CONSUMER CONSEQUENCES OF WORKER SALARY INFORMATION

Ignazio Ziano (Ignazio.ziano@grenoble-em.com), Assistant Professor, Department of Marketing, Grenoble Ecole de Management, 12 Rue Pierre Semard, F-38000 Grenoble

Birga M. Schumpe (b.m.schumpe@uva.nl), Assistant Professor, Department of Social Psychology, University of Amsterdam, 1012 WX Amsterdam, Netherlands

Author note

Ignazio Ziano is Assistant Professor at the Department of Marketing, Grenoble Ecole de Management. His research focuses on social consumer behavior and consumer judgment and decision-making.

Birga M. Schumpe is Assistant Professor at the Faculty of Social and Behavioural Sciences, University of Amsterdam, Netherlands. Her research focuses on attitude and behavior change, especially in the realm of consumer psychology.

Acknowledgments

The first author acknowledges funding from the Research Chaire « Public Trust in Health » at Grenoble Ecole de Management.

The authors are grateful to seminar participants at Tilburg University for their helpful comments.

CONSUMER CONSEQUENCES OF WORKER SALARY INFORMATION

ABSTRACT

Quality and price expectations are a central issue for marketers and consumer psychologists alike. Seven experiments ($N = 3626$, with U.S. American, British, and French participants) show that consumers expect and perceive products to be of higher quality and price when made by well-paid workers, compared to both low-wage workers and to companies of which consumers do not know the worker salaries. Knowing that products are made by well-paid workers increases consumers' choice likelihood and willingness-to-pay for these products. This effect is driven by the consumers' beliefs that well-paid workers are more satisfied, and that companies are investing more, resulting in higher-quality products. When consumers are informed of the products' price, the effect of wages on quality persists. The effect is reduced for quality (but not price) if companies are caught lying about either salaries or investments, and its effect on price (but not quality) is reduced when auxiliary workers are paid a low wage. The present work contributes to the understanding of determinants of price and quality expectations, and to the consumer lay theory of the firm. We make several practical suggestions for marketing managers, workers' unions, and policymakers on how to use, communicate, and regulate worker salary information.

Keywords: salary, quality, beliefs, effort, signaling, satisfaction, worker

Understanding how consumers evaluate product quality is a central problem in consumer research. Consumers interpret several product features as signals of quality, such as price and brand name (Rao and Monroe 1989). Consumers may also interpret firms' actions as signs of quality, such as the amount of money spent on advertising or the length of the warranty accompanying a product (Boulding and Kirmani 1993; Kirmani and Wright 1989). Psychologists have also studied lay theories of value and quality. For instance, using the "effort heuristic" (Kruger et al. 2004), people believe products to be of higher quality when they take more effort to produce.

The present work investigates the influence of information about workers' salary to explain price and quality perceptions of the work they produce. In the present research, we demonstrate that consumers believe that well-paid workers are more satisfied, and exert more effort into their work, which consumers interpret as a signal of expected quality, but they also expect higher prices. However, this is not the only driver of this effect: Consumers also expect higher-paying companies to invest more in technology and safety, adding to the effect. This happens when comparing highly-paid workers to both low-paid workers and to workers of which consumers do not know the salary, as consumers seem spontaneously pessimistic about wage levels and product quality. When keeping price constant, the effect on quality expectations still obtains. The effect is reduced for quality (but not price) when companies are caught lying about either salaries or investments, and its effect on price (but not quality) is reduced when consumers learn that auxiliary workers are paid a low wage.

The present research connects and contributes to several streams of research. First, we contribute to the large literature on quality and price judgments and expectations (Baskin and Liu 2021; Creyer and Ross 1996; Kirmani and Rao 2000; Kirmani and Wright 1989). Information about workers' salary is important and often public (e.g., through websites such

as GlassDoor and Indeed), but their influence on consumers' expectations and perceptions of product quality has not been studied. Specifically, the present work extends research about quality and price signals that companies send to consumers in information asymmetry conditions, and how consumers interpret them (Kirmani and Rao 2000), by adding workers' salaries to the equation. Second, we contribute to a stream of research about the effects of production information on product evaluation (Cho and Schwarz 2008; Kruger et al. 2004), by showing that salary information affects product preference and price expectations. Third, we show that consumers have pessimistic intuitions about the salaries and the product quality in companies' of which they have little information, contributing to a stream of research about intuitions about firms (Bhattacharjee, Dana, and Baron 2017; Strohming and Jordan 2022) and intuitions about unknown or hidden information (John et al. 2016). Finally, we show that consumers have lay theories of the firm that influence their quality and price expectations, contributing to the literature about consumers as intuitive economists (Kruger et al. 2004). These topics are discussed in further detail in the General Discussion. From a practical perspective, the present findings provide a host of suggestions to both marketing managers and policymakers, which are also treated in more detail in the General Discussion.

QUALITY AND PRICE EXPECTATIONS

How would information about workers' salary influence consumer preferences? A fundamental insight about the marketplace comes from information economics (Erdem and Swait 1998; Kihstrom and Riordan 1984; Spence 1976): the marketplace is a situation of asymmetrical information, in which, before purchase, a firm has more information about the quality of their products than consumers do. In order to differentiate from competitors, the firm may send costly signals to potential consumers that its products are of high quality, for instance by spending a good amount of money on advertising and extended warranties. In

theory, consumers should catch these signals and use them to guide their own purchases. The marketing literature has evidenced that consumers' judgments of quality and brand perceptions respond to a variety of firms' signals (Kirmani and Rao 2000), which appear robust across several cultures (Dawar and Parker 1994). Consumers tend to interpret higher advertising costs as a positive signal of quality, provided that the company does not show desperation, is perceived as taking a considerable financial risk, and is thought of being interested in repeat purchases (Kirmani and Wright 1989). If advertising costs are considered too high, the relationship becomes negative, resulting in an inverted U-shape (Kirmani 1990). Similarly, there is an inverted U-shaped association between advertising exposition and quality expectations, such that consumers believe that products of which they see the advertisement more often are of higher quality than products of which they rarely see advertisements; if a product is advertised too often, however, quality expectations go down again (Kirmani 1997). Consumer warranties, too, can be considered a signal of quality, such that, if consumers expect that companies will honor their warranty, better warranties indicate higher quality, while the opposite happens when consumers expect that companies will not honor the warranty (Boulding and Kirmani 1993). This line of research is important as it shows that consumers respond to firm signals in a nuanced way, but it has mostly investigated the impact of marketing actions on perceived quality and brand perceptions, while neglecting to investigate the impact of worker-level feature perceptions of product quality. Workers' salaries are a serious candidate of costly signaling of product quality, as they imply a considerable expenditure of resources on the part of the firm. Therefore, consumers may believe that companies that pay better make higher-quality products.

It is less clear what expectations of quality will be when consumers have to compare both high- and low-wage companies with companies of which they do not know the wage. A

priori, there are several different options. There is some evidence from international surveys showing that people tend to grossly overestimate average wages in their own country (Gimpelson and Treisman 2018; Ipsos MORI 2015). If this is the case, consumers may be optimistic, and believe that companies of which they do not know workers' wages pay better than even companies that pay, say, \$30/hour (around the average in the USA in 2021). This may cause consumers to expect that products of companies of which they do not know the wages are of higher quality both compared to low-wage companies (that pay close to \$15/hour), average-high-wage companies (that pay \$49/hour). A second possibility is that consumers have a vague, but broadly accurate picture of companies' wages. This might imply that compared to both low-wage companies and high-wage companies, the average estimated salary will be approximately at the middle point between low- and high-wage companies. If quality expectations follow salary expectations, we should see the expected quality of unknown-salary companies be roughly in between low and middle-wage companies. A third possibility is that consumers are pessimistic about companies. Companies are profit-seeking, which is considered immoral (Bhattacharjee et al. 2017), which might imply that people have a negative image of many companies (Strohming and Jordan 2022). Further, people tend to be pessimistic about information that is actively hidden from them (John et al. 2016), and perhaps they may be similarly pessimistic about information they simply do not know. In this case, consumers may expect low salaries from companies of which they do not know the wage. Therefore, the expected quality of companies of which consumers do not know the salaries might be the same or worse than low-wage companies.

H1: Consumers believe that well-paid workers make higher-quality products, compared to both lower-paid workers and no-salary-information conditions

Of course, this notion has important implications for marketers. If consumers believe that products made by well-paid workers are of higher quality, it follows that they should be willing to pay more money for such products, and that even moderate-wage companies should try to communicate worker salary to counteract consumers' spontaneous pessimism about companies' wages.

