

How Does Authenticity Observed from Service Provider–Consumer Interactions Affect Consumer Engagement and Firm Performance? Evidence from a Field Experiment in a Restaurant Chain

Yixuan Zhang
University of Science and
Technology Beijing
yzhang7@bu.edu

Xiangbin Yan
Guangdong University of
Foreign Studies
xbyan@ustb.edu.cn

Bin Gu*
Boston University
bgu@bu.edu

Abstract

Digital platforms make many firm–customer interactions publicly observable, yet the impact of the authenticity conveyed by service providers in these interactions on future consumers remains unclear. We explore how service provider authenticity, as observed from a third-party perspective, affects subsequent consumer engagement and firm performance. Collaborating with a chain restaurant firm, we employ a mixed-method design combining secondary data analysis and a field experiment. Results indicate that authenticity significantly increases visits to the ordering page, orders, and sales. Guided by interactional justice and attribution theories, we further find that these effects are pronounced in service-failure contexts. Also, the impact of authenticity intensifies when observers witness firm-induced failures and disappears when failures are attributed externally. Our research contributes to the authenticity literature by introducing a third-party observational perspective and revealing the economic value of authenticity on digital service platforms. Practically, our findings provide implications for firms to optimize online operations.

Keywords: Authenticity, Third-party Observations, Online Platform, Consumer Engagement, Firm Performance.

1. Introduction

Consumers today actively seek and prize authenticity in their consumption experiences. Whether choosing products or services, consumers instinctively gravitate toward offerings that feel authentic. In fact, authenticity has increasingly become a decisive factor in purchase decisions. Gilmore and Pine (2007) notably argue that authenticity has even “overtaken quality as

the prevailing purchasing criterion” for consumers. This pervasive demand for authenticity in consumption settings exerts a profound influence on how consumers make decisions and evaluate their satisfaction (Beverland & Farrelly, 2010).

The rise of digital platforms has introduced novel mechanisms for consumers to evaluate authenticity. Traditionally, service provider authenticity has largely been conveyed to consumers through face-to-face interactions (Vredevelde et al., 2018; Becker et al., 2019). On online platforms, however, such interpersonal cues and tangible signals are notably absent. Assessing authenticity becomes more challenging, as consumers need to seek alternative signals before making decisions. Understanding how authenticity is conveyed and its subsequent impact within these digitally mediated contexts has thus become critically important for both theory and practice.

Prior research in online settings has primarily focused on authenticity signals derived from information directly disseminated by service providers, such as advertisements or brand promotions, where the information is strategically crafted and presented directly to consumers (Becker et al., 2019). Additionally, other studies have explored authenticity effects arising from direct online interactions between service providers and consumers, such as personalized one-on-one customer online services (Turel et al., 2013; Jones et al., 2022; Ren et al., 2023). The common premise across these studies is to examine how service provider authenticity influences the consumers participating in the interactions. Notably, a valuable yet underexplored authenticity signal is from third-party observation of service interactions. Digital platforms inherently allow certain interactions to be publicly visible, allowing potential consumers beyond those directly involved to observe these exchanges (Ba et al., 2002). This implies that the authenticity a service

* Corresponding author

provider displays when interacting with one customer can serve as a signal to other potential observers.

In this research, we shift the focus to third-party observers, who are not directly involved in the interaction but assess authenticity from the periphery as potential customers. We argue that on digital platforms, the authenticity displayed by service providers in interactions with other consumers influences not only the customers directly involved but also, importantly, shapes the engagement of future consumers. We extend the authenticity literature by examining the following research question: *how does the authenticity a service provider exhibits in interactions with other customers affect subsequent consumer engagement and firm performance?*

We collaborated with a chain restaurant firm operating multiple stores to address our research question. On the firm's online food-delivery platform, customers can post reviews after placing an order, and store managers publicly respond to these reviews. This setting provides a natural context for examining authenticity effects from a third-party observational perspective. Initially, we performed secondary data analyses using historical performance data provided by the restaurant chain. Next, in collaboration with this partner firm, we implemented a four-month field experiment to establish causality. For the stores in our treatment condition, we introduced an authenticity intervention by customizing the firm's existing AI-driven system for managerial response. We then tracked subsequent consumer engagement and sales performance across the restaurants.

