.
- Bolton LE, Warlop L, Alba JW (2003) Consumer perceptions of price (un)fairness. *J. Consumer Res.* 29(4):474–491.
- Buell R (2019) Operational transparency: Make your processes visible to customers and your customers visible to employees. *Harvard Bus. Rev.* 97(4):102–113.
- Buell R, Norton MI (2011) The labor illusion: How operational transparency increases perceived value. *Management Sci.* 57(9): 1564–1579.
- Buell R, Tsay C, Kim T (2017) Creating reciprocal value through operational transparency. *Management Sci.* 63(6):1673–1695.
- Carter RE, Curry DJ (2010) Transparent pricing: Theory, tests, and implications for marketing practice. *J. Acad. Marketing Sci.* 38(6): 759–774.
- Chinander KR, Schweitzer ME (2003) The input bias: The misuse of input information in judgments of outcomes. *Organ. Behav. Human Decision Processes* 91(2):243–253.
- Collins NL, Miller LC (1994) Self-disclosure and liking: A meta-analytic review. *Psych. Bull.* 116(3):457–475.
- Cozby PC (1972) Self-disclosure, reciprocity and liking. *Sociometry* 35(1):151–160.
- Derlega VJ, Metts S, Petronio S, Margulis ST (1993) *Self-Disclosure* (Sage Publications, Thousand Oaks, CA).
- Fennis BM, Stroebe W (2014) Softening the blow: Company self-disclosure of negative information lessens damaging effects on

- consumer judgment and decision making. *J. Bus. Ethics* 120(1): 109–120.
- Fox CR, Tversky AT (1995) Ambiguity aversion and comparative ignorance. *Quart. J. Econom.* 110(3):585–603.
- Gershoff AD, Kivetz R, Keinan A (2012) Consumer response to versioning: How brands' production methods affect perceptions of unfairness. *J. Consumer Res.* 39(2):382–398.
- Gneezy U, Keenan EA, Gneezy A (2014) Avoiding overhead aversion in charity. *Science* 346(6209):632–635.
- Hsee CK (1996) The evaluability hypothesis: An explanation for preference reversals between joint and separate evaluations of alternatives. *Organ. Behav. Human Decision Processes* 67(3):247–257.
- Jiang L, Kouchaki M, Gino F, Boghrati R, John LK (2019) Leaders can come across as authentic by disclosing their foibles. Working paper, Harvard Business School, Boston.
- John LK, Barasz K, Norton MI (2016) Hiding personal information reveals the worst. *Proc. Natl. Acad. Sci. USA* 6(8):1–6.
- Kahneman D, Knetsch JL, Thaler R (1986) Fairness as a constraint on profit seeking: Entitlements in the market. *Amer. Econom. Rev.* 76(4):728–741.
- Kalkanci B, Ang E, Plambeck EL (2016) Strategic disclosure of social and environmental impacts in a supply chain. Atasu A, ed. *Environmentally Responsible Supply Chains* (Springer, Basel, Switzerland), 223–239.
- Kelly AE, McKillop KJ (1996) Consequences of revealing personal secrets. *Psych. Bull.* 120(3):450–465.
- Kőszegi B, Rabin M (2006) A model of reference-dependent preferences. *Quart. J. Econom.* 121(4):1133–1165.
- Lamming RC, Caldwell ND, Harrison DA, Phillips W (2002) Transparency in supply relationships: Concept and practice. *IEEE Engrg. Management Rev.* 30(3):70–76.
- Laurenceau J, Barrett LF, Pietromonaco PR (1998) Intimacy as an interpersonal process: The importance of self-disclosure, partner disclosure, and perceived partner responsiveness in interpersonal exchanges. *J. Personality Soc. Psych.* 74(5):1238–1251.
- Malhotra NK, Kim SS, Agarwal J (2004) Internet users' information privacy concerns (IUIPC): The construct, the scale, and a causal model. *Inform. Systems Res.* 15(4):336–355.
- Moon Y (2000) Intimate exchanges: Using computers to elicit self-disclosure from consumers. *J. Consumer Res.* 26(4):323–339.
- Morales AC (2005) Giving firms an 'E' for effort: Consumer responses to high-effort firms. *J. Consumer Res.* 31(4):806–812.
- Morwitz VG, Greenleaf EA, Johnson EJ (1998) Divide to and prosper: Consumers' reactions to partitioned prices. *J. Marketing Res.* 35(4):453–463.
- Nass C, Moon Y (2000) Machines and mindlessness: Social responses to computers. *J. Soc. Issues* 56(1):81–103.
- Neilson L, Mistry M (2013) Feel-good fashion: The new black. *Wall Street Journal* (August 16), <http://www.wsj.com/articles/SB10001424127887323977304579001150660068542>.
- Preacher KJ, Hayes AF (2008) Asymptotic and resampling strategies for assessing and comparing indirect effects in multiple mediator models. *Behav. Res. Methods* 40(3):879–891.
- Reeves B, Nass CR (1996) *The Media Equation: How People Treat Computers, Television, and New Media Like Real People and Places* (Cambridge University Press, Cambridge, UK).
- Rotter JB (1967) A new scale for the measurement of interpersonal trust. *J. Personality* 35(4):651–665.
- Rousseau DM, Sitkin SB, Burt RS, Camerer C (1998) Not so different after all: A cross-discipline view of trust. *Acad. Management Rev.* 23(3):393–404.
- Schlossberg M (2015) An emerging trend in retail should scare everyone from Michael Kors to Macy's. *Business Insider* (October 13), <https://www.businessinsider.com/cost-transparency-is-the-new-trend-2015-10>.
- Sedikides C, Campbell K, Reeder GD, Elliot AJ (1999) The relationship closeness induction task. *Representative Res. Soc. Psych.* 23: 1–4.
- Smit E, Bronner F, Tolboom M (2007) Brand relationship quality and its value for personal contact. *J. Bus. Res.* 60(6):627–633.
- Sung Y, Kim J (2010) Effects of brand personality on brand trust and brand affect. *Psych. Marketing* 27(7):639–661.
- Trifts V, Häubl G (2003) Information availability and consumer preference: Can online retailers benefit from providing access to competitor price information? *J. Constructivist Psych.* 13(1):149–159.
- Wheless LR, Grotz J (1977) The measurement of trust and its relationship to self-disclosure. *Human Comm. Res.* 3(3):250–257.
- Zhu K (2004) Information transparency of business-to-business electronic markets: A game-theoretic analysis. *Management Sci.* 50(5):670–685.