Worker salary information may also affect price expectations. Consumers hold price-quality beliefs (i.e., they tend to expect and believe that higher-priced items are of higher quality) (Dawar and Parker 1994). Hence, consumers might expect that higher-paid workers make more expensive products, compared both to lower-paid workers. Consumers might also believe that the company has to recoup costs it expended through higher wage levels, and that it will do it through higher prices. We reasoned earlier that consumers might be pessimistic about companies' wage policies in absence of any information, which might affect quality expectations. If this reasoning holds here as well, consumers may spontaneously believe that companies of which they do not know the wages are paying at very low levels. This should influence their price expectations, which should be on the low end of the spectrum.

H2: Consumers believe that well-paid workers make higher-price products compared to both lower-paid workers and no-salary-information conditions

This issue might prove problematic for companies interested in advertising workers' salaries in order to increase quality expectations, as they might also increase price expectations. Therefore, it is important to test whether quality expectations follow workers' salaries even when product price is held constant, to test whether advertising workers' salaries is a viable strategy in presence of price information.

CONSUMERS' INTUITIONS ABOUT WORKERS' JOB SATISFACTION AND COMPANY INVESTMENTS

Why would people believe that well-paid workers produce higher-quality products?

We develop a theory proposing that our effects are driven by consumers' beliefs about both workers' behavior and companies' investment. Consumers believe that higher salaries lead to both higher worker satisfaction and greater expended effort on the side of the employees, and are a signal of higher investment levels by the company.

Consumers' beliefs about workers

Previous research showed that pay level positively influences job satisfaction (Judge et al. 2010), and that job satisfaction is positively correlated with overall life satisfaction (Bowling, Eschleman, and Wang 2010). If consumers have a lay understanding of these relationships, perhaps because of their own experiences as workers and their observations of other workers, it follows that consumers believe that well-paid workers are more satisfied and put more effort into their work.

What intuitions do consumers have about the effects of employees' satisfaction on product quality? We contrast three different perspectives, one descending from literature in service research, and one coming from neoclassical economics. A plethora of work indicates that increases in *actual* employee satisfaction are positively correlated with *customer* satisfaction, especially in the service industry (Bulgarella 2005; Koys 2001; Schmit and Allscheid 1995; Schneider and Bowen 1985; Vilares and Coelho 2003). Several mediating mechanisms have been proposed to explain this relationship. For instance, more satisfied employees could show higher customer orientation and pride in service, thereby offering actually better service, resulting in higher customer satisfaction (Reynierse and Harker 1992).

Alternatively, more satisfied employees may show higher employee commitment, thereby offering higher-quality services, also resulting in higher customer satisfaction (Little and Dean 2006). The relationship may also be explained by more satisfied workers typically working in a better environment, which allows them to offer a higher-quality service (Wiley 1991). Consumers may have learned from experience that more satisfied employees produce higher-quality products and provide higher-quality services (Bulgarella 2005; Vilares and Coelho 2003). Therefore, their intuitions might mirror these findings, as in the case of other inferences based on external cues (e.g., the effect of response speed on sincerity judgments, Ziano and Wang (2020), is also based on a relationship learned in the external environment).

According to our theory, we expect that greater worker satisfaction—inferred from higher salaries—will be interpreted as a signal of quality. Thereby, consumers derive product quality from high salaries via greater employee satisfaction, but also when employee satisfaction is presented alone. In sum, we test the hypothesis that people perceive the quality of products made by well-paid workers to be of higher quality. Formally,

H3: The effect of salary on expectations of quality is mediated by expectations of worker satisfaction.

If this is correct, we should also observe that manipulating worker satisfaction alone - for instance, by informing consumers of the actual levels of worker satisfaction of a company that pays high wages - may affect expectations of quality, such that lower perceived worker satisfaction decreases quality expectations compared to a no-salary or a low-salary condition, even when salary information is kept constant.

Consumers beliefs about companies' investments

Importantly, workers' salaries may also affect additional inferences about the firm. Worker's wages function as a signal of the firm's investment levels in other areas (Kirmani 1990). Consumers may believe that companies that pay higher wages are spending more other areas as well. Specifically, consumers may believe that the higher the wages, the more the firm is investing in areas such as technological development, product safety, and workplace safety. Increased investments in these fields might also prove beneficial to product quality, and consumers might connect it further to expectations of product quality. It is important to test this notion because - in addition to giving more psychological nuance to consumers' quality expectations - it would improve the understanding of the consumer lay theory of the firm and of workers' wages as signal not just of product quality, but also of other firms' behaviors.

H4: Consumers believe that highly-paying companies have a higher level of investment, which results in higher quality expectations and higher price expectations

MODERATORS: COMPANIES' LIES AND AUXILIARY WORKERS' SALARIES

Companies' lies

We proposed that consumers may get higher quality expectations from higher wages because of higher worker-side perceptions and because of higher perceived investment levels. Companies may therefore be tempted to misrepresent both of them, in addition to workers' salaries. What happens when they get caught? We propose that getting caught misrepresenting either the worker-side positive effects of workers' salaries or the investment level might have diverging effects for quality and prices. Specifically, we propose that consumers believe that when companies lie about either their workers' salaries or their investment conditions, they do

so to increase quality expectations in consumers and to have consumers pay higher prices. This should lead consumers to update their quality expectations, but not their price expectations, as they believe that companies lie with the objective of changing both, and consumers will not update price expectations - something that companies can try to set high thanks to misrepresentation – while quality is produced by better workers' salaries and company investment. This investigation is important for two reasons. First, it allows to uncover what happens when consumers find out that companies have been lying to them, and second, it introduces significant theoretical nuance by manipulating the mediators of our effect, performing a sharper causality test of our theory.

H5: When companies lie about either salaries or investment levels, the effect of workers' salaries is moderated for quality, but not for price

Auxiliary workers' salaries

There might be several categories of workers – paid differently – involved in bringing the same product to the final consumer. For instance, in the case of a candy bag, production workers in a candy factory may be making \$30/hour, while the delivery workers who play an auxiliary role, bringing the candy bag to the consumer's door, may be paid \$15/hour. What happens when these salaries diverge? We propose that this mostly affects price perceptions. Quality expectations may mostly be driven by production workers' salaries, as they should increase perceptions of workers' well-being and of investment levels. Price expectations, however, might be affected by knowledge of the salary of the auxiliary worker, as they might increase the perception of the costs that the company has to pay to get the product to the consumer, and might therefore increase price expectations compared to a situation where the consumer does not know how much auxiliary workers are making and might be pessimistic about their salary. Formally,

H6: When auxiliary workers are paid a low salary, the effect of production workers' salaries is moderated for price, but not for quality

Figure 1 shows a conceptual model of our reasoning for both quality expectations and price expectations.

FIGURE 1

CONCEPTUAL MODEL OF THE PRESENT PAPER FOR QUALITY AND PRICE EXPECTATIONS

STUDY OVERVIEW

We present seven experimental studies (six preregistered experiments in the main paper; one in the Web Appendix), with participants from the U.S.A., U.K., and France (total $N = 3626$), summarized in Table 1. Study 1 shows that consumers expect higher-quality and higher-price products from companies that pay their workers higher wages, compared to companies that pay lower wages and to companies, where no salary information is provided. Study 2 shows that when price is held constant, consumers expect higher-quality products from companies that pay their workers higher wages, compared both to lower wages and to a

condition in which consumers have no information about wages. Study 3 shows that when companies are caught lying about worker's conditions or investments, quality expectations (but not price expectations) are affected. Study 4 shows that auxiliary workers salary affects price, but not quality expectations. Study 5 demonstrates that participants' preferences in real product choice shift with worker payment information, and Study 6 and Study S1 show that consumers rate the same product to be of higher quality when they believe that it was made by higher-wage workers. Data, analyses, and materials are available at the following OSF link: https://osf.io/s7y86/?view_only=4f976ba877a448afab6d959aa759ca15.