Our empirical investigation reveals three notable findings. First, the authenticity demonstrated by service providers in their interactions with other consumers enhances subsequent consumer engagement and firm performance. Second, we further examine the underlying mechanisms through the lenses of interactional justice and attribution theories. We find that the positive effect of observed authenticity is especially pronounced in service failure situations, that is, when the observed interaction involves the service provider addressing a failure or complaint. This finding indicates that when service failures occur, observers value authentic interactions, viewing them as signals of the firm's commitment to interactional justice. Third, we find that when observed service failures are attributed to the firm, the positive effects of authenticity are amplified. Conversely, if service failures result from uncontrollable external factors, the impact of authenticity becomes negligible.

This study offers several theoretical and empirical contributions. First, we contribute to the authenticity literature by introducing a third-party observational perspective, providing novel insights into how

authenticity is conveyed and its subsequent influence on digital service markets. Second, drawing on interactional justice theory, we explore how authenticity acts as a crucial recovery mechanism within contexts involving service failures. Service failures typically increase potential customers' sensitivity toward interactional justice. In such scenarios, authentic behaviors by service providers become essential for restoring trust in the firm's commitment to justice, thereby improving customers' willingness to engage and converting their intentions into actual purchases. Third, we leverage insights from attribution theory to highlight the significance of responsibility for service failures in shaping observers' authenticity assessments. Through integrating authenticity within the interactional justice and attribution theoretical framework, our research enriches our understanding of the mechanisms and effects associated with authenticity. Our findings offer actionable implications for firms to leverage the potential economic value of service provider authenticity on future consumers, further facilitating the optimization of service operations and management practices on digital platforms.

2. Literature review

We summarize existing authenticity research in consumption contexts. We find that consumers observe authenticity primarily through three possible pathways: (1) authenticity cues directly presented by the provider (e.g., advertising, brand image, corporate social responsibility initiatives), (2) consumers' direct interactions with the provider (including offline service encounters and online communications), and (3) third-party observation of interactions between other consumers and the provider.

First, firms actively shape consumer perceptions of authenticity through communications and signals directly controlled by the firm. Existing research has found that cues such as brand stories (Beverland, 2006; Cinelli et al., 2019), advertising content (Becker et al., 2019), and corporate social responsibility (CSR) actions (Joo et al., 2019) help foster authenticity signals. In these scenarios, consumers do not need direct interaction with the firm but instead assess authenticity through observing consistency between what providers say and what they do.

Second, consumers also experience authenticity through direct interactions with providers. Such interactions can occur face-to-face or through online one-to-one interactions (Hennig-Thurau et al., 2006; Turel et al., 2013). Vredeveld et al. (2018), for instance, demonstrated that tourists engaging deeply in local cultural activities (e.g., living and working alongside residents) report enhanced cultural authenticity. In

digital channels, Turel et al. (2013) found that perceived authenticity demonstrated by customer service representatives in web-based interactions significantly enhanced consumers' perceptions of information usefulness and satisfaction. Unlike cues presented solely through firm-controlled communications, direct interactions allow consumers to personally verify authenticity through experiential engagement with the firm.

Third-party observations, defined as consumers observing interactions between providers and other consumers, represent another critical pathway for observing authenticity. Gu and Ye (2014) emphasized peer-induced fairness, showing that customers who observe others receiving managerial responses but do not receive one themselves report significantly lower future satisfaction. Hogreve et al. (2019) suggested that resolving disputes openly rather than privately enhances word-of-mouth from virtual present others (VPO). However, existing authenticity literature predominantly focuses on the personal experiences of consumers directly involved in interactions, with limited attention to effects on third-party observers. Therefore, exploring the impact of service provider authenticity observed in public interactions on future consumers has become essential.

3. Theory and hypotheses

3.1. The effects of authenticity

Prior literature examining the effects of authenticity has primarily focused on two streams. The first stream centers on consumer engagement. Previous research consistently finds that when consumers perceive a brand, product, or service as authentic, their trust increases, and their attitudes become more favorable (Kovács et al., 2014; Wang et al., 2017). The second literature stream primarily examines the impact of authenticity on firms' economic-related outcomes. Studies have linked authenticity to improved sales and profitability (Becker et al., 2019).

Building upon cumulative evidence, we contend that authenticity conveyed during publicly visible firm–customer interactions likewise shapes the attitudes and behaviors of third-party observers. When potential customers witness interactions that signal authenticity, they infer greater trustworthiness, improving their intention to purchase or patronize the business. Guided by this reasoning, we develop the following hypotheses:

Hypothesis 1. *The authenticity of the service provider, as observed in interactions with other consumers, is positively associated with (a) subsequent consumer engagement and (b) firm performance.*

3.2. Authenticity in interactional justice theory

Authenticity warrants particular emphasis when firms address service failure issues. Service failure contexts heighten customers' justice concerns, prompting scrutiny of firm responses (Miller et al., 2000). Justice theory differentiates distributive justice (outcome-focused), procedural justice (process-focused), and interactional justice (interpersonal-focused), each emphasizing distinct fairness cues (Colquitt, 2001). Among these, interactional justice is most diagnostic to third-party observers because they lack access to outcomes or internal procedures and must instead infer future treatment from the respectfulness and transparency displayed toward others (Wan & Wyer, 2019). Authenticity signals high levels of interactional justice by demonstrating respect, candor, and accountability (Umashankar et al., 2017). When observers witness the firm addressing others' concerns with authenticity, they infer that the firm possesses transferable goodwill and accountability, which enhances their trust and the likelihood of choosing the firm. Accordingly, we propose hypothesis:

Hypothesis 2. *In service failure contexts, the positive association between the authenticity of service providers as observed in interactions with other consumers and (a) subsequent consumer engagement and (b) firm performance is strengthened.*

3.3. Authenticity in attribution theory

When customers encounter service failures, they typically attempt to identify the underlying causes and explanations to understand why the service failed to meet their expectations, a cognitive process known as attributional reasoning (Weiner, 1985). Prior studies indicate that customer attribution judgments focus significantly on controllability by the service provider (Yoruk et al., 2025). When customers attribute a failure to provider-controlled factors, their negative emotions intensify, generating heightened expectations for accountability and effective recovery. In contrast, when issues are seen as uncontrollable or externally induced, customers exhibit greater tolerance, reducing reliance on managerial authenticity. Consequently, authenticity becomes especially valuable when addressing problems within the firm's control, as it signals to the public a commitment to service quality and recovery capabilities. This leads to our hypothesis:

Hypothesis 3. *The positive association between the authenticity of service providers observed in interactions with other consumers and (a) subsequent consumer engagement and (b) firm performance is stronger when the issue is attributed to the firm than to factors outside its control.*

4. Research methodology

Our research was conducted in partnership with a leading restaurant chain in Beijing. We employed a multi-method empirical approach to ensure that our findings are empirically grounded and causally robust. Specifically, we first leveraged detailed operational and customer data provided by the firm to perform a secondary data analysis. Subsequently, we designed and implemented a field experiment in close collaboration with the firm, enabling rigorous causal inference that clearly attributes observed effects to authenticity.

Our empirical setting is the online food delivery platform used by these chain restaurants, specifically focusing on restaurant managers' public responses to customer reviews posted on the platform. Several unique features make this setting particularly suitable for studying the value of authenticity from a third-party perspective. First, all customer reviews and corresponding managerial responses are publicly accessible, offering a transparent window for potential customers to observe how the firm interacts with prior customers (Gu & Ye, 2014; Chen et al., 2019). Second, managerial responses are inherently reactive, typically generated in reply to customer reviews rather than proactively initiated for promotional purposes. Third, customers in online food delivery contexts experience significant information asymmetry because they lack direct sensory or interpersonal cues (Ba & Pavlou, 2002). As a result, customers must rely heavily on textual information such as reviews and managerial responses to verify service quality, food characteristics, and staff friendliness (Wang & Chaudhry, 2018).

On the food delivery platform, each customer order automatically generates a unique order record at the time of purchase. Upon service completion, customers are invited to share their experiences through online reviews. Only verified customers (i.e., those who have completed the purchase) are permitted to post reviews, ensuring that all feedback comes from genuine transactions and enhancing the credibility of the reviews. Submitting reviews is entirely voluntary for customers. Restaurant managers typically reply to these customer reviews publicly on the platform, creating a visible dialogue around customer feedback. Reviews and managerial responses are displayed chronologically, allowing prospective customers to see prior customer and managerial interactions as they browse each restaurant's page.

5. Secondary data analysis

We obtained detailed transactional data from our partnering firm, covering its restaurant outlets on the online delivery platform over a two-month period. We

constructed a daily-level panel dataset of valid restaurant-day observations.

Our dataset consists of three primary categories of observational indicators. First, we collected daily customer reviews, corresponding managerial responses, and star ratings (ranging from 1 to 5), capturing customer feedback and managerial actions. Second, we acquired financial performance data, specifically including the number of orders and sales. Third, we also captured subsequent consumer engagement metrics, such as visits to the ordering interface.

5.1. Measurement of authenticity

Our primary variable of interest is the authenticity of managerial responses. Recent research positions the "LLM-as-a-Judge" paradigm as an advanced approach for open-ended evaluation tasks, providing a reliable substitute for traditional expert-based assessments (Zheng et al., 2023; Gu et al., 2024). Accordingly, we adopt this approach to quantify the authenticity of each managerial response.

We developed a reliable "LLM-as-a-Judge" framework tailored to our research context. We base our evaluation on six theoretically grounded dimensions of authenticity (accuracy, connectedness, integrity, legitimacy, originality, and proficiency) (Nunes et al., 2021). Each dimension captures a distinct aspect of authenticity (e.g., *accuracy* reflects whether the reply is transparent and reliable in addressing the customer's concerns). Our objective is to utilize large language models (LLMs) to assess and rate each dimension of authenticity on a scale from 0 (not at all authentic) to 1 (fully authentic).

Finally, we aggregated these response-level scores to match our daily analysis granularity. For each store-day, we calculated the average authenticity of managerial responses by taking the mean authenticity score of the five most recent responses posted by the store's managers on or before that day.

We focus on the most recent five managerial replies for two complementary reasons. First, sequential-choice research shows that readers allocate most of their attention to the first few opinions, and the influence of each additional review falls sharply thereafter (Godes & Silva, 2012). Second, because most food-delivery orders are placed via smartphones, customers typically access reviews through mobile screens. The form factor of mobile phones limits the visible information set, as smaller screens and on-the-go usage naturally limit shoppers to reading only a handful of opinions (Lee et al., 2020; Liu et al., 2024). Thus, averaging authenticity scores across the five latest responses at the store-day level effectively captures the interactions most likely to be observed by prospective customers, ensuring that our

measure reflects their actual browsing behavior and attention patterns.

5.2. Empirical estimation

We employ a two-way fixed effects panel regression model, controlling for both store-level fixed effects (a_i) and date-level fixed effects (Day_t), as specified in Equation (1).

$$\ln(y_{i,t}^p) = \beta_0 + \beta_1 \text{Authenticity}_{i,t-1} + \delta P_{i,t-1} + a_i + Day_t + \varepsilon_{i,t} \quad (1)$$

Where p denotes the three measures of our dependent variables, including subsequent consumer engagement (i.e., *enter number*) and firm performance (i.e., *order number* and *sales*). Consistent with prior studies, each dependent variable is log-transformed (Gu & Ye, 2014; Chen et al., 2019). We lag authenticity and all control variables by one period to mitigate potential endogeneity concerns and ensure predictors temporally precede outcomes (Goh et al., 2013).

Our control vector ($P_{i,t-1}$) includes review characteristics (i.e., *review length*, *review volume*, *previous rating*, *negative review percentage*), managerial response features (i.e., *response length*, *response volume*) and firm reputation as captured by *store rating* (Lu et al., 2013; Xie et al., 2017; Chen et al., 2019; Ravichandran & Deng, 2023; Deng & Ravichandran, 2024). We also cluster standard errors ($\varepsilon_{i,t}$) at the store level to correct for potential serial correlation and heteroskedasticity.

5.3. Results

Table 1 presents the results of our main regression analyses. Specifically, column (1) shows a significant and positive effect of authenticity on consumer engagement, measured by the number of consumers entering the ordering page ($\beta = 0.558, p < 0.01$).

For firm-level outcomes, the impact remains strongly positive and significant. Column (2) demonstrates that authenticity significantly increases actual orders placed ($\beta = 0.458, p < 0.01$), suggesting that authentic managerial interactions attract initial consumer interest and convert this interest into tangible purchase actions. Additionally, column (3) further confirms that authenticity significantly enhances overall sales performance ($\beta = 0.398, p < 0.01$).

These findings provide support for Hypothesis 1, indicating that when consumers observe greater authenticity in managerial responses to interactions with other customers, they become more likely to subsequently engage with and purchase from the firm.

Table 1. Main regression results.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>Authenticity</i> _{<i>i,t-1</i>}	0.558*** (0.180)	0.458*** (0.115)	0.398*** (0.138)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	2013	2013	2013
<i>R-squared</i>	0.916	0.881	0.766

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$. Due to page limitations, control variable results are omitted.

Building on these baseline effects, we explore how service failure scenarios shape the effects of authenticity observed from service providers' interactions. We construct a variable (*Service_failure*) as an indicator capturing contexts in which service failures occurred, assigning it a value of 1 if at least one negative customer review appeared among the five most recent reviews.

Results confirm Hypothesis 2, indicating that service failure conditