

The Starbucks Effect: The Impact of Name-based Order Identification

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The Starbucks Effect: The Impact of Order Identification by Name

Abstract

Retailers traditionally use a number system to match a product or service to a customer (e.g., to make sure the right customer receives the right hot drink); however, some retailers have started to match an order by using a customer's name. A series of six studies, including an incentive-compatible experiment and field study, examine *whether, when, and why order identification by customer name* can help or hurt retailers. In contrast to prior research that suggests a negative effect of using a customer's name in marketing communications (e.g., online ads), the current studies demonstrate a positive impact of identifying an order by name, which we refer to as "the Starbucks Effect." However, this effect is mitigated or even backfires under specific circumstances. The results suggest that managers can use customers' names (and avoid the use of numbers) to increase customer satisfaction, but with caution, particularly in situations where privacy may be of concern (even when the customer is only asked for their first name and could provide a fake name).

Keyword: order identification, objectification, privacy concerns, beneficial effects of marketing

Highlights

- Identifies the “Starbucks Effect” - the positive effect of identifying an order by name (vs. number).
- The Starbucks Effect is due to a decrease in customers’ sense of objectification.
- The effect is mitigated when consumers highly value privacy or need privacy protection.
- The effect is mitigated when such identification is less likely to decrease a sense of objectification.
- Retailers can decrease customers’ sense of objectification with operational tactics (name-based identification).

Introduction

In many retail settings, firms need to match the product or service to a customer. For example, when a customer places an order for a hot drink or a sandwich, firms usually identify the order by an order number. Some retailers, however, have relinquished this common practice in favor of name-based order identification—they identify an order by a customer's name. This switch to name-based order identification may be motivated by operational efficiency. For example, at a coffee shop, such as Starbucks, using names might help overcome

misidentification in a noisy environment with loud espresso machines (Colin 1953).

It is unclear, however, if identifying an order by name (versus number) makes a difference in terms of customers' evaluation and choice of a product or retailer. Existing research on using customers' name outside the ordering context suggests that order identification by name would have a negative effect. Specifically, past work in marketing communications shows that including customers' names in advertisements (e.g., online banner, email) attracts customers' attention (e.g., customers are more likely to open an email; Sahni, Wheeler, and Chintagunta 2018), but leads to negative responses due to increased perception of privacy invasion (Wattal et al. 2012). In an ordering context, the positive effect on attention seems less important (as the customer has already decided to place an order and will anyway pay enough attention to ensure they receive the item they ordered). Thus, the most closely related literature proposes that customers might perceive name-based order identification as a privacy invasion, thereby responding negatively to the retailer and being less likely to (re)visit the store.

It is not obvious, however, whether this negative effect will occur. Prior research has primarily focused on a marketing communication context where a customer sees their name on an ad or email without knowing how the company obtained the name and without one's consent.

However, in the context we study—a retail ordering context—a customer is asked for their name, and the customer has the option to either opt-out or even pick a fake name. Thus, using a customer’s name for order identification might not elicit a strong perception of privacy invasion. Moreover, might there also be a psychological factor that could drive a positive effect of name-based order identification (and compensate for any negative effect coming from privacy invasion)? One promising factor is de-objectification (Nussbaum 1995; van Osselaer et al. 2020), which suggests that having orders identified by name might make consumers feel treated more like a person and less like an object. In the current age of globalization, automation, and faceless efficiency, such a sense of de-objectification would be a particularly important factor that affects customers’ evaluations of products and stores. In this sense, order identification by name might engender a positive net effect.

In this manuscript, we examine the following research questions. First, we examine whether order identification by name (vs. number) generally engenders a negative or positive effect on retailers. Second, we examine the psychological processes underlying this effect and identify situations in which the balance of these processes changes to produce a mitigated or even inverse effect. In doing so, our work contributes to the literature on customer objectification (van Osselaer et al. 2020), on privacy concerns (Kim, Baraz, and John 2019), and on the beneficial effects of marketing (Chandy et al. 2021). Moreover, we contribute to the literature on using customer names by going beyond the context of marketing communications (Wattal et al. 2012).

Conceptual Framework

Why Order Identification by Name May Have a Negative Effect: The Role of Perceived Privacy Violation

The prior research that probably comes closest to our topic of study is research on addressing (prospective) customers by name in marketing communications. This stream of research has shown divergent influences on attention and product evaluation. Specifically, several researchers show that using a recipient's first name in an advertisement or piece of direct mail has a positive effect on attention. For instance, adding a customer's first name in a subject line of a promotional email increases the probability that an email is opened (Sahni et al. 2018). Similarly, customers pay greater attention to banner advertisements that contain their names (e.g., "Hello Jack, looking for gifts?"), leading to decreased exploration of other options (Tam and Ho 2010). Effects on product evaluation, however, tend to be negative. For example, Wattal et al. (2012) found that customers were less likely to make a purchase after opening an email advertisement that greeted them by name. Similarly, Van Doorn and Hoekstra (2013) found that including a customer's first name in an online banner ad was perceived as intrusive and did not boost purchase intention. White et al. (2008) also found that customers showed greater reactance and lower click-through intention when email advertisements used personal information, including the recipient's name, particularly when this information was used without explicit justification. Thus, prior research on using a customer's first name in marketing communications has shown both a positive effect through increased attention and a negative effect through reactions that seem to be centered around privacy violations.¹

¹ Note that related studies in non marketing communication contexts are surprisingly scarce. A review of the literature revealed only one study that seems tangentially related at best. In a lab-based experiment, Suprenant and Solomon (1987) examined the effect of having more (vs. less) individual conversations with customers in a service encounter. Using a role-play format in a bank setting (in which participants played the role of customers), the authors found that instructing bank employees to have more (vs. less) small talk has more negative than positive effects: While more personal interaction (more small talk) increased customer evaluations on performance dimensions that were judged as less important (i.e., perceived sociability and friendliness of the employee, warmth of the bank), it reduced their evaluations on performance dimensions that were judged as more important (i.e., perceived competence and effectiveness of the bank employee, trustworthiness of the bank). Thus, the evidence from this research—which uses different independent variables (e.g., having more vs. less two-way discussion

An unexplored question is whether and how this research on marketing communications would translate to the context of order identification. One of the main differences between the two situations is that attention is particularly crucial in marketing communications. Customers are bombarded with hundreds of ads and emails each day, and customers ignore many of those messages. In the context of order identification, however, the customer has willingly and knowingly placed their order and will pay sufficient attention to make sure they receive their order. Thus, the attention path seems likely to be much less prominent in the context of order identification, which leaves the negative effect through privacy violation. Being asked for one's name to identify an order may seem intrusive and a violation of privacy. Thus, prior research in marketing communications would lead us to the prediction that identifying an order by name might have an overall negative effect on customers' evaluations and choices.

Why Order Identification by Name May Have a Positive Effect: The Role of Customer Objectification

Whereas research in marketing communications suggests a negative effect of identifying orders by name due to privacy invasion, there are reasons to suspect a positive effect too. In the marketing communications context, customers' names are often used without them knowing how or where the information about their name was gathered. Both of these factors have been shown to increase customers' sense of privacy violation (Kim et al. 2019). Moreover, they do not know if it was only their name or whether the marketer also gathered other sensitive information. In the context of order identification, store personnel usually ask customers for only their first name.

Thus, customers know how, where, and what information was gathered. In addition, asking

instead of merely asking for a name), dependent variables, and contexts—is inconclusive and does not help to answer our research questions.

customers for their name gives them the opportunity to opt out or, perhaps more likely, give a fake name. Thus, whereas prior research in marketing communications suggests a negative effect on customer responses, privacy concerns might be less salient in the context of identifying orders by name. Thus, it is far from certain that an overall negative effect would be obtained in the context of order identification if there is another process that creates a positive effect.

One process that might pull in the other (positive) direction is through customers' sense of objectification (Nussbaum 1995; van Osselaer et al. 2020).² Objectification is defined as treating another person as a mere interchangeable means to achieve one's goals or needs (Nussbaum 1995; van Osselaer et al. 2020). Objectification can occur in different interpersonal contexts (sexual objectification, Fredrickson and Roberts 1997; objectification among workers, Belmi and Schroeder 2020; Gruenfeld et al. 2008). For instance, in work (vs. non-work) contexts, people tend to treat others more as an instrument to achieve their professional goals rather than as a person (Belmi and Schroeder 2020).

In terms of the marketplace, individuals may feel objectified in their role as customers (van Osselaer et al. 2020). In an economy where profit maximization is the foremost business principle, these customers feel that producers are mostly interested in their money or perceive them merely as walking wallets (Holt 2002; Pruden and Longman 1972). We define this specific form of objectification in the marketplace as a *customer's sense of objectification*—the extent to which the customer feels treated as an interchangeable instrument for profit by a producer or service provider (van Osselaer et al. 2020).

Although identifying an order by a customer's name does not involve any in-depth insight into a person's identity (e.g., there are thousands of people with identical first names) or

² The invited conceptual article by van Osselaer et al. (2020), in addition to discussing consumer objectification, briefly refers to a working paper version of the current work. The current work is the original research.

change the transactional nature of a relationship with a producer, we propose that order identification by name affects customers' perception of how a producer or service provider perceives them, as a person versus as an object. Personal names function as markers of individuation, embody one's personhood, and constitute a central part of a person's identity (Jones et al. 2002; Kettle and Haubl 2011; Trudel et al. 2016; vom Bruck and Bodenhorn 2013). Asking for someone's name is a core part of initiating relationships and of recognizing that person as an individual social being. Likewise, giving a personal name to an object causes people to treat the object more like a human (Aggarwal and McGill 2011). In this regard, name-based order identification (identifying an order by a customer's name) may prompt *customers* to expect that the *producer* would perceive them as less of an object, thereby engendering more favorable attitudes towards the producer's products and services. Put differently, it seems possible that name-based order identification increases feelings of de-objectification, which subsequently may yield an overall positive effect on outcomes such as customer preference and satisfaction.

In sum, a marketing practice that might be seen at first sight as another example of "evil marketing"—a privacy invasion or a marketing gimmick—may actually benefit the customer (Chandy et al. 2021) by making them feel recognized and acknowledged as an individual person rather than being objectified as an interchangeable instrument for profit. In this paper, we refer to this overall positive effect as the "Starbucks Effect" because, based on our studies, the name-based order identification is likely to play a role in establishing Starbucks as its customers' 'third place' (Oldenburg 1989; Schultz 1997), a place where customers feel like humans.

Moderation of the Effect of Order Identification by Name

Whereas it is important to identify the direction (i.e., positive or negative) of the general effect, it is also important to explore conditions in which that general effect is amplified,

diminished, or even reversed. We explore several variables that might moderate the general effect. First, name-based order identification should have a less positive or more negative effect when such identification is less likely to decrease customers' sense of objectification. This may occur when a producer is a non-human agent, such as a robot. A robot is a nonliving and not-fully-social agent that may not be expected to have social perceptions (Gray, Gray, and Wegner 2007). In a robot, any perception, including the perception of a customer, is broken down into attributes and attribute values, instead of seeing them as an individual social person (Yalcin et al. 2022). It stands to reason that customers would be less likely to feel that a robot identifying them by name holds a de-objectifying view of them. Thus, we propose that name-based order identification will have a less positive or more negative effect when the identification is to a non-human agent such as a robot.

Second, if name-based order identification can engender both a perceived sense of objectification and a sense of privacy violation, then the effect of order identification by name should be moderated by the extent to which customers place greater importance on privacy protection relative to de-objectification. Therefore, we predict that the effect of name-based order identification should depend on customers' general level of privacy concerns, which should vary by individual. Some customers generally place greater importance on privacy protection (vs. objectification) compared to other customers. Thus, we predict that name-based order identification will have a less positive or more negative effect for customers with a greater desire to protect their privacy relative to objectification concerns.

Third and relatedly, customers may have a stronger desire to protect their privacy in certain purchase situations relative to others. Prior research has shown that customers making an embarrassing purchase tend to be concerned about the negative judgment of others (Dahl,

Manchanda, and Argo 2001). Thus, any positive effect of name-based order identification should be mitigated, or even reversed, when the customer is making an embarrassing purchase. Finally, situations where customers are asked to divulge additional information (e.g., the last name or personal preferences) may signal even more strongly that the service provider or product producer acknowledges the customer as an individual person. However, asking customers for additional information may also heighten privacy concerns. Thus, we have a two-sided hypothesis about any moderating effect of increasing the information requested beyond the customer's first name. Figure 1 summarizes the theoretical framework laid out above.

-Figure 1-

Overview of Studies

Across six studies, we test our proposed theoretical framework (Figure 1). We begin by conducting three studies to examine the general effect of order identification on consequential store choice (study 1), actual service satisfaction measured at coffee shops in the field (study 2), and store revenue (follow-up field study). We further examine the de-objectification mechanism by testing moderation by producer type (robot vs. human; study 3). Next, we examine how identifying an order with more personal information (in addition to name) impacts customer preference and examine an alternative account that order identification changes customers' inferences about product quality (study 4). Lastly, we examine when name-based order identification hurts a firm by testing the role of privacy concerns (studies 5a and 5b). In sum, these studies provide a systematic examination of the effect of name-based order identification across multiple measures and experimental settings.

In all studies, we determined sample sizes and exclusion criteria (if any) in advance. We report all manipulations, all measures, and all exclusions (see Web Appendix A for stimuli). We

used attention checks and consistently excluded all participants who failed any check (Meyvis and van Osselaer 2018). We report full details of exclusion criteria if any (Web Appendix B) and supplementary analyses with excluded participants (Web Appendix C). In addition to in-study attention checks, we screened participants *before* the study using an instructional manipulation check in studies 3, 5a, and 5b (Oppenheimer, Meyvis, and Davidenko 2009). Those who failed the attention check were not allowed to proceed to the actual study so they did not generate any data and were not counted as participants.

Study 1: The Effect Of Order Identification on Incentive Compatible Store Preference

Study 1 provided an initial test of how order identification influences customer-related outcomes. Specifically, study 1 tested the effect of order identification on the incentive-compatible choice of a store.

Method

We recruited 397 participants from an online panel (Amazon Mechanical Turk [Mturk]; $M_{\text{age}} = 35$ years, 232 female). Participants were asked to consider buying a box of chocolate chip cookies and read descriptions of two real small bakeries that sell cookies online: Gigi's and Casey's. Gigi's was described as a French-inspired pastry shop featuring fine baked goods, whereas Casey's was described as specializing in artisanal European pastry and delectable desserts. To examine the order identification effect, we manipulated which of the bakeries identified an order either by name or by number. Specifically, we told half the participants that Casey's bakery sent customers' first name to the baker along with their order (name-based order identification), whereas Gigi's bakery processed their order by an order number (number-based order identification). For the other half, we reversed this: Gigi's sent an order to the baker along

with customers' first name, whereas Casey's processed it by number. Note that our manipulation of order identification does not involve any customization of products; that is, the focal product was standard and not tailored in any respect for a specific customer (Vesanen and Raulas 2007).

Next, participants indicated their preference between the two bakeries ("Which bakery do you prefer?," 1 = definitely Gigi's bakery, 5 = indifferent, 9 = definitely Casey's bakery). To make the choice consequential, we told them, truthfully, that five participants would receive cookies from their chosen bakery. Participants were also told that they would receive cookies randomly from one of the bakeries if they were indifferent between the two. Lastly, participants completed the perceived awareness of research hypothesis (PARH) scale (Rubin, Paolini, and Crisp 2010; $\alpha = .88$). After the experiment, we sent five participants a box of their chosen cookies (Gigi's or Casey's).

Results and Discussion

Participants indicated a greater preference for Casey's (vs. Gigi's) when it identified an order by name ($M_{\text{casey_name}} = 5.94$, $SD = 2.40$) rather than by number ($M_{\text{casey_number}} = 4.32$, $SD = 2.51$; $F(1, 395) = 43.10$, $p < .001$, $\eta_p^2 = .10$). Furthermore, this effect was not affected by participants' perceived awareness of the research hypothesis (PARH). The effect of order identification remained significant after controlling for PARH ($F(1, 394) = 42.74$, $p < .001$, $\eta_p^2 = .10$), and the effect of PARH was not significant ($F < 1$). This result suggests that demand effects are unlikely to account for the effect observed. Taken together, study 1 demonstrated that name-based (vs. number-based) order identification had a positive effect on incentive-compatible store preference.

Study 2: Effect of Order Identification on Customer Satisfaction at Coffee Shops (Field Study)

Study 2 examined how name-based (vs. number-based) order identification affects the customer experience *after* making a purchase decision, namely service satisfaction. To this end, we collaborated with two coffee shops and ran a large field study over two weeks. Furthermore, study 2 examined a potential mechanism underlying the order identification effect, namely customers' sense of de-objectification. We proposed that identifying an order by name may prompt customers to feel less like an object, which results in a more positive evaluation of a store and product. To test this proposition, we measured perceived objectification and examined whether perceived objectification mediates the order identification effect.

Method

We conducted a field study at two coffee shops located on the campus of a large university; we abbreviated their names to LC and R. The study took place over two weeks (8 am to 3 pm, Monday through Friday). To manipulate order identification, we varied how an order was identified at each coffee shop. In the name identification condition, baristas identified orders by name – they wrote the customer's name on the cup and called out their name when orders were ready. In the number identification condition, baristas identified orders by number – they wrote down order numbers on cups and gave number cards to customers. We counterbalanced the ordering system implemented at each coffee shop across weeks. In the first week, baristas at LC used the number-based order identification, whereas those at R used the name-based order identification. In the second week, the opposite was the case.

At each coffee shop, customers who had received their drinks were asked to participate in a short survey. A total of 1,120 customers agreed to complete the survey. To measure perceived objectification, we asked customers to indicate the extent to which they felt that employees at the coffee shop treated them as an interchangeable source of money rather than as an individual

person (0 = totally as an individual person, 10 = totally as an interchangeable source of money). We measured service satisfaction by asking them to indicate 1) how much they liked the way people at the coffee shop took and called out their order and 2) how they felt about their experience with the people who served them at the coffee shop (1 = bad, 7 = outstanding; $r = .83$). As a control variable, we asked how many times a week they order a custom-made drink at the coffee shop. In the name-ordering condition, we also asked participants whether they gave a fake name to the barista, as well as whether the barista wrote their name correctly.

Results

Service satisfaction

We conducted a 2 (order identification: name vs. number) x 2 (coffee shop: LC vs. R) ANOVA on service satisfaction. Customers indicated greater service satisfaction when their order was identified by name than by number; Least-Squares Means: $LS_{\text{name}} = 5.40$, $SE = .05$ vs. $LS_{\text{number}} = 5.21$, $SE = .05$; $F(1, 1116) = 7.10$, $p = .008$, $\eta_p^2 = .01$). Although customers indicated greater satisfaction at R rather than at LC ($LS_R = 5.74$, $SE = .05$ vs. $LS_{LC} = 4.87$, $SE = .05$; $F(1, 1116) = 151.95$, $p < .001$, $\eta_p^2 = .12$), there was no significant interaction effect ($F < 1$), suggesting that the effect of order identification does not systematically vary across the two coffee shops. The key effect of order identification remained significant after controlling for the average number of purchases of custom-made (i.e., not pre-packaged) drink per week ($F(1, 1109) = 8.24$, $p = .004$, $\eta_p^2 = .01$).³

Perceived customer objectification

Participants felt a lower sense of objectification when baristas identified an order by name ($LS = 2.35$, $SE = .10$) than by number ($LS = 2.90$, $SE = .09$; $F(1, 1099) = 16.60$, $p < .001$,

³ Six customers did not report the average number of drinks they purchase per week, which results in lower degrees of freedom.

$\eta_p^2 = .01$).⁴ In addition, customers at R indicated a lower sense of objectification than those at LC ($LS_R = 2.03$, $SE = .10$ vs. $LS_{LC} = 3.22$, $SE = .09$; $F(1, 1099) = 76.71$, $p < .001$, $\eta_p^2 = .07$). The interaction between order identification and coffee shop was not significant ($F(1, 1099) = 1.32$, $p = .251$), indicating that the effect of order identification does not systematically vary across the two coffee shops. The effect of order identification remained significant after controlling for the average number of purchases of drinks per week ($F(1, 1092) = 18.01$, $p < .001$, $\eta_p^2 = .02$).

Mediation analysis

To test the mediating role of perceived customer objectification, we conducted a bootstrapping analysis (Hayes 2013, Model 4) with order identification as the independent variable, perceived objectification as the mediator, service satisfaction as the dependent variable, and coffee shop as a covariate. The analysis yielded a significant indirect effect of order identification through perceived objectification ($B_{\text{indirect}} = .10$, $CI_{95\%} [.053, .157]$; this effect remained significant after controlling for the average number of drinks per week).

Discussion

Study 2 extends the findings of study 1 by examining the effect of order identification on service satisfaction in a field setting. Customers indicated greater satisfaction when baristas identified an order by name (vs. number), suggesting that name-based (number-based) order identification can increase post-choice satisfaction beyond their preference for a store. Furthermore, study 2 provides process evidence that the effect of order identification operates through perceived objectification.

In line with these findings, a follow-up field study provides suggestive evidence of the effect of order identification on store revenue. In this difference-in-differences study, which was

⁴ Seventeen participants did not complete the objectification measure, which results in lower degrees of freedom.

unexpectedly cut short by the COVID-19 pandemic, we tracked the sales of two dining facilities at a large university over two semesters. We introduced name-based order identification to one of these dining facilities in Spring 2020 and examined how this intervention impacts revenue. When we compared sales of pre- versus post-intervention periods, the sales at the control store decreased by about 2%, whereas the sales at the intervention store increased by 5%.⁵ This result suggests that order identification by name might yield a substantive increase in revenue.

Study 3: Moderation by Producer Type (Robot vs. Human)

Study 3 examined the moderating role of producer type: a human or non-human agent (i.e., robot). A robot is a nonliving, non-human, and not-fully-social agent that is not expected to have social perceptions (Gray et al. 2007). Because customers would not expect a robot to be capable of having much of any perception of a customer (as an individual person or as an object), the effect of identifying an order by name (vs. by number) should be mitigated when the producer is a robot (vs. a human).

Method

We randomly assigned 814 participants from an online panel (Mturk) to one of four conditions in a 2 (order identification: counterbalancing of name identification patisserie vs. number identification patisserie) x 2 (producer type: human vs. robot) between-participants design.

Participants imagined buying a box of chocolates. They were presented with descriptions of two patisseries (i.e., Patisserie A and B) that make chocolates on a made-to-order basis. To manipulate order identification, we varied between participants how the two patisseries identified orders (see Web Appendix A). Half of the participants were told that Patisserie A sent the

⁵ Due to the COVID-19 epidemic, we had to cut this study short less than half-way through the semester, which left us with insufficient statistical power to conduct a formal hypothesis test.

producer an order with the customer's first name (order identification by name), whereas Patisserie B processed it by number (order identification by number). In contrast, the other half were told the opposite: Patisserie A processed an order by number, and Patisserie B did it by name.

In addition to order identification, we manipulated whether the producer was a human or a robot. Half of the participants were told that both patisseries sold chocolates made by a chocolatier, whereas the other half were told that both sold chocolates made by a robot. Participants indicated their preference between the two patisseries by responding to three items: "Which patisserie would be more attractive to you?," "From which patisserie would you like to purchase your chocolates?," and "Which patisserie would you prefer to order your chocolates from?" (1 = definitely A, 7 = definitely B; $\alpha = .98$). Lastly, participants completed two attention check questions asking 1) at which patisserie customers were identified by their first name and 2) who was making chocolates at the two patisseries.

Results and discussion

A total of 719 participants ($M_{\text{age}} = 40$ years, 388 female) passed the two in-study attention check questions and were included in our analyses.⁶ We found a significant effect of order identification ($F(1, 715) = 23.70, p < .001, \eta_p^2 = .03$), which is qualified by the predicted interaction between order identification and producer type ($F(1, 715) = 9.71, p = .002, \eta_p^2 = .01$). When the chocolatier was a human, we replicated the positive effect of order identification by name: participants preferred Patisserie B (vs. Patisserie A) more when it identified an order by name rather than by number ($M_{B_name} = 4.43, SD = 1.86$ vs. $M_{B_number} = 3.34, SD = 1.84; F(1, 715) = 31.76, p < .001, \eta_p^2 = .04$). However, when the chocolatier was a

⁶ For the following studies, we report 1) full information of inclusion criteria in Web Appendix B and 2) analyses without data exclusions in Web Appendix C.

robot, participants' preference for a patisserie was not significantly influenced by order identification type ($M_{B_name} = 3.90$, $SD = 1.79$ vs. $M_{B_number} = 3.66$, $SD = 1.82$; $F(1, 715) = 1.54$, $p = .215$, $\eta_p^2 < .01$).

Study 3 substantiates our proposition that the effect of order identification is moderated by the producer type. When the chocolatier was a human, participants reacted more positively to a patisserie that identified an order by name (vs. number). However, when the chocolatier was a robot, this effect was significantly mitigated. These results support the proposed mechanism of de-objectification because identifying an order by name would not necessarily decrease customers' sense of objectification when the producer is not a human.

STUDY 4: Moderation by the Degree of Personal Identification

Study 4 had three objectives. First, study 4 examined the de-objectification process through moderation by manipulating the amount of personally identifying information given to a producer. It seems possible that asking for more information about the customer than just their first name might make the customer feel treated even more as an individual human being rather than an interchangeable source of profit. Thus, we tested whether asking for additional information about the customer further decreases objectification. Second, study 4 explored the potential role of a privacy concern process, assessing (1) whether privacy concern plays a significant role (countervailing but insufficiently strong to compensate for the de-objectification process) when only the customer's name is asked and (2) whether this process is strengthened when additional information is requested. Lastly, this study explored an alternative explanation—quality inferences. Identifying an order by a customer's name might be associated with high-end brands, and thus participants might have inferred superior product quality from firms using this tactic.

Method

We recruited 402 participants from an online panel (Mturk). We randomly assigned them to one of the four conditions in a 2 (order identification: counterbalancing of name identification patisserie vs. number identification patisserie) x 2 (level of personal identification: name only vs. name plus) between-participants design.

We asked participants to imagine buying a 6-inch chocolate cake and read descriptions of two patisseries (A and B). As in some of the previous studies, we manipulated order identification by varying which of the two patisseries was described as identifying an order by name versus number. In the name-only identification condition, the focal patisserie was described as identifying an order by a customer's first name to the baker. In the name-plus condition, the focal identification patisserie was described as asking participants for their first name plus additional information that they wanted the baker to know (e.g., favorite music or favorite movie). In both conditions, the non-focal patisserie was described as identifying an order by number.

We measured customers' preference between the two patisseries with three-item scale: "Which patisserie would be more attractive to you?," "From which patisserie would you like to purchase a chocolate cake?," and "Which patisserie would you choose to order a chocolate cake from?" ($\alpha = .96$). Participants indicated perceived customer objectification by rating for which patisserie the following descriptions would apply the most: "The baker at ___ would perceive consumers like myself as a mere source of revenue"; "The baker at ___ would give me the impression that I am an interchangeable object rather than a real person"; "The baker at ___ would ignore that I am a human being"; and "The baker at ___ would treat me just as a random customer rather than as an individual" ($\alpha = .95$). For the measures of expected product quality,

participants assessed for which patisserie the following descriptions applied the most: “The baker at ___ would serve a better quality of cake,” “The cake from ___ would be more delicious,” “The cake from ___ would be well-crafted” ($\alpha = .83$). To measure privacy concerns, participants rated for which patisserie the following descriptions applied the most: “Purchasing the cake at ___ would be more likely to violate my privacy,” “Purchasing the cake at ___ would expose me to a greater risk of having my private information sold to other entities without my authorization,” and “Purchasing the cake at ___ would make it more likely that my personal information is used for undesirable purposes” ($\alpha = .97$). All responses were indicated on a 7-point Likert Scale (1 = definitely Patisserie A, 4 = equal for both patisseries, 7 = definitely Patisserie B). We also measured participants’ perceived awareness of the research hypothesis (PARH) scale ($\alpha = .91$; Rubin et al. 2010).⁷ At the end of the study, we included a series of exploratory questions to better understand participants’ thought processes (e.g., “Why did you choose the patisserie you chose?”; see Web Appendix D). Participants completed two in-study attention check questions: 1) in the middle of the product quality items, we asked participants to select the number three if they were paying attention, and 2) after completing the privacy concern items, participants indicated at which patisserie the baker would know for whom he bakes the cake.

Results

Preference for Patisserie

⁷ We conducted a 2 (order identification) x 2 (personal identification) ANOVA on PARH scores, and we did not find any significant effects. Additionally, our key effects held significant after controlling for PARH scores.

A total of 356 participants ($M_{\text{age}} = 36$ years, 190 females) met the predetermined criteria for inclusion.⁸ Replicating our previous studies, we observed a significant effect of order identification. Participants indicated a greater preference for the cake of Patisserie B (vs. Patisserie A) when it identified an order by personal information ($M_{B_personal} = 3.90$, $SD = 1.91$) rather than by number ($M_{B_number} = 3.49$, $SD = 1.88$; $F(1, 352) = 4.08$, $p = .044$, $\eta_p^2 = .01$). We also found a marginal effect of personal information level ($F(1, 352) = 3.05$, $p = .082$, $\eta_p^2 = .01$).⁹ Importantly, the interaction between order identification and level of identification (name only vs. name plus) was not significant ($F(1, 352) < 1$, $p = .818$), suggesting that the amount of personal information did not significantly increase (nor decrease) the effect of order identification on store preference. Thus, whereas identifying an order by name positively affects store preference, asking for additional information does not boost preference further.

Sense of Objectification

Replicating our previous studies, we again found a significant effect of order identification on participants' perceived objectification. Participants expected the baker at Patisserie B to treat them less as an object when that baker identified an order by personal information (either by name or name plus additional information) rather than by number ($M_{B_personal} = 2.87$, $SD = 1.05$ vs. $M_{B_number} = 5.29$, $SD = .94$; $F(1, 352) = 526.30$, $p < .001$, $\eta_p^2 = .60$). In addition, we found the predicted interaction between order identification and level of identification ($F(1, 352) = 4.12$, $p = .043$, $\eta_p^2 = .01$). The effect of identification on perceived objectification was significantly stronger when a patisserie identified an order by name plus

⁸ We excluded participants who did not pass the attention check plus one participant who completed the study in less than 100 seconds. The time cutoff criterion was determined and put in writing prior to the data collection (see Web Appendix B).

⁹ This marginal main effect is difficult to interpret, as it indicates a greater preference for Patisserie B when one of the patisseries, regardless of whether that patisserie is Patisserie A or Patisserie B, asks its customers to provide more information than just their name versus only their name.

additional information ($M_{name\ plus} = 2.73$, $SD = 1.08$ vs. $M_{number} = 5.36$, $SD = .97$; $F(1, 352) = 303.32$, $p < .001$, $\eta_p^2 = .46$) than when the patisserie identified it by name only ($M_{name\ only} = 3.02$, $SD = 1.01$ vs. $M_{number} = 5.22$, $SD = .91$; $F(1, 352) = 224.91$, $p < .001$, $\eta_p^2 = .39$).

Concerns for Privacy Violation

The analysis yielded a countervailing main effect of order identification such that purchasing a cake from Patisserie B (vs. Patisserie A) yielded a greater concerns for privacy when it was described as identifying an order by personal information ($M = 4.94$, $SD = 1.08$) than by an order number ($M = 3.07$, $SD = 1.19$; $F(1, 352) = 263.90$, $p < .001$, $\eta_p^2 = .43$). Importantly, we also found a significant interaction between order identification and identification level ($F(1, 352) = 28.37$, $p < .001$, $\eta_p^2 = .07$). That is, the effect of order identification on privacy concerns was much stronger when an order was identified by name plus additional personal information ($M_{B_name\ plus} = 5.26$, $SD = 1.15$ vs. $M_{B_number} = 2.75$, $SD = 1.35$; $F(1, 352) = 226.36$, $p < .001$, $\eta_p^2 = .39$) compared to when it was identified only by name ($M_{B_name\ only} = 4.63$, $SD = .91$ vs. $M_{B_number} = 3.37$, $SD = .94$; $F(1, 352) = 61.32$, $p < .001$, $\eta_p^2 = .15$). Thus, we found that order identification by name, while yielding an overall positive effect on store preference, does increase privacy concerns. Moreover, whereas asking for more information strengthened the reduction in objectification relative to just asking for one's name, it also strengthened the increase in privacy concerns to such an extent that it resulted in a non-significant interaction on the store preference dependent variable.

Expected Quality of Product

We found a significant effect of order identification on quality inferences. Participants expected that a cake made by Patisserie B (vs. Patisserie A) would have a better quality when it identified an order to the baker by personal information ($M = 4.03$, $SD = .98$) rather than by

number ($M = 3.48$, $SD = 1.05$; $F(1, 352) = 26.86$, $p < .001$, $\eta_p^2 = .07$). The interaction between order identification and level of identification was not significant ($F(1, 352) = 2.70$, $p = .101$, $\eta_p^2 = .01$). To test whether product quality can explain our results, we included it in our mediation analysis that we describe next.

Moderated Mediation Analysis

We conducted a moderated mediation analysis (Model 7; Hayes 2013), which included order identification as the independent variable, identification level as the moderator, store preference as the dependent variable, and three potential mediators (perceived objectification, privacy concern, and perceived quality).

First, we found evidence of a positive indirect effect of perceived objectification. The level of personal identification (name only vs. name plus) moderated the positive indirect effect of order identification (personal vs. non-personal) through perceived objectification ($B_{\text{moderated mediation}} = .06$, $CI_{95\%} [.002, .147]$). The positive indirect effect of order identification through perceived objectification was stronger when customers were asked their name plus additional information ($B_{\text{indirect}} = .39$, $CI_{95\%} [.174, .618]$) compared to their name only ($B_{\text{indirect}} = .33$, $CI_{95\%} [.149, .522]$).

Second, we found evidence of a negative indirect effect of privacy concerns. The level of personal identification (name only vs. name plus) moderated the negative indirect effect of order identification (personal vs. non-personal) through privacy concerns ($B_{\text{moderated mediation}} = -.23$, $CI_{95\%} [-.360, -.114]$). The negative indirect effect of order identification through perceived objectification was stronger when customers were asked their name plus additional information ($B_{\text{indirect}} = -.46$, $CI_{95\%} [-.645, -.277]$) compared to their name only ($B_{\text{indirect}} = -.23$, $CI_{95\%} [-.331, -.141]$).

Third, we did find an indirect effect through product quality but it was not moderated by the level of identification ($B_{\text{moderated mediation}} = .19$, $CI_{95\%} [-.037, .413]$). The positive indirect effect via product quality was similarly significant in both name plus ($B_{\text{indirect}} = .39$, $CI_{95\%} [.216, .575]$) and name-only conditions ($B_{\text{indirect}} = .20$, $CI_{95\%} [.056, .349]$). The residual effect of order identification (i.e., the remaining effect after accounting for the three indirect paths discussed above) was not significant ($B_{\text{indirect}} = -.10$, $CI_{95\%} [-.349, .144]$).

Discussion

Study 4 lends converging evidence for the order identification effect and demonstrates the mediating role of perceived objectification, even after controlling for expected product quality (and perceived privacy violation). Importantly, we also found evidence of the countervailing negative mediating effect of privacy concerns. We found that identifying an order merely by customers' first name can elicit a sense of privacy violation, even though customers sharing their first name is common, does not allow for unique identification, and can easily be faked or changed.

Furthermore, we found that asking for additional personal information (beyond just a name) further decreases consumers' sense of objectification, supporting our process; but we also found that it leads to greater privacy concerns. Thus, these two conflicting effects lead to an absence of a direct effect of the amount of identifying information requested. That is, asking for more personal information about customers did *not* strengthen preference for the store. These results suggest that, despite the overall positive effect, order identification does trigger some negative reactions through privacy concerns and that this negative process is strengthened greatly by asking for more information than just a first name. Thus, this pattern of effects provides interesting theoretical insight by highlighting a situation in which two processes working in

opposite directions together produce a null effect on the dependent variable (Zhao, Lynch, and Chen 2010). In this case, the mediated null effect is the interaction between order identification and level of identification on preference.

Studies 5A and 5B: Moderation by Relative Importance of Privacy (vs. Feelings of De-objectification)

Given that order identification by name can engender privacy concerns, we predict that the positive effect of order identification by name might eventually reverse when people value protecting their privacy over feeling less objectified. Studies 5a and 5b were designed to test this prediction. Study 5a was designed to provide a direct process test by measuring individual differences in importance of privacy protection (vs. de-objectification) and assessing whether those individual differences moderate the effect of order identification. Study 5b manipulated people's need for privacy protection by asking participants to think about buying a potentially embarrassing product (e.g., STD medicine). When customers are making an embarrassing purchase, they are concerned about being judged negatively by others, which provokes negative feelings (Dahl et al. 2001). Given such self-consciousness of social evaluations, customers who purchase an embarrassing product should value privacy more and care relatively less about being objectified.

Study 5A: Individual Difference in Importance of De-objectification (vs. Privacy)

Method

We presented 304 participants from an online panel (Mturk) with information about two patisseries (Patisserie A and B). As in previous studies, we varied between participants which of the two patisseries used name-based or number-based order identification. Participants indicated their relative preference between the two patisseries by using similar items as in study 4 (1 = definitely A, 4 = about equally, 7 = definitely B; $\alpha = .98$). After completing an attention check

question as in our previous studies (see Web Appendix B), participants assessed the relative importance of personal privacy versus de-objectification (“In general, which factor is more important to you?”; 1 = It is more important to make sure that my privacy is not violated, 7 = It is more important to be treated as an individual person rather than an interchangeable source of income). A higher number indicates greater importance of de-objectification over privacy.

Results

A total of 281 participants ($M_{\text{age}} = 40$ years, 140 female) passed the in-study attention check. We conducted a regression analysis on patisserie preference with order identification, relative importance of privacy protection (vs. de-objectification; mean-centered) and their interaction as independent variables. We found a main effect of order identification ($B = .61, t = 7.54, p < .001$) and a main effect of relative importance of deobjectification over privacy ($B = .09, t = 2.16, p = .031$).¹⁰ More importantly, we found a significant interaction between order identification and relative importance of privacy protection versus de-objectification ($B = .47, t = 10.75, p < .001$; Figure 2). Participants who indicated relatively greater importance on privacy protection (-1 SD) had a greater preference for Patisserie B (vs. Patisserie A) when it identified an order by number (vs. name; $B = -.26, t = 2.29, p = .023$). Participants who indicated relatively more importance on de-objectification (+1 SD) had a greater preference for Patisserie B (vs. Patisserie A) when it identified an order by name (vs. number; $B = 1.49, t = 12.91, p < .001$).

-Figure 2-

Study 5B: Moderation by Privacy Sensitive Purchase

Method

¹⁰ This main effect is difficult to interpret, as it indicates a greater preference for Patisserie B among participants with greater need for de-objectification, regardless of whether Patisserie A or Patisserie B uses customers’ name to identify an order.

A total of 616 participants from an online panel (Mturk) completed this study. To manipulate the need for privacy protection, we first asked participants to imagine purchasing a homeopathic medicine either for a sexually transmitted disease (STD; embarrassing purchase condition) or for a food allergy (non-embarrassing purchase condition). We conducted a separate pretest ($N = 120$) to examine whether customers find privacy protection more important than de-objectification when making an embarrassing purchase. Confirming our prediction, participants indicated that protecting their privacy was more important (relative to not being objectified by a pharmacist) when they purchased an STD medicine rather than a food allergy medicine ($M_{STD} = 4.32$, $SD = 2.12$ vs. $M_{allergy} = 3.00$, $SD = 1.91$; $F(1, 118) = 12.78$, $p < .001$, $\eta_p^2 = .10$; see Web Appendix E for details).

In both conditions, participants were presented with descriptions of two homeopathic pharmacies (i.e., Pharmacy A and B). We varied between participants which of the two pharmacies identified an order by name or by number. Similar to previous studies, participants assessed their relative preference between the two pharmacies (“Which homeopathic pharmacy would be more attractive to you?,” “From which homeopathic pharmacy would you like to purchase your [STD/ food allergy] medicine?,” “Which homeopathic pharmacy would you prefer to order your [STD/ food allergy] medicine from?”; 1 = definitely A, 7 = definitely B; $\alpha = .99$). Lastly, participants completed two attention check questions asking 1) at which homeopathic pharmacy customers were identified by their first name and 2) which homeopathic medicine they were purchasing in the scenario.

Results

A total of 454 participants ($M_{age} = 38$ years, 209 female) passed the attention checks. We found a significant main effect of order identification ($F(1, 450) = 8.95$, $p = .003$, $\eta_p^2 = .02$),

qualified by the predicted interaction between order identification and purchase type ($F(1, 450) = 60.95, p < .001, \eta_p^2 = .12$; Figure 3). Confirming the general positive effect of name-based order identification, in the non-embarrassing condition (food allergy), participants exhibited greater preference for Pharmacy B (vs. Pharmacy A) when it identified an order by name ($M_{B_name} = 4.69, SD = 2.14$) rather than by number ($M_{B_number} = 3.74, SD = 2.03; F(1, 450) = 11.23, p < .001, \eta_p^2 = .02$). In the embarrassing condition (STD), however, this pattern was fully reversed: participants had a greater preference for Pharmacy B (vs. Pharmacy A) when it identified an order by number ($M_{B_number} = 5.58, SD = 1.85$) rather than by name ($M_{B_name} = 3.46, SD = 2.35; F(1, 450) = 60.25, p < .001, \eta_p^2 = .12$).

Discussion of Studies 5A and 5B

Studies 5a and 5b tested the underlying process of order identification by name on the firm by identifying privacy concern as a key countervailing process that can generate boundary conditions of the generally positive effect. Providing direct process evidence, study 5a demonstrated the moderation by the importance a participant generally places on privacy protection. For customers who place less value on protecting their privacy, we replicated our previous findings that order identification by name enhances customers' preference for the store. For customers who place greater value on protecting their privacy, we found that customers are less likely to prefer the store that identifies an order by name. Similarly, study 5b demonstrated that people are less willing to make a purchase at a pharmacy that identifies an order by a customer's name when they make a more privacy sensitive purchase relative to a less private sensitive purchase. These findings again showed that merely passing on the customer's first name to the producer can generate privacy concerns. In short, studies 5a and 5b underscore that order identification by name does not always have a positive effect on customers' store choices.

-Figure 3-

General Discussion

Six studies examined the effect of order identification by name (vs. by number) on customer-related outcomes, such as retailer preference and service satisfaction. We found an overall positive effect of name-based (vs. number-based) order identification, which we refer to as the Starbucks Effect (studies 1-5b). This effect occurs because name-based (vs. number-based) order identification significantly decreases the perceived objectification of customers (study 2). However, name-based order identification also elicits privacy concerns to a generally weaker extent. Strengthening or weakening either process moderates the generally positive effect of name-based order identification on customer preference (studies 3-5b). For example, when name-based order identification does not necessarily make consumers feel de-objectified, such as when a producer is a robot, the Starbucks Effect is mitigated (study 3). Asking customers to divulge more personal information beyond their first name increases the strength of both paths, the positive path through de-objectification as well as the negative path through privacy concerns (study 4). Lastly, privacy concerns moderate the negative path (studies 5a and 5b): the positive effect on store preference attenuates for customers who chronically have stronger privacy concerns and when customers purchase embarrassing items.

The current research has important implications for retailers, marketers, and service providers. At a concrete level, this research is, to the best of our knowledge, the first direct empirical test of the effect of identifying an order by customers' name on retailer preference, service satisfaction, and/or purchasing behavior. The most closely related research, which examines the effect of using customers' names in marketing communications, suggests that name-based order identification would have a negative effect. We found, however, that name-

based order identification generally has an overall positive effect because it de-objectifies the customer. Our field study demonstrated a seven percent lift in sales at a campus eatery when implementing order identification by name. We also explore several managerially relevant factors that diminish or even reverse this positive effect—such as automated order taking and production by a robot or the selling of embarrassing products. Finally, we showed that asking for personal information beyond the customer’s first name neither enhances nor diminishes the overall positive effect of order identification by name.

At a theoretical level, our work contributes to the nascent literature on objectification of customers and producers (van Osselaer et al. 2020). Our research provides direct empirical evidence for the role of customer objectification as a driver of important business outcomes, such as customer satisfaction and choice of retailer. At a more general level, our studies provide empirical support for the claim that, in this era of industrialization, automation, and globalization, the creation of human connections between customers and producers generates beneficial impacts on customers’ marketplace behavior. The effect of name-based order identification on any purchase decision may often be small relative to, for example, large differences in product features. However, given the very low (perhaps zero) cost of writing (or asking customers to write or type) a name, the mere identification effect seems economically significant. In addition, the effect accumulates across billions of transactions worldwide in many companies and in many industries. Retailers and service providers might benefit even more from name-based order identification over time, as baristas or other producers would learn customers’ names and potentially form more “real” personal relationships. This notion is consistent with the main effect difference between the two coffee shops in our field study (study 2), where we found both a greater sense of de-objectification and greater service satisfaction in coffee shop R (which

was larger than the effect of our short-term intervention). We noticed that R used a name-ordering system before the field study, whereas LC did not (it used an ordering system in which the drink type was written on the cup). Of course, we cannot say this with certainty, but it is possible that the more personal interactions engendered by a name-ordering system over time created even stronger effects than the immediate effects we documented in our studies.

Our research also contributes to the literature on consumer privacy by focusing on the novel context of order identification. We found that privacy concerns play a significant role when customers are asked to give their first name, but these concerns do not seem to be the main driver of customer responses in this context. In fact, our research suggests that there can be a cost or flip-side to privacy. Privacy comes with anonymity, which inhibits service providers and producers from recognizing customers as individual persons beyond interchangeable sources of profit. Treating a customer as a person is helped by requesting and volunteering some personal information such as a first name.

Although our findings lend considerable support for our perspective on the name-based order identification effect, one alternative account may merit discussion. It could be argued that personal identification is often used by high-end brands and serves as a signal for high product quality, which may engender the positive effect of name-based order identification. In study 3, we indeed found that order identification by name increased perceived product quality; however, the indirect effect via perceived objectification remained significant even after controlling for inferred product quality. This result suggests that although the account of product quality can explain the effect of order identification to some extent, perceived objectification drives this effect beyond product quality.

In sum, the current research explores the effect of order identification by name and its psychological mechanisms on customer evaluations of retailers. Customers appreciate being identified as an individual rather than treated as a mere source of profit. By identifying an order by customers' name, retailers and service providers can cultivate more meaningful and personal relationships with their customers and ultimately help the firm; however, they must also recognize that it can hurt the firm when it raises customer concerns for privacy.

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Figure 1: Summary of Theoretical Framework

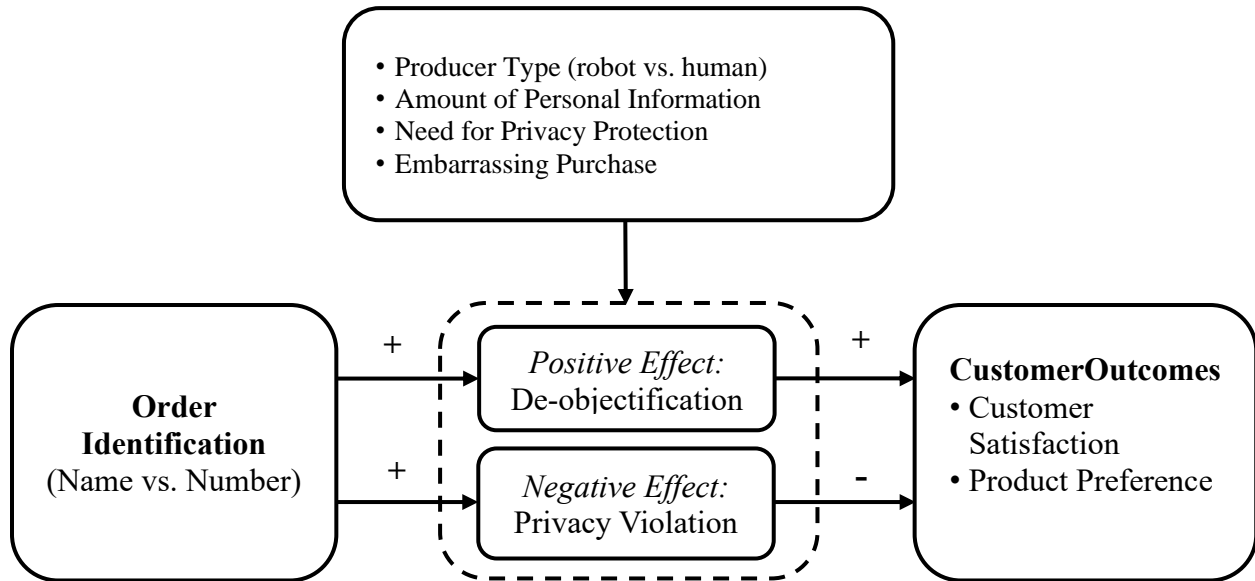


Figure 2. Moderation by Relative Importance of De-objectification (vs. Privacy)

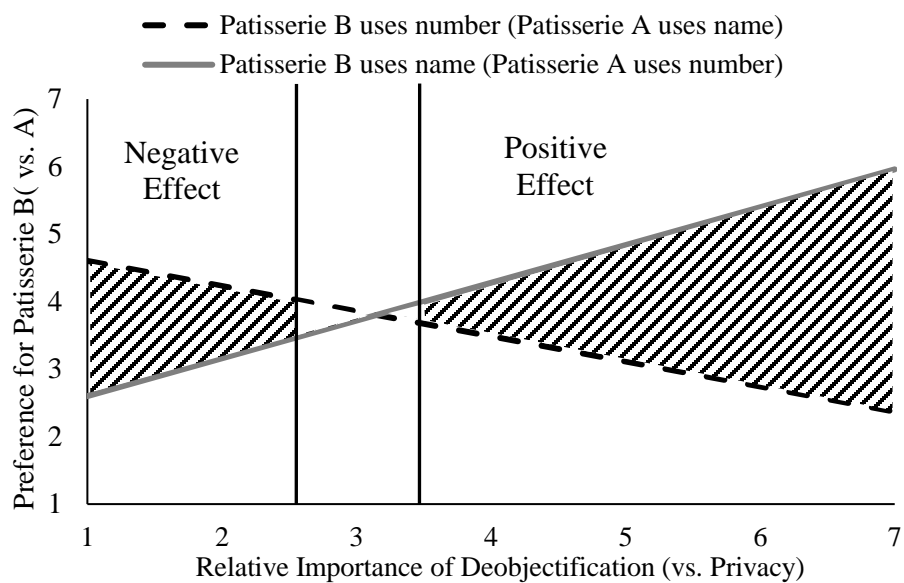
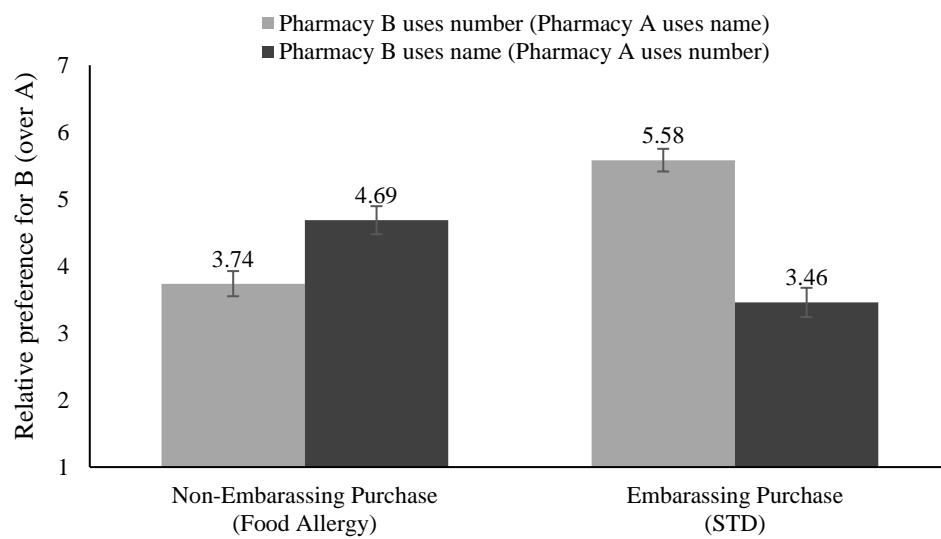


Figure 3. Moderation by Embarrassing Nature of a Purchase



WEB APPENDIX A: STIMULI USED IN STUDIES

Study 1

Order Identification Condition 1: Gigi's bakery as identifying an order by *name* and Casey's bakery as identifying an order by *number*

| Gigi's Bakery | Casey's Bakery |
|--|---|
| <p>Gigi's Bakery is a French inspired pastry shop featuring fine baked goods. At Gigi's Bakery, all cookies are baked on a made-to-order basis.</p> <p>When you place an order, it will be sent to Gigi with an order number.</p> | <p>Casey's Bakery specializes in artisanal European pastry and delectable desserts. At Casey's all cookies are baked on a made-to-order basis.</p> <p>When you place an order, it will be sent to Casey with your first name so that she will know for whom she is baking cookies.</p> |

Order Identification Condition 2: Gigi's bakery as identifying an order by *name* and Casey's bakery as identifying an order by *number*

| Gigi's Bakery | Casey's Bakery |
|---|--|
| <p>Gigi's Bakery is a French inspired pastry shop featuring fine baked goods. At Gigi's Bakery, all cookies are baked on a made-to-order basis.</p> <p>When you place an order, it will be sent to Gigi with your first name so that she will know for whom she is baking cookies.</p> | <p>Casey's Bakery specializes in artisanal European pastry and delectable desserts. At Casey's all cookies are baked on a made-to-order basis.</p> <p>When you place an order, it will be sent to Casey with an order number.</p> |

Study 3

Robot Producer Condition

Order Identification Condition 1: Patisserie A as identifying an order by *name* and Patisserie B as identifying an order by *number*

| Patisserie A | Patisserie B |
|--|---|
| <p>Patisserie A is a <i>fully automated bakery that creates gourmet chocolates</i>. At Patisserie A, chocolates are all made by a robot on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the robot with your first name</i>. So, the robot will know for whom it is making chocolates.</p> | <p>Patisserie B is a <i>fully automated bakery specialized in high-end chocolates</i>. At Patisserie B, chocolates are all made by a robot on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the robot with your order number</i>.</p> |

Order Identification Condition 2: Patisserie A as identifying an order by *number* and Patisserie B as identifying an order by *name*

| Patisserie A | Patisserie B |
|--|---|
| <p>Patisserie A is a <i>fully automated bakery that creates gourmet chocolates</i>. At Patisserie A, chocolates are all made by a robot on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the robot with your order number</i>.</p> | <p>Patisserie B is a <i>fully automated bakery specialized in high-end chocolates</i>. At Patisserie B, chocolates are all made by a robot on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the robot with your first name</i>. So, the robot will know for whom it is making chocolates.</p> |

Human Producer Condition

Order Identification Condition 1: Patisserie A as identifying an order by *name* and Patisserie B as identifying an order by *number*

| Patisserie A | Patisserie B |
|---|--|
| <p>Patisserie A is a bakery that creates gourmet chocolates. At Patisserie A, chocolates are all made by a chocolatier on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the chocolatier with your first name</i>. So, the chocolatier will know for whom he is making chocolates.</p> | <p>Patisserie B is a bakery specialized in high-end chocolates. At Patisserie B, chocolates are all made by a chocolatier on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the chocolatier with your order number</i>.</p> |

Order Identification Condition 2: Patisserie A as identifying an order by *number* and Patisserie B as identifying an order by *name*

| Patisserie A | Patisserie B |
|---|--|
| <p>Patisserie A is a bakery that creates gourmet chocolates. At Patisserie A, chocolates are all made by a chocolatier on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the chocolatier with your order number</i>.</p> | <p>Patisserie B is a bakery specialized in high-end chocolates. At Patisserie B, chocolates are all made by a chocolatier on a made-to-order basis.</p> <p>When you place an order online, your order will be <i>sent to the chocolatier with your first name</i>. So, the chocolatier will know for whom he is making chocolates.</p> |


Study 4

Name Only Conditions

Order Identification Condition 1: Patisserie A as identifying an order by *name* and Patisserie B as identifying an order by *number*



| <i>Patisserie A</i> | <i>Patisserie B</i> |
|---|--|
| <p><i>Patisserie A</i> offers fine baked goods crafted by bakers trained in the artisanal French tradition. At <i>Patisserie A</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your <i>first name</i> will be directly sent to the baker. Thus, the baker will know for whom he bakes the cake.</p> | <p><i>Patisserie B</i> offers a selection of quality baked goods crafted inspired by European recipes and techniques. At <i>Patisserie B</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your order number will be directly sent to the baker.</p> |
|  <p><i>Patisserie A's</i> chocolate cake (6-inch) is made with smooth delicate mousses.</p> <p><i>Caramel chocolate and hazelnut mousses are layered on a bed of crisp chocolate crunch. The cake is covered with a chocolate glaze and milk chocolate decorations.</i></p> |  <p><i>Patisserie B's</i> chocolate cake (6-inch) is made with rich layers of chocolate-based mousses.</p> <p><i>Layers of chocolate ganache and fluffy chocolate mousse sit on a tasty macaron base. The cake is covered with dark chocolate and topped with luscious chocolate details.</i></p> |

Order Identification Condition 2: Patisserie A as identifying an order by *number* and Patisserie B as identifying an order by *name*



| <i>Patisserie A</i> | <i>Patisserie B</i> |
|--|---|
| <p><i>Patisserie A</i> offers fine baked goods crafted by bakers trained in the artisanal French tradition. At <i>Patisserie A</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your order number will be directly sent to the baker.</p> | <p><i>Patisserie B</i> offers a selection of quality baked goods crafted inspired by European recipes and techniques. At <i>Patisserie B</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your <i>first name</i> will be directly sent to the baker. Thus, the baker will know for whom he bakes the cake.</p> |
|  <p><i>Patisserie A's</i> chocolate cake (6-inch) is made with smooth delicate mousses.</p> <p><i>Caramel chocolate and hazelnut mousses are layered on a bed of crisp chocolate crunch. The cake is covered with a chocolate glaze and milk chocolate decorations.</i></p> |  <p><i>Patisserie B's</i> chocolate cake (6-inch) is made with rich layers of chocolate-based mousses.</p> <p><i>Layers of chocolate ganache and fluffy chocolate mousse sit on a tasty macaron base. The cake is covered with dark chocolate and topped with luscious chocolate details.</i></p> |

Name Plus Additional Information

Order Identification Condition 1: Patisserie A as identifying an order by *name plus additional information* and Patisserie B as identifying an order by *number*

| <i>Patisserie A</i> | <i>Patisserie B</i> |
|---|--|
| <p><i>Patisserie A</i> offers fine baked goods crafted by bakers trained in the artisanal French tradition. At <i>Patisserie A</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your <i>first name and a short description of you</i> will be directly sent to the baker. Thus, the baker will know for whom he bakes the cake.</p> <p>For your description, you could write whatever you want the baker to know about who you are. For instance, you could write about your life motto or your favorite movie or music.</p> | <p><i>Patisserie B</i> offers a selection of quality baked goods crafted inspired by European recipes and techniques. At <i>Patisserie B</i>, all cakes are baked on a post-order production basis. When you place an order, your order number will be directly sent to the baker.</p> |
|  <p><i>Patisserie A's</i> chocolate cake (6-inch) is made with smooth delicate mousses.</p> <p><i>Caramel chocolate and hazelnut mousses are layered on a bed of crisp chocolate crunch. The cake is covered with a chocolate glaze and milk chocolate decorations.</i></p> |  <p><i>Patisserie B's</i> chocolate cake (6-inch) is made with rich layers of chocolate-based mousses.</p> <p><i>Layers of chocolate ganache and fluffy chocolate mousse sit on a tasty macaron base. The cake is covered with dark chocolate and topped with luscious chocolate details.</i></p> |

Order Identification Condition 2: Patisserie A as identifying an order by *number* and Patisserie B as identifying an order by *name plus additional information*

| <i>Patisserie A</i> | <i>Patisserie B</i> |
|---|---|
| <p><i>Patisserie A</i> offers fine baked goods crafted by bakers trained in the artisanal French tradition. At <i>Patisserie A</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your order number will be directly sent to the baker.</p> | <p><i>Patisserie B</i> offers a selection of quality baked goods crafted inspired by European recipes and techniques. At <i>Patisserie B</i>, all cakes are baked on a post-order production basis.</p> <p>When you place an order, your <i>first name and a short description of you</i> will be directly sent to the baker. Thus, the baker will know for whom he bakes the cake.</p> <p>For your description, you could write whatever you want the baker to know about who you are. For instance, you could write about your life motto or your favorite movie or music.</p> |
|  <p><i>Patisserie A's</i> chocolate cake (6-inch) is made with smooth delicate mousses.</p> <p><i>Caramel chocolate and hazelnut mousses are layered on a bed of crisp chocolate crunch. The cake is covered with a chocolate glaze and milk chocolate decorations.</i></p> |  <p><i>Patisserie B's</i> chocolate cake (6-inch) is made with rich layers of chocolate-based mousses.</p> <p><i>Layers of chocolate ganache and fluffy chocolate mousse sit on a tasty macaron base. The cake is covered with dark chocolate and topped with luscious chocolate details.</i></p> |

Study 5A

Order identification Condition 1: Patisserie A as identifying an order by *name* and Patisserie B as identifying an order by *number*

| Patisserie A | Patisserie B |
|--|---|
| <p>Patisserie A is a French inspired pastry shop featuring fine baked products. At Patisserie A, all cakes are made on a made-to-order basis.</p> <p>When you place an order, the person at the counter asks you for your first name and writes it on the order. She then gives the order to the baker. Thus, the baker will know for whom she is baking the cake.</p> | <p>Patisserie B specializes in artisanal European pastry and delectable desserts. At Patisserie B, all cakes are made on a made-to-order basis.</p> <p>When you place an order, the person at the counter writes down your order number. She then gives the order to the baker.</p> |

Order identification Condition 2: Patisserie A as identifying an order by *number* and Patisserie B as identifying an order by *name*

| Patisserie A | Patisserie B |
|---|--|
| <p>Patisserie A is a French inspired pastry shop featuring fine baked products. At Patisserie A, all cakes are made on a made-to-order basis.</p> <p>When you place an order, the person at the counter writes down your order number. She then gives the order to the baker.</p> | <p>Patisserie B specializes in artisanal European pastry and delectable desserts. At Patisserie B, all cakes are made on a made-to-order basis.</p> <p>When you place an order, the person at the counter asks you for your first name and writes it on the order. She then gives the order to the baker. Thus, the baker will know for whom she is baking the cake.</p> |

Study 5B

Embarrassing Purchase Conditions

Imagine that you are purchasing a **homeopathic medicine for the sexually transmitted disease (STD) you are suffering from** and you find two pharmacies that sell this for the same price.

Order Identification Condition 1: Pharmacy A as identifying an order by *name* and Pharmacy B as identifying an order by *number*

| Homeopathic Pharmacy A | Homeopathic Pharmacy B |
|--|---|
| <p>Pharmacy A provides quality homeopathic remedies made by a traditional method. At Pharmacy A, all the medicines are produced on a made-to-order basis.</p> <p>When you place an order, a clerk asks for your first name and writes down your name on your order. Then, she sends the order to the pharmacist formulating your STD medicine. So, the pharmacist will know for whom she is formulating the medicine.</p> | <p>Pharmacy B offers effective homeopathic treatments made with the finest quality ingredients. At Pharmacy B, all the medicines are produced on a made-to-order basis.</p> <p>When you place an order, a clerk writes down your order with an order number. Then, she sends the order to the pharmacist formulating your STD medicine.</p> |

Order Identification Condition 2: Pharmacy A as identifying an order by *number* and Pharmacy B as identifying an order by *name*

| Homeopathic Pharmacy A | Homeopathic Pharmacy B |
|--|---|
| <p>Pharmacy A provides quality homeopathic remedies made by a traditional method. At Pharmacy A, all the medicines are produced only on a made-to-order basis.</p> <p>When you place an order, a clerk writes down your order with an order number. Then, she sends the order to the pharmacist formulating your STD medicine.</p> | <p>Pharmacy B offers effective homeopathic treatments made by the finest quality ingredients. At Pharmacy B, all the medicines are produced only on a made-to-order basis.</p> <p>When you place an order, a clerk asks for your first name and writes down your name on your order. Then, she sends the order to the pharmacist formulating your STD medicine. So, the pharmacist will know for whom she is formulating the medicine.</p> |

Non-Embarrassing Purchase Conditions

Imagine that you are purchasing a **homeopathic medicine for the food allergy you are suffering from** and you find two pharmacies that sell this for the same price.

Order Identification Condition 1: Pharmacy A as identifying an order by *name* and Pharmacy B as identifying an order by *number*

| Homeopathic Pharmacy A | Homeopathic Pharmacy B |
|--|--|
| <p>Pharmacy A provides quality homeopathic remedies made by a traditional method. At Pharmacy A, all the medicines are produced only on a made-to-order basis.</p> <p>When you place an order, a clerk asks for your first name and writes down your name on your order. Then, she sends the order to the pharmacist formulating your food allergy medicine. So, the pharmacist will know for whom she is formulating the medicine.</p> | <p>Pharmacy B offers effective homeopathic treatments made with the finest quality ingredients. At Pharmacy B, all the medicines are produced on a made-to-order basis.</p> <p>When you place an order, a clerk writes down your order with an order number. Then, she sends the order to the pharmacist formulating your food allergy medicine.</p> |

Order Identification Condition 2: Pharmacy A as identifying an order by *number* and Pharmacy B as identifying an order by *name*

| Homeopathic Pharmacy A | Homeopathic Pharmacy B |
|---|--|
| <p>Pharmacy A provides quality homeopathic remedies made by a traditional method. At Pharmacy A, all the medicines are produced only on a made-to-order basis.</p> <p>When you place an order, a clerk writes down your order with an order number. Then, she sends the order to the pharmacist formulating your food allergy medicine.</p> | <p>Pharmacy B offers effective homeopathic treatments made with the finest quality ingredients. At Pharmacy B, all the medicines are produced on a made-to-order basis.</p> <p>When you place an order, a clerk asks for your first name and writes down your name on your order. Then, she sends the order to the pharmacist formulating your food allergy medicine. So, the pharmacist will know for whom she is formulating the medicine</p> |

WEB APPENDIX B: DATA EXCLUSION CRITERIA

Study 1

- 1) Data exclusion: No
- 2) Comprehension check: No

Study 2

- 1) Data exclusion: No
- 2) Comprehension check: No

Study 3

- 1) Data exclusion: Ninety-five participants who failed either of two attention checks were excluded from analyses.
- 2) Attention checks: Participants indicated 1) at which patisserie customers were identified by their first name and 2) who was making chocolates at the two patisseries.

Study 4

- 1) Data exclusion: Forty-five participants who failed either of two attention checks were excluded from analyses. One participant who completed a study in less than the predetermined time cutoff (100 seconds) was excluded.
- 2) Attention checks: Participants indicated 1) at which patisserie the baker would know for whom he bakes the cake and 2) were asked to select the number three if they were paying attention.

Study 5A

- 1) Data exclusion: Twenty-three participants who failed an attention check were excluded from analyses.
- 2) Attention check: Participants indicated at which patisserie an order is sent to the baker with a customer's name.

Study 5B

- 1) Data exclusion: One hundred sixty-two participants who failed either of two attention checks were excluded from analyses.
- 2) Attention checks: Participants indicated 1) at which homeopathic pharmacy customers were identified by their first name and 2) which homeopathic medicine they were purchasing in the scenario.

WEB APPENDIX C: SUPPLEMENTARY ANALYSIS WITH EXCLUDED PARTICIIPANTS

Study 3

| Effect | F | <i>p</i> | Partial Eta Squared |
|--------------------------------|-------|----------|---------------------|
| Producer Type | 1.61 | 0.21 | 0.00 |
| Identification | 18.80 | 0.00 | 0.02 |
| Producer type x Identification | 11.85 | 0.00 | 0.01 |

Study 4

Dependent Variable: Preference

| Effect | F | <i>p</i> | Partial Eta Squared |
|------------------------|------|----------|---------------------|
| Level | 3.13 | 0.08 | 0.01 |
| Identification | 2.75 | 0.10 | 0.01 |
| Level x Identification | 0.14 | 0.71 | 0.00 |

Dependent Variable: Objectification

| Effect | F | <i>p</i> | Partial Eta Squared |
|------------------------|--------|----------|---------------------|
| Level | 0.99 | 0.32 | 0.00 |
| Identification | 419.31 | 0.00 | 0.51 |
| Level x Identification | 2.09 | 0.15 | 0.01 |

Dependent Variable: Privacy violation

| Source | F | <i>p</i> | Partial Eta Squared |
|------------------------|--------|----------|---------------------|
| Level | 0.22 | 0.64 | 0.00 |
| Identification | 226.24 | 0.00 | 0.36 |
| Level x Identification | 17.84 | 0.00 | 0.04 |

Dependent Variable: Product Quality

| Source | F | <i>p</i> | Partial Eta Squared |
|------------------------|-------|----------|---------------------|
| Level | 0.05 | 0.83 | 0.00 |
| Identification | 16.74 | 0.00 | 0.04 |
| Level x Identification | 1.32 | 0.25 | 0.00 |

Study 5A

| | B | <i>t</i> | <i>p</i> |
|-----------------------------|------|----------|----------|
| Identification | 0.53 | 6.36 | 0.00 |
| Importance | 0.08 | 1.74 | 0.08 |
| Identification x Importance | 0.43 | 9.67 | 0.00 |

Study 5B

| Source | F | <i>p</i> | Partial Eta Squared |
|--------------------------------|-------|----------|---------------------|
| Purchase Type | 2.58 | 0.11 | 0.00 |
| Identification | 5.82 | 0.02 | 0.01 |
| Purchase Type x Identification | 54.76 | 0.00 | 0.08 |

WEB APPENDIX D: EXPLORATORY ITEMS (STUDY 4)

- What do you think the purpose of this HIT was?
- What do you think the experimenters expected to find?
- Why did you choose the patisserie you chose?
- Did the fact that the baker in one of the patisseries will know for whom he bakes the cake influence your decision?
- How did the fact that the baker in one of the patisseries will know for whom he bakes the cake influence your choice and why?

WEB APPENDIX E: PRETEST FOR STUDY 5B

We conducted a separate pretest to examine whether people would indeed place greater importance on privacy over objectification when making an embarrassing purchase relative to a non-embarrassing purchase.

Method

One hundred twenty participants ($M_{age} = 37$ years, 65 females) participated in this study. Participants were randomly assigned to either an embarrassing condition or a non-embarrassing condition. Depending on conditions, participants were asked to imagine purchasing a medicine for a sexually transmittable disease (embarrassing condition) or a food allergy (non-embarrassing condition). Next, we asked participants to indicate the relative importance that participants placed on privacy violation over objectification (“In this situation, which of the following factors would be more important to you?”; 1 = It is more important to be treated by a pharmacist as a human being rather than a mere source of revenue, 7 = It is more important to make sure that my privacy is not violated).

Results and Discussion

Participants in the embarrassing condition indicated greater concerns for privacy (over objectification) compared to those in the non-embarrassing condition ($M_{embarrassing} = 4.32$, $SD = 2.12$ vs. $M_{non-embarrassing} = 3.00$, $SD = 1.91$; $F(1, 118) = 12.78$, $p < .001$). This result confirms our prediction that consumers would value privacy relatively more than de-objectification when they make embarrassing purchases (vs. non-embarrassing purchases).