Table 1

Study overview

Study	N (Participant Pool)	Main Finding	Product
Study 1	601 (Prolific)	Participants infer higher quality and prices from higher workers' wages	Candy canes
Study 2	605 (Prolific)	Participants only infer higher quality if prices are kept constant	Candy canes
Study 3	804 (Prolific)	When companies are caught lying about worker's conditions or investments, effects reverse for quality but not for price	Candy canes
Study 4	410 (Prolific)	Auxiliary workers salary affects price expectations, but not quality expectations	Candy canes
Study 5	206 (French students)	Participants' preferences in real product choice shift with worker payment information	Single candy
Study 7	1198 (MTurk)	Participants rate the same product to be higher quality and are willing to pay more money if they are told it is made by well-paid workers	Carpet
Study S1	212 (MTurk)	Participants rated the essays to be of better quality in the high-payment condition	Essay

STUDY 1 – THE EFFECT OF WORKER WAGES ON QUALITY EXPECTATIONS, PRICE EXPECTATIONS, AND INFERENCES ABOUT THE FIRM

The objective of this study is to test the consumer consequences of worker wages. This study was preregistered at https://aspredicted.org/TWH_SK6.

Methods

Participants. We recruited 601 U.S. American participants from Prolific. One participant failed the attention check at the end of the survey by replying “Yes” to the question "Have you ever been on the planet Venus” and was excluded from analyses as

preregistered. This exclusion left 600 participants (196 males, 391 females, 3 other, 1 preferred not to disclose, 9 nonbinary; $M_{age} = 35.32$, $SD = 14.22$).

Procedure. Participants were randomly assigned to one of three conditions (no salary shown, \$15/hour, \$30/hour). Participants were shown an advertisement from a company which they were told had a factory based in the Los Angeles County. In the no salary condition participants read the following:

Get our new candy pack of 72 candy canes! Made by our employees!

In the \$15/hour condition, participants read the following

Get our new candy pack of 72 candy canes! Made by our employees, who make \$15/hour!

In the \$30/hour condition, participants read the following:

Get our new candy pack of 72 candy canes! Made by our employees, who make \$30/hour!

Measures. The questions below were presented to participants in random order.

Product quality expectations: “What do you think of this product quality?” anchored at 1 (*very low*) and 7 (*very high*). Employee satisfaction: “How satisfied do you think employees making this candy are?” Effort: “How much effort do you think that these employees put into their work?” Perceptions of company investment in workplace safety: “Do you think this is a company that invests a lot in workplace safety measures?” Perceptions of company investment in product safety: “Do you think this is a company that invests a lot in food safety measures?” Perceptions of company investment in technology: “Do you think this is a company that invests a lot in technology?” Willingness to buy: “Would you be willing to buy

this product?” All of the above questions were answered on 7-point Likert scales anchored at 1 (not at all) and 7 (very much)

Price expectation, verbal: “What do you expect the price of this product will be?” anchored at 1 (*very low*) and 7 (*very high*). Price expectation, numeric: “What do you expect the price of this product will be?” Answered on a slider anchored at \$0 and \$20. Willingness to pay: “How much would you be willing to pay for this product?” Answered on a slider anchored at \$0 and \$20. Then, we asked two manipulation check. The first was a verbal assessment of salary levels compared to the job market: “What do you think of the salary paid to the workers?”, which was answered on a 7-point Likert scale anchored 1 (*well below average*), 4 (*average*), and 7 (*well above average*). The second manipulation check was a quantitative assessment of salary levels: “How much do you think these workers are paid per hour?” which was answered on a slider anchored at \$0 and \$100. We averaged satisfaction and effort in a worker-well-being index (Cronbach’s $\alpha = .75$). We averaged technology investment, food safety investment and workplace safety investment in an investment index (Cronbach’s $\alpha = .77$)¹. In the methods section, we focus on these two indices, quality expectations, price expectations (in dollars), salary expectations, WTP and WTB. We report the measures analysed individually and in their entirety in the Web Appendix.

Results

Salary expectations. A one-way ANOVA showed a significant omnibus effect, $F(2, 597) = 518.63, p < .001, \eta^2 = .635$. Tukey-corrected post-hoc analyses showed that participants expected higher salary when salaries were \$15/hour ($M = 14.91, SD = 1.78$)

¹ The construction of these indices was not preregistered.

compared to when salaries were not shown ($M = 12.47$, $SD = 5.89$), $p < .001$, $d = 0.44$, and they expected higher salary when the salary was \$30/hour ($M = 29.04$, $SD = 7.47$) compared to both the no salary shown condition, $p < .001$, $d = 2.97$, and the \$15/hour condition, $p < .001$, $d = 2.53$. These results show a remarkable level of pessimism compared to reality, as the minimum wage in LA country at the time of this study was \$15.96 – implying that participants' expectations were that companies were flouting the law.

Worker-well-being index. A one-way ANOVA showed a significant omnibus effect, $F(2, 597) = 143.54$, $p < .001$, $\eta^2 = .325$. Tukey-corrected post-hoc analyses showed that participants expected lower worker well-being when salaries were not shown ($M = 4.06$, $SD = 1.16$) compared to the \$15/hour condition ($M = 4.46$, $SD = 1.08$), $p = .001$, $d = 0.36$, but they expected higher worker well-being in the \$30/hour condition ($M = 5.84$, $SD = 1.08$) compared to both the no salary shown condition, $p < .001$, $d = 1.61$, and the \$15/hour condition, $p < .001$, $d = 1.25$.

Investment index. A one-way ANOVA showed a significant omnibus effect, $F(2, 597) = 58.72$, $p < .001$, $\eta^2 = .164$. Tukey-corrected post-hoc analyses showed that participants expected lower investment when salaries were not shown ($M = 3.92$, $SD = 1.04$) compared to the \$15/hour condition ($M = 4.18$, $SD = 1.04$), $p = .04$, $d = 0.25$, and they expected higher investment levels when the salary was \$30/hour ($M = 5.00$, $SD = 1.05$) compared to both the no salary shown condition, $p < .001$, $d = 1.04$, and the \$15/hour condition, $p < .001$, $d = 0.88$.

Quality. A one-way ANOVA revealed a significant omnibus effect, $F(2, 597) = 35.30$, $p < .001$, $\eta^2 = .106$. Tukey-corrected post-hoc analyses showed that participants expected similar quality when salaries were not shown ($M = 4.35$, $SD = 1.22$) and when salaries were \$15/hour ($M = 4.58$, $SD = 1.22$), $p = .16$, $d = 0.18$, but they expected higher quality when the salary was \$30/hour ($M = 5.34$, $SD = 1.26$) compared to both the no salary condition, $p < .001$, $d = 1.04$, and the \$15/hour condition, $p < .001$, $d = 0.88$.

.001, $d = 0.80$, and the \$15/hour condition, $p < .001$, $d = 0.62$. Results are presented in Figure 2.

Willingness to buy. A one-way ANOVA revealed a significant omnibus effect, $F(2, 597) = 10.97$, $p < .001$, $\eta^2 = .035$. Tukey-corrected post-hoc analyses indicated that participants showed similar WTB when salaries were not shown ($M = 3.66$, $SD = 1.72$) and when salaries were \$15/hour ($M = 3.49$, $SD = 1.74$), $p = .61$, $d = 0.10$, but they were more willing to buy the product when the salary was \$30/hour ($M = 4.26$, $SD = 1.83$) compared to both the no salary shown condition, $p = .002$, $d = 0.34$, and the \$15/hour condition, $p < .001$, $d = 0.44$.

Price expectation, number. A one-way ANOVA revealed a significant omnibus effect, $F(2, 597) = 41.76$, $p < .001$, $\eta^2 = .123$. Tukey-corrected post-hoc analyses showed that participants expected similar prices when salaries were \$15/hour ($M = 9.84$, $SD = 4.73$) compared to when salaries were not shown ($M = 9.00$, $SD = 4.71$), $p = .21$, $d = 0.17$, but they expected a higher price when the salary was \$30/hour ($M = 13.24$, $SD = 5.29$) compared to both the no salary shown condition, $p < .001$, $d = 0.86$, and the \$15/hour condition, $p < .001$, $d = 0.69$.

Willingness to pay. A one-way ANOVA revealed a significant omnibus effect, $F(2, 597) = 41.76$, $p < .001$, $\eta^2 = .123$. Tukey-corrected post-hoc analyses showed that participants were willing to pay similar price when salaries were \$15/hour ($M = 7.09$, $SD = 4.35$) compared to when salaries were not shared ($M = 6.96$, $SD = 4.12$), $p = .95$, $d = 0.03$, but they were willing to pay more when the salary was \$30/hour ($M = 9.74$, $SD = 5.02$) compared to both the no salary shown condition, $p < .001$, $d = 0.61$, and the \$15/hour condition, $p < .001$, $d = 0.58$.

*Mediation analysis – expected quality*². We conducted a parallel mediation analysis with PROCESS v4.0 (Hayes 2013; 5,000 bootstraps), using worker salary (not shown; \$15/hour; \$30/ hour) as multicategorical independent variable; worker-side index and investment index as parallel mediators; and expected quality as dependent variable. We found a significant indirect effect for both mediators, worker-side ab (SE) = 0.90 (0.10), 95% CI [0.70, 1.11]; investment ab (SE) = 0.43 (0.06), 95% CI [0.32, 0.56].

*Mediation analysis – expected price*³. We conducted a mediation analysis with PROCESS v4.0 (Hayes 2013; 5,000 bootstraps), using worker salary (not shown; \$15/hour; \$30/ hour) as multicategorical independent variable, investment index as mediator, and expected price as dependent variable. We found a significant indirect effect, ab (SE) = 0.54 (0.22), 95% CI [0.13, 0.99].

FIGURE 2

THE IMPACT OF SALARY ON PRICE EXPECTATIONS, QUALITY EXPECTATIONS,
AND WILLINGNESS-TO-BUY, STUDY 1

²Mediation analyses were not preregistered.

³This mediation only includes the investment index as mediator, consistent with the notion that prices are decided by the company and are not as affected by workers' well-being as prices are

Note. Means and 95% confidence intervals are depicted.

Discussion

Study 1 found that high worker salaries have positive consequences on consumers quality expectations, but also increase their price expectations compared to both companies paying lower-wage and companies that do not disclose salary information. Further, this study demonstrates that these effects are due to the increased worker well-being and investment levels that consumers believe are present in higher-wage companies compared to both lower-wage companies and companies that do not disclose salary information. Interestingly, consumers seem rather pessimistic about companies that do not share information about the salaries of their workers.

Can the same results be replicated when consumers know product prices? The next study tests this notion.

STUDY 2 – KEEPING PRICE CONSTANT

It is possible that - when consumers learn the product price – they make additional inferences about product quality, independently from workers' salaries, that might reduce the

effect of worker salary on quality expectations. The objective of this study is to test the impact of salary information on company perceptions, keeping product price constant. This study was preregistered at https://aspredicted.org/YCS_971.

Methods

Participants. We recruited 605 U.S. American participants from Prolific. Three participants failed the attention check at the end of the survey by replying “Yes” to the question “Have you ever been on Jupiter” and were excluded from analyses as preregistered. This exclusion left 602 participants (233 males, 355 females, 13 other, 1 preferred not to disclose; $M_{age} = 30.17$, $SD = 10.49$).

Procedure. Participants were randomly assigned to one of three conditions: no salary shown, \$49/hour, \$33/hour (above-average and average salary for a candy operator determined on the basis of a pretest). Participants read one variation of the following advertisement scenario, accompanied by a picture of the product (here, the no salary condition):

The following is an advertisement for Cal candy, a candy company based in the Los Angeles County:

Get our new candy! 72 candy canes for \$10. Made by our employees.

In the \$33/hour and the \$49/hour conditions, participants read this variation, which specified the hourly salary level:

Get our new candy! 72 candy canes for \$10. Made by our employees, [who make \$49 [\$33]/hour!]

Measures. Participants were then asked several questions in random order akin to Study 1. For this study, we focus on product quality expectations, which was measured by asking: “What do you think of this product quality?” anchored at 1 (*very low*) and 7 (*very high*). The other measures are reported and analysed in their entirety in the Web Appendix.

Results

Quality expectations. A one-way ANOVA indicated a main effect, $F(2, 599) = 16.04$, $p < .001$, $\eta^2 = .051$. Tukey-corrected post-hoc comparisons showed that participants expected higher quality from both the company paying \$33/hour ($M = 4.88$, $SD = 1.42$), $d = 0.49$, $p < .001$, and the company paying \$49/hour ($M = 4.87$, $SD = 1.50$) compared to when no salary was indicated, $d = 0.49$, $p < .001$ ($M = 4.18$, $SD = 1.36$). There was no statistically significant difference between the expected quality of the company paying \$33/hour and the company paying \$49/hour, $p = .99$, $d = 0.01$.

Discussion

Study 2 shows that products are perceived of higher quality when the salary is shown to consumers and perceived as above-average for the function, compared to when it is not shown, and when product price is held constant. Further, employees are perceived as expending more effort and being more satisfied, while the company is perceived as investing more in technology, product and workplace safety. Interestingly, the expectation for a salary for a candy-maker in California was as low as \$12/hour, and there were no differences between salaries of \$33/hour and \$49/hour, indicating perhaps that the effect of salary on quality plateaus above a certain satisfaction level.

This study shows that advertising above-average salaries has a series of advantages for the company, which are based on consumers’ inferences about its employees and the internal

functioning of the company itself. However, this might be prone to misconduct and tricking consumers into paying higher prices by providing ill information. Therefore, in the next study, we more closely inspect what happens when companies tell consumers that they pay high salaries, but then consumers learn that companies do not have satisfied workers or do not invest a lot.

STUDY 3 – WHEN COMPANIES BETRAY THE PUBLIC’S TRUST

The objective of this study is to test whether being informed that the company does not invest or has low employee satisfaction can lower quality perceptions and other important issue. This study was preregistered at https://aspredicted.org/59Z_ZDQ.

Methods

Participants. We initially recruited 804 participants from Prolific. One participant failed the attention check at the end of the survey by replying “Yes” to the question “Have you ever been on the planet Venus” and was excluded from analyses as preregistered. This exclusion left 803 participants (203 males, 599 females, 1 nonbinary; $M_{age} = 37.86$, $SD = 7.09$).

Procedure. Participants were randomly assigned to one of four conditions (no salary; \$30/hour; no investment; no satisfaction), in which they were presented with an advertisement for a candy pack, as follows (in brackets, the salary information shown to participants in the \$30/hour condition, which participants in the no salary condition did not see):

Get our new candy! 72 candy canes pack. Made by our employees [, who make \$30/hour]!

Then, participants in the high salary and participants in the no salary condition proceeded to the measures. Participants in the no investment condition, after learning that workers were paid \$30/hour, were shown the following additional information:

Note that this company has been repeatedly fined by the Los Angeles County because they have not invested enough money in workplace safety, technology, and product safety

Participants in the no satisfaction condition, after learning that workers were paid \$30/hour, were shown the following additional information:

Note that, when looking at Glassdoor (a website that lets employees rate various aspects of the company) ratings, employees at Cal candy showed an average satisfaction of 1.5/5 stars.

Measures. Participants were then asked several questions in randomized order, as in Study 1. A full list of questions is available in the Web Appendix, together with the relevant analyses. In this main paper, we focus on product quality expectations, which we measured by asking: “What do you think of this product quality?” anchored at 1 (very low) and 7 (*very high*), and on price expectation, which we measured by asking: “What do you expect the price of this product will be?” which was answered on a slider anchored at \$0 and \$20.

Results

Quality expectations. A one-way ANOVA revealed an effect of condition, $F(3, 799) = 26.65, p < .001, \eta^2 = .088$. Tukey-corrected post-hoc tests showed that compared to the no salary condition ($M = 4.00, SD = 1.36$), participants expected higher quality in the \$30/hour condition ($M = 4.67, SD = 1.54$), $p < .001, d = 0.47$. Participants also expected higher quality in the \$30/hour condition compared to the no salary condition ($M = 3.72, SD = 1.23$), $p <$

.001, $d = 0.67$, and compared to the no investment condition ($M = 3.46$, $SD = 1.54$), $p < .001$, $d = 0.41$. These analyses indicate that learning that a company that pays \$30/hour either does not invest or has unsatisfied employees lowers expectations of quality to levels similar or below to that of a company of which consumers do not know the salary level.

Price expectations (dollars). A one-way ANOVA revealed an effect of condition, $F(3, 799) = 14.59$, $p < .001$, $\eta^2 = .052$. Participants expected that compared to the no salary condition ($M = 7.52$, $SD = 4.55$), the company paying \$30/hour would have pricier products ($M = 10.93$, $SD = 5.43$), $p < .001$, $d = 0.65$. There were small differences between the \$30/hour condition and the no investment condition, ($M = 9.64$, $SD = 5.68$), $p = .074$, $d = 0.25$, and the no satisfaction condition ($M = 9.72$, $SD = 5.24$), $p = .11$, $d = 0.23$, indicating that consumers were not very likely to update their price expectations after learning that the company communicates unreliable information. Results are presented in Figure 3.

FIGURE 3

THE IMPACT OF SALARY ON PRICE AND QUALITY EXPECTATIONS, AND
WILLINGNESS-TO-BUY, STUDY 3

Note. Means and 95% confidence intervals are shown. Companies in the “lies about investment” and “lies about salary” were presented with a \$30/hour wage.

Discussion

Study 3 finds that receiving information about either low satisfaction or low investment can reduce the effect of worker salaries on quality expectations, but it has less straightforward effects on price expectations. Via a moderation-of-mediation study design (Spencer, Zanna, and Fong 2005), this study shows that consumers expectations are impacted by information about worker salaries through two channels: one relative to the workers' features in production (satisfaction and effort), the other relative to the company investment behaviour (whether technology, workplace or product safety). Further, Study 3 reveals that if news about satisfaction or investment behaviour contradict the information about worker salary, the effect of salary can be eliminated or even reversed compared to a condition that does not present worker salary. When does it make sense to disclose salary information? Is it advisable for all worker categories, or specifically for production (vs. e.g. delivery) contexts? Next, we investigate the effect of presenting auxiliary workers' salaries on price and quality expectations.

STUDY 4 – THE EFFECT OF AUXILIARY WORKERS SALARY INFORMATION

Many workers, with different features and different salary, might be included in the long process of bringing a product to a consumer. The objective of this study is to test whether knowing that auxiliary workers such as delivery personnel are paid a low salary (compared to not knowing how much they are paid) impacts quality and price expectations. This study was preregistered at https://aspredicted.org/PDV_QL3.

Methods

Participants. We recruited 408 U.S. American participants from Prolific. Seven participants failed the attention check at the end of the survey by replying “Yes” to the question “Have you ever been on the planet Jupiter” and were excluded from analyses as preregistered. This exclusion left 401 participants (122 males, 278 females, 1 other gender; $M_{age} = 36.19$, $SD = 14.61$).

Procedure. Participants were randomly assigned to one of four conditions in a 2 (production salary: not shown vs. \$30/hour) x 2 (delivery salary: not shown vs. \$15/hour) fully between-subjects design. All participants read the following introduction:

The following is an advertisement for Cal candy, a candy company based in the Los Angeles County:

Then, participants read a variation of the following scenario (in brackets, the added text in the \$30/hour production salary condition):

Get our new candy! 72 candy canes pack. Made by our employees, [who are paid \$30/hour].

Then, participants in the no delivery salary shown condition proceeded to the measures. Only participants in the \$15/hour delivery salary condition were shown the following information:

Note that these candy packs are delivered to your house by LMC Deliveries, a company that pays its couriers \$15/hour.

Measures. Participants were then asked several questions in randomized order, as in Study 1. A full list of questions is available in the Web Appendix, together with the relevant analyses. In this main paper, we focus on product quality expectations (“What do you think of

this product quality?” anchored at 1 (*very low*) and 7 (*very high*)), and on price expectation (“What do you expect the price of this product will be?” which was answered on a slider anchored at \$0 and \$20).

Results

Quality expectations. An ANOVA found an effect of employee salary, $F(1, 397) = 24.99, p < .001, \eta^2 = .059$, no effect of delivery salary, $F(1, 397) = 0.34, p = .56, \eta^2 = .001$, and no interaction, $F(1, 397) = 1.99, p = .16, \eta^2 = .005$. When no delivery salary was presented, participants expected higher quality when production workers were paid \$30/hour ($M = 5.09, SD = 1.39$) compared to when no production salary was shown ($M = 4.18, SD = 1.36$), $p < .001, d = 0.65$. When it was shared that delivery employees were paid \$15/hour, participants expected higher quality when production workers were paid \$30/hour ($M = 4.81, SD = 1.54$) compared to when no production salary was shown ($M = 4.30, SD = 1.35$), $p = .015, d = 0.36$.

Price, numerical measure. An ANOVA found an effect of employee salary, $F(1, 397) = 17.71, p < .001, \eta^2 = .042$, no effect of delivery salary, $F(1, 397) = 0.94, p = .33$, and an interaction, $F(1, 397) = 5.28, p = .022, \eta^2 = .013$. Tukey corrected post-hoc comparisons showed that when the delivery salary was not shown, participants expected higher prices in the \$30/hour condition ($M = 12.96, SD = 5.07$) compared to the no salary shown condition ($M = 9.57, SD = 5.09$), $p < .001, d = 0.65$, but this difference was much reduced (and the baseline price was higher) when the delivery salary was shown, as the expected price in the \$30/hour ($M = 12.27, SD = 5.64$) was similar to the one in the no salary condition ($M = 11.27, SD = 4.97$), $p = .56, d = 0.19$. Results are presented in Figure 4.

FIGURE 4

THE EFFECT OF PRODUCT WORKER SALARY AND AUXILIARY WORKER SALARY ON PRICE AND QUALITY EXPECTATIONS, STUDY 4

Note. Means and 95% confidence intervals are shown.

Discussion

This study confirms our notion that the revelation of auxiliary workers' salary influences price, but not quality expectations. This seems to be due to the pessimism of consumers about companies that do not disclose their worker salaries (showing a low-end salary corrects upwards). Study 4 demonstrated that it is the production worker salary that determines quality expectations. Consequently, worker salaries in production should be advertised with priority, e.g., on product packaging. It seems less beneficial to advertise auxiliary workers' salaries, as it might increase price expectations more than quality expectations.

STUDY 5: THE EFFECT OF WORKER SALARIES ON ACTUAL PRODUCT CHOICE

Study 5 aims to establish the effect of presented worker salary on consumer product choice. This study was preregistered at <http://aspredicted.org/blind.php?x=sv4hw8>.

Methods

We recruited 206 students in a French business school ($M_{\text{age}} = 20.16$, $SD_{\text{age}} = 0.87$, 88 males, 118 females). Participants were randomly assigned to one of two conditions (presented salary vs. not presented salary). In both conditions, participants were presented with two candy companies, called Laurdy and Kerge, both were based in Marseille and had 10,000 employees. In the presented salary condition, participants were told that Laurdy paid their employees an average of €850/month, while Kerge paid their employees an average of €1,900/month⁴. In the no salary presented condition, participants were not presented any salary information about the companies.

Then, participants were told that they could choose between one candy made by Laurdy (eucalyptus candy) and one candy made by Kerge (mint candy), which would be given to them by the research assistant in the lab. Next, participants were asked what they expected the quality of products from both companies to be (both on items anchored at 1 = *Very low* and 7 = *Very high*) and what they expected employees' satisfaction to be (*Happy*

⁴Note that the salaries specified here are realistic, and they reflect the need to increase statistical power by increasing the strength of the manipulation (Meyvis and Van Osselaer 2018). Minimum net salary for a full-time job in France at the time of conducting this study (2019) was around €1150/month.

and *Satisfied*, all anchored at 1= *Not at all* and 7 = *Very much*; these items showed good reliability in both cases, $\alpha_{\text{Laurdy}} = .92$, $\alpha_{\text{Kerge}} = .87$, and were therefore averaged per company). Finally, the research assistant gave participants the candy they had chosen. Note that company names, their order, and product offered (mint vs. eucalyptus candy) were kept constant across conditions, and therefore cannot explain our results. Here, we focus on product choice and quality expectations. The other measures are analyzed in the Web Appendix.

Results

Product Choice. When salaries were not presented, about 39% of participants (39/101) chose the eucalyptus candy (made by Laurdy), and 61% (62/101) chose the mint candy (made by Kerge). In line with predictions, when salaries were presented, and the company making the eucalyptus candy was the company paying their employees poorly, only 27/105 participants (26%) chose the eucalyptus candy and 78/105 (74%) chose the mint candy, $\chi^2 = 3.93$, $p = .047$, $\phi = .14$. This difference corresponds to a decrease of 33% in market share for the worse paying company if salaries are revealed, and is therefore of considerable magnitude and managerial interest.

Quality Expectations. A repeated-measures ANOVA, with condition as the between-subjects factor and company as the within-subjects factor, found a non-significant effect of condition, $F(1, 204) = 2.31$, $p = .13$, $\eta^2 = .006$, a significant effect of company, $F(1, 204) = 57.66$, $p < .001$, $\eta^2 = .083$, and most importantly, a significant mixed-interaction of condition and company, $F(1, 204) = 49.03$, $p < .001$, $\eta^2 = .078$ (presented in Figure 5). When salaries were not revealed, there was no statistically significant difference between the two companies (Laurdy, $M = 4.44$, $SD = 1.20$; Kerge, $M = 4.46$, $SD = 1.14$, $p = .85$, $d = 0.02$). When salaries were revealed, the worse paying company had significantly lower expected quality ratings compared to the better paying company (Laurdy, $M = 3.55$, $SD = 1.19$; Kerge, $M = 4.95$, $SD =$

1.00, $p < .001$, $d = 0.89$), showing the hypothesized shift in expected product quality, favoring the better-paying company and penalizing the lower-paying company.

FIGURE 5

THE EFFECT OF PRESENTED SALARY ON QUALITY EXPECTATIONS, STUDY 5.

NOTE - Error bars represent 95% confidence intervals. In the presented salary condition, participants were told that Kerge paid their workers better than Laurdy, while in the no salary shown condition, participants were not told about either company's salaries.

Discussion

Study 5 shows that information about workers' salaries has a consequential effect on consumer behavior, resulting a significant shift in product choice, caused by quality expectations. Consumers are more likely to choose a product that they believe was made by well-paid workers.

To this point, we have focused on quality expectations. However, can information about workers' salaries influence actual quality judgments? The next study set out to test this notion.

STUDY 6: THE EFFECT OF WORKER SALARY ON QUALITY *PERCEPTIONS*

The objective of this study was to test whether worker salary information, when experimentally manipulated, can increase actual quality *judgments* and WTP. Additionally, we extended previous results to a between-subjects design. Further, we tested whether expectations of satisfaction would mediate the relationship between workers' salaries and quality perceptions. This study was preregistered at <http://aspredicted.org/blind.php?x=9i27xj>.

Methods

We recruited 1200 U.S. American MTurk participants. After exclusions, we retained 1118 participants from MTurk (647 males, 466 females, 5 other/prefer not to disclose, $M_{\text{age}} = 37.55$, $SD_{\text{age}} = 12.65$). Participants were randomly assigned to one of two scenarios (low salary vs. high salary), and they read one of two versions of the text below (the low salary is shown in brackets):

The following carpets have been designed by employees at Leroy Carpets, a carpet company based in Knoxville, Tennessee, with about 3,000 employees.

These employees were paid about \$21.00 [\$8.00] per hour.

In Tennessee, the minimum salary at the time of conducting this study was \$7.25/hour, implying that the salary levels chosen in this experiment were realistic, but we did not inform participants of this to avoid biasing their perceptions with a relevant benchmark.

In both scenarios, participants rated how much they liked the design quality of each of the three carpets (on a scale from 1 = *not at all* and 7 = *very much*), indicated their WTP for each carpet (on a slider from \$0 - \$100), rated how happy and satisfied they assumed the company employees to be (each on a scale from 1 = *not at all* and 7 = *very much*), and finally,

as a manipulation check, rated how good they thought the employees' salaries were (on a scale from 1 = *not at all* and 7 = *very much*).

Results

Salary (Manipulation Check). Participants rated the salaries in the low salary condition ($M = 3.05$, $SD = 1.95$) as lower than salaries in the high salaries condition ($M = 5.34$, $SD = 1.11$), $t(1116) = 24.07$, $p < .001$, $d = 1.44$, confirming that the manipulation worked as intended.⁵

Quality Perceptions. The quality measures showed satisfactory reliability ($\alpha = .70$) and were therefore averaged. Participants rated the low salary carpet designs ($M = 4.62$, $SD = 1.14$) to be of lower quality than the higher salary carpet designs ($M = 4.81$, $SD = 1.13$), $t(1116) = 2.79$, $p = .003$, $d = 0.17$. This result replicated Study 1a with a more conservative design. Here, consumers actually *perceived* products to be of higher quality when they believed that products were made by well-paid workers.

Willingness-to-Pay. The quality measures showed good reliability ($\alpha = .89$) and were therefore averaged, as preregistered. Participants indicated lower WTP in the low salary condition ($M = 44.19$, $SD = 24.22$) compared to the higher salary condition ($M = 48.69$, $SD = 23.58$), $t(1116) = 3.15$, $p < .001$, $d = 0.19$. These results are in line with quality perceptions: consumers are willing to pay a higher amount for products that they believe are made by higher-paid employees.

⁵Both mean values were not close to the scale extremes (1 and 7), indicating that participants considered these salary levels as realistic and moderate.

Worker Satisfaction. The satisfaction measures showed good reliability ($\alpha = .95$) and were therefore averaged, as preregistered. Participants believed that lower salary employees ($M = 4.03$, $SD = 1.74$) were less satisfied than higher salary employees ($M = 5.37$, $SD = 1.21$), $t(1116) = 14.89$, $p < .001$, $d = 0.89$. These results, with those relative to WTP and worker satisfaction, are presented in Figure 6.

FIGURE 6

THE IMPACT OF SALARY ON AVERAGE INDICES OF EXPECTED SATISFACTION, QUALITY, AND WILLINGNESS-TO-PAY, STUDY 6

NOTE – The error bars represent 95% confidence intervals.

Discussion

Study 6 demonstrates that information about higher worker salaries can produce a significant effect on the perceived quality of products. When consumers are presented with products made by well-paid employees, they actually *perceive* these products to be of better quality and they are willing to spend more money for them. Further, we show evidence in line with the notion that this effect is due to the assumed higher satisfaction of well-paid employees and leads to higher willingness-to-pay for the same product. Study S1 in the Web Appendix extends these results to a different product with a different experimental design.

GENERAL DISCUSSION

In this paper, we showed that consumers perceive and expect products made by well-paid workers to be of higher quality and higher price. This happens because they believe that well-paid workers are more likely to exert more effort into their work, and that companies that pay their workers better invest more in technology, product safety, and workplace safety. The effect of worker salaries on expected quality remains even when price is held constant. Importantly, consumers seem pessimistic about companies of which they do not know the salary level, and they expect from them similar (or even lower) product quality and workers' salaries than from low-paying companies. In turn, consumers are more likely to choose a product made by a well-paying company with more satisfied workers and are also willing to pay more for it. When companies are caught lying about investment levels or worker satisfaction, consumers' quality expectations are affected downwards, but their price expectations are not affected to the same extent. When consumers learn about the salary of auxiliary workers (e.g., delivery workers), consumers' price expectations are pushed upwards, but their quality expectations do not seem affected to the same extent.

Overall, we show that consumers have a lay theory of the firm, connecting salaries to employee well-being and to investment levels, and that they self-interestedly reward firms who pay their employees higher salaries. Marketing managers, policymakers, activists, and worker unions may wish to use our results to make their products more attractive, avoid market distortions, and fight for wage raises in a more effective way respectively. We expand these issues below.

Theoretical Contribution

Understanding quality determinants is a central issue in the marketing discipline, which scholars have been investigating since the dawn of marketing as a scholarly discipline. Many product-level features influence quality perceptions and expectations, including product price (Rao and Monroe 1989) and country-of-origin (Verlegh and Steenkamp 1999). Previous research in marketing showed that consumers react to several quality signals sent by firms through their actions. That research has focused on the signaling effects of marketing actions such as advertising and warranties (Boulding and Kirmani 1993; Kirmani 1990; Kirmani and Rao 2000), but has not investigated consumers' interpretation of signals relating to workers' salaries. The present paper adds to the existing literature by investigating an important, available and widespread worker-level signal that had not yet been addressed by previous research, that is, worker salary. Of importance, we find that it is positively related to expectations and perceptions of quality.

The present work contributes to the research about lay theories of value and connects this research with the research in marketing about costly signals of quality. The literature showed that there are a host of factors that make people "lay economists" in addition to them being "lay biologists" and "lay physicists" (Coley et al. 2017; Markman and Guenther 2007), such as effort (Kruger et al. 2004; Ziano 2020; Ziano et al. 2021). The present work shows

tend to believe that value comes—among other things—from the satisfaction that people derive while doing their work, which is influenced by their salary and is roughly proportional to the effort they choose to put into their work. If effort can be understood as labor, such a lay theory is in line with classical and Marxist theories of value, which are based on labor quantities (e.g., Marx and Engels 1873; Smith 1776). It is, however, inconsistent with the neoclassical theory of value (proposed and refined by various British and French economists between the XIX and the XX century; see Stigler (1950) for a review), for which value comes from the marginal utility brought to the consumer by a product. Importantly, in addition to being “intuitive Marxists”, consumers also seem to believe that higher workers’ salaries are indicative of the company’s investment level, which they connect to product quality. Hence, consumers seem to have theories of value that include both the worker-side and the company side of the equation.

Our investigation also focused on price expectations. We contribute to the literature about price expectations in three ways. First, we showed that wage levels lead consumers to expect higher prices, thereby identifying an important cause of price expectations. Second, we show that this is driven by the perception that higher-paying companies have higher investment levels. Third, we show that this might be reduced when consumers learn the salary of auxiliary workers. The present findings therefore also contribute to the understanding of price expectations (Baskin and Liu 2021; Cai, Bagchi, and Gauri 2016; Thomas and Menon 2007; Zeithaml 1988), by identifying drivers of price expectations (workers’ salary), one of their psychological roots (perceptions of company investment), and an important moderator (the salary of auxiliary workers).

We found that consumers have pessimistic intuitions about companies’ salary, product quality, and investment level when they do not have salary information, to the point that they

believe companies are regularly flouting minimum wage laws, for instance. This result contributes to the literature about consumers' lay beliefs about companies (Bhattacharjee et al. 2017; Fath and Kay 2018; Strohming and Jordan 2022), which can be on the negative side, and connects it to literature on intuitions about hidden information (John et al. 2016), which observers tend to perceive in a negative way.

Managerial Recommendations

Given that our studies managed to induce changes in marketing-relevant outcomes such as quality perceptions and expectations, willingness-to-pay, as well as product choice, we have several recommendations for marketing managers.

First, managers should survey and take responsibility of the information that is available on the internet regarding their company's salaries. This recommendation is obvious for more traditionally personnel-concerned managers (human resources, hiring, etc.), but we contend that such metrics are also a marketing issue. Inaccurate information may potentially damage not only the company's hiring prospects, but also consumers' expectations and perceptions of product quality, therefore damaging the bottom line in more than one way. Marketing managers should take an active interest in the measurement and the improvement of companies' salaries, as they seem to increase consumer product evaluations. Further, marketing managers should think about the salaries of all workers involved in the product – not just production workers- because, as we have seen, it can also affect price expectations, perhaps inaccurately. Further, we suggest that even moderate-wage companies have an interest in publishing their salaries. Since consumers are very pessimistic about companies of which they do not know the salaries, publishing even a worker average hourly salary of \$17/hour (in the USA, and comparable salaries in other countries) might correct initial perceptions and increase quality expectations.

An astute manager may also be willing to include salary in promotional materials, such as advertising, if such material is good. The same astute manager would do well by completely omitting such information from promotional material if she believes that consumers may consider workers' salaries too low, which may in turn damage product attractiveness. Further, worker salary information should be accompanied by product price information because worker salary information has a positive effect on quality expectations even when price is kept constant. In absence of product price information, unwanted and increased price expectations may follow worker salary information.

Our results also have bearing for salary bargaining. Unions, activists, and politicians who demand higher worker salaries can point to our research showing that there is also a benefit *for the company's revenue* in raising wages. This strategy may have the potential to assuage the tension between management and workers that naturally arises in such situations, by showing that wage increases benefits both negotiating sides. Higher wages increase both workers' welfare and product attractiveness for consumers, which can result in greater profit for the company.

Policy Recommendations

Currently, some large companies in several countries (including the U.S.A. and the U.K.; Deloitte 2018; Security and Exchange Commission 2017) need to disclose worker salary information in some form. In the U.S.A., public companies need to disclose the median employee wage. In the U.K., companies employing more than 250 U.K.-based workers need to disclose salaries of employees at the 25th, 50th, and 75th percentile. Such legislation has been enacted in the hope that public opinion would push companies to raise wages and limit within-company income inequality but has been criticized, because the information they provide may be inaccurate or hard to evaluate for laypeople (Ziano, Lembregts, and

Pandelaere 2022). If policymakers want to reward companies that pay their employees well, they could expand on the mandate of publishing median wages in a standardized manner to level the playing field to avoid unfair comparisons between companies. Ideally, policymakers may mandate disclosures of salaries of the actual workers who made a specific product (rather than company workers in general), or at least workers that were *involved* in the making of a specific product in a broader sense (such as designers, managers, etc.).

We believe our results are also of interest to policymakers in the realm of consumer protection. Policymakers may regulate, and make public, both information about salary levels. Now, they are mostly publicly available via specialized websites, such as GlassDoor or Indeed, or through companies themselves. There is virtually no public oversight and discussion on the representativity, accuracy, and reliability of these data, the collection and elaboration of which is often considered proprietary and constitutes a sort of “black box”. For instance, it is possible that only people who either had a very good or very bad experience with a company (or salary) are willing to post about them on GlassDoor or Indeed, which could skew scores and create biases. Further, policymakers should be wary of the “gaming” of salary metrics by shrewd managers, as they have the potential to not only influence potential employees, but also potential consumers. The unchecked gaming of such metrics would further distort competition in the marketplace and unduly influence consumer behavior.

Limitations and Future Research

We replicated our results with participants from the U.S.A., U.K., and France. Possibly, consumers from other countries or cultures have different lay theories of value and therefore culture or country variables could function as moderators of the present effect, reducing or increasing its size. We encourage future research to extend our results with consumers that do not come from industrialized and rich countries.

Further, the present research suggests that minimum wage laws and any successful push for higher salaries have benefits for firms, too. For instance, consumers may expect and perceive products to be of higher quality when such products come from factories with higher minimum wages, if this is communicated to them. Unions and activists can use the present findings to push employers during negotiation, pointing out the benefits that a wage raise would have benefits for the company's product quality expectations and perceptions, and ultimately for the revenue and profits. The same reasoning can perhaps be applied to country-of-origin effects. Countries with higher wage levels may advertise these for their exported products to be perceived of higher quality. This insight may especially apply to countries that are not well-known in the target market and could then be penalized by unaware consumers. Future research may investigate this interesting proposition.

In the present research, we demonstrated how workers' salaries increase perceptions and expectations of product quality. Perhaps, other employee-level features can also influence consumer choices. For instance, knowing that the company provides workers with good non-salary benefits (e.g., health insurance, childcare, pension plans) may also influence perceptions and expectations of product quality. Future research may test this hypothesis.

Conclusion

In sum, this paper shows that consumers believe that well-paid workers make better products. Therefore, consumers are willing to pay larger sums of money for these products, and are more likely to choose them over products made by low-paid workers. The lay consumer intuitions that higher wages lead to higher worker satisfaction and higher investment levels engender this effect. While firms and workers' unions may want to use these insights to maximize their interests, it seems important that policymakers are aware to regulate worker salary information.

REFERENCES

- Baskin, Ernest and Peggy J. Liu (2021), “Meaningless Descriptors Increase Price Judgments and Decrease Quality Judgments,” *Journal of Consumer Psychology*, 31(2), 283–300.
- Bhattacharjee, Amit, Jason Dana, and Jonathan Baron (2017), “Can Profit Be Good ? Zero-Sum Thinking , Neglect of Incentives , and Anti-Profit Beliefs,” *Journal of Personality and Social Psychology*, (November).
- Boulding, William and Amna Kirmani (1993), “A Consumer-Side Experimental Examination of Signaling Theory: Do Consumers Perceive Warranties as Signals of Quality?,” *Journal of Consumer Research*, 20(1), 111.
- Bowling, Nathan A., Kevin J. Eschleman, and Qiang Wang (2010), “A Meta-Analytic Examination of the Relationship between Job Satisfaction and Subjective Well-Being,” *Journal of Occupational and Organizational Psychology*, 83(4), 915–34.
- Bulgarella, Caterina C. (2005), “Employee Satisfaction & Customer Satisfaction: Is There a Relationship?,” *Guide Star*, (February), 1–6.
- Cai, Fengyan, Rajesh Bagchi, and Dinesh K. Gauri (2016), “Boomerang Effects of Low Price Discounts: How Low Price Discounts Affect Purchase Intentions and Behaviors,” *Journal of Consumer Research*, 42, 804–16.
- Cho, Hyejeung and Norbert Schwarz (2008), “Of Great Art and Untalented Artists: Effort Information and the Flexible Construction of Judgmental Heuristics,” *Journal of Consumer Psychology*, 18, 205–11.
- Coley, John D., Melanie Arenson, Yian Xu, and Kimberly D. Tanner (2017), “Intuitive Biological Thought: Developmental Changes and Effects of Biology Education in Late

- Adolescence,” *Cognitive Psychology*, 92, 1–21,
<http://dx.doi.org/10.1016/j.cogpsych.2016.11.001>.
- Creyer, Elizabeth H. and William T. Ross (1996), “The Impact of Corporate Behavior on Perceived Product Value,” *Marketing Letters*, 7(2), 173–85.
- Dawar, Niraj and Philip Parker (1994), “Marketing Universals: Consumers’ Use of Brand Name, Price, Physical Appearance, and Retailer Reputation as Signals of Product Quality,” *Journal of Marketing*, 58(2), 81.
- Deloitte (2018), “Pay Ratios and Executive Pay Reporting BEIS Issues Legislation to Deliver Corporate Governance Reforms Including Pay Ratios,”
<https://www2.deloitte.com/content/dam/Deloitte/uk/Documents/tax/deloitte-uk-tax-pay-ratios-and-executive-pay-reporting.pdf>.
- Erdem, Tülin and Joffre Swait (1998), “Brand Equity as a Signaling Phenomenon,” *Journal of Consumer Psychology*, 7(2), 131–57.
- Fath, Sean and Aaron C. Kay (2018), “‘If Hierarchical, Then Corrupt’: Exploring People’s Tendency to Associate Hierarchy with Corruption in Organizations,” *Organizational Behavior and Human Decision Processes*, 149(October), 145–64,
<https://doi.org/10.1016/j.obhdp.2018.10.004>.
- Gimpelson, Vladimir and Daniel Treisman (2018), “Misperceiving Inequality,” *Economics and Politics*, 30(1), 27–54.
- Ipsos MORI (2015), “Perils of Perceptions,” *ipsos.com*, <https://www.ipsos.com/ipsos-mori/en-uk/perils-perception-2015>.
- John, Leslie K, Kate Barasz, and Michael I Norton (2016), “Hiding Personal Information

- Reveals the Worst,” *Proceedings of the National Academy of Sciences*, 113(4).
- Judge, Timothy A., Ronald F. Piccolo, Nathan P. Podsakoff, John C. Shaw, and Bruce L. Rich (2010), “The Relationship between Pay and Job Satisfaction: A Meta-Analysis of the Literature,” *Journal of Vocational Behavior*, 77(2), 157–67.
- Kihstrom, Richard E and Michael H Riordan (1984), “Advertising as a Signal,” *Journal of Political Economy*, 92(3), 427–50.
- Kirmani, Amna (1997), “Advertising Repetition as a Signal of Quality: If It’s Advertised so Much, Something Must Be Wrong,” *Journal of Advertising*, 26(3), 77–86.
- (1990), “The Effect of Perceived Advertising Costs on Brand Perceptions,” *Journal of Consumer Research*, 17(2), 160.
- Kirmani, Amna and Akshay Rao (2000), “No Pain, No Gain: A Critical Review of the Literature on Signaling Unobservable Product Quality,” *Journal of Marketing*, April, 66–79.
- Kirmani, Amna and Peter Wright (1989), “Money Talks: Perceived Advertising Expense and Expected Product Quality,” *Journal of Consumer Research*, 16(3), 344–53.
- Koys, Daniel J. (2001), “The Effects of Employee Satisfaction, Organizational Citizenship Behavior, and Turnover on Organizational Effectiveness: A Unit-Level, Longitudinal Study,” *Personnel Psychology*, 54(1), 101–14.
- Kruger, Justin, Derrick Wirtz, Leaf Van Boven, and T. William Altermatt (2004), “The Effort Heuristic,” *Journal of Experimental Social Psychology*, 40, 91–98.
- Little, Marie Mikic and Alison M. Dean (2006), “Links between Service Climate, Employee Commitment and Employees’ Service Quality Capability,” *Managing Service Quality*,

16(5), 460–76.

- Markman, Keith D. and Corey L. Guenther (2007), “Psychological Momentum: Intuitive Physics and Naive Beliefs,” *Personality and Social Psychology Bulletin*, 33(6), 800–812.
- Marx, Karl and Friedrich Engels (1873), *Capital: A Critique of Political Economy*, New York: International Publishers.
- Meyvis, Tom and Stijn M.J. Van Osselaer (2018), “Increasing the Power of Your Study by Increasing the Effect Size,” *Journal of Consumer Research*, 44(5), 1157–73.
- Rao, Akshay 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.
- Reynierse, James H. and John B. Harker (1992), “Employee and Customer Perceptions of Service in Banks: Teller and Customer Service Representative Ratings,” *Human Resource Planning*.
- Schmit, Mark J. and Steven P. Allscheid (1995), “Employee Attitudes and Customer Satisfaction: Making Theoretical and Empirical Connections,” *Personnel Psychology*, 48(3), 521–36.
- Schneider, Benjamin and David E. Bowen (1985), “Employee and Customer Perceptions of Service in Banks. Replication and Extension,” *Journal of Applied Psychology*, 70(3), 423–33.
- Security and Exchange Commission (2017), “Commission Guidance on Pay Ratio Disclosure,” <https://www.sec.gov/rules/interp/2017/33-10415.pdf>.
- Smith, Adam (1776), “An Inquiry into the Nature and Causes of the Wealth of Nations.”

- Spence, Michael (1976), "Informational Aspects of Market Structure," *The Quarterly Journal of Economics*, 90(4), 591–97.
- Spencer, Steven J., Mark P. Zanna, and Geoffrey T. Fong (2005), "Establishing a Causal Chain: Why Experiments Are Often More Effective than Mediational Analyses in Examining Psychological Processes," *Journal of Personality and Social Psychology*, 89(6), 845–51.
- Stigler, George (1950), "The Development of Utility Theory," *Journal of Political Economy*, 58(4), 307–27.
- Strohmingner, Nina and Matthew R Jordan (2022), "Corporate Insecthood.," *Cognition*, 224, 105068.
- Thomas, Manoj and Geeta Menon (2007), "When Internal Reference Prices and Price Expectations Diverge: The Role of Confidence," *Journal of Marketing Research*, 44(3), 401–9.
- Verlegh, Peeter W.J. and Jan-Benedict E.M. Steenkamp (1999), "A Review and Meta-Analysis of Country-of-Origin Research," *Journal of Economic Psychology*, 20(5), 521–46, <http://linkinghub.elsevier.com/retrieve/pii/S0167487099000239>.
- Vilares, Manuel Jose and Pedro Simoes Coelho (2003), "The Employee-customer Satisfaction Chain in the ECSI Model," *European Journal of Marketing*, 37(11/12), 1703–22.
- Wiley, Jack W. (1991), "Customer Satisfaction: A Supportive Work Environment and Its Financial Cost," *Human Resource Planning*, 12, 117–27.
- Zeithaml, Valarie A. (1988), "Consumer Perceptions of Price, Quality, and Value: A Means-End Model and Synthesis of Evidence," *Journal of Marketing*, 52(3), 2.

Ziano, Ignazio (2020), *More Work Makes Sadder Songs: Consumers' Inferences of Product Mood from Product Effort*,

https://www.researchgate.net/publication/340646430_More_Work_Makes_Sadder_Songs_Consumers'_Inferences_of_Product_Mood_from_Product_Effort.

Ziano, Ignazio, Christophe Lembregts, and Mario Pandelaere (2022), "Perceived Income Inequality: Why Pay Ratios Are Less Effective Than Median Incomes," *Journal of Economic Psychology*, 1–39, <https://psyarxiv.com/2zngf/>.

Ziano, Ignazio and Deming Wang (2021), "Slow Lies: Response Delays Promote Perceptions of Insincerity," *Journal of Personality and Social Psychology*.

Ziano, Ignazio, Siu Kit Yeung, Cheong Shing Lee, Jiaxin Shi, and Gilad Feldman (2021), *Examining the Impact of Effort on Perceived Quality and Value by Revisiting "The Effort Heuristic": Mixed Results of Close Replications of Kruger et Al. (2004)*, https://www.researchgate.net/publication/349099268_Examining_the_impact_of_effort_on_perceived_quality_and_value_by_revisiting_The_Effort_Heuristic_Mixed_results_of_close_replications_of_Kruger_et_al_2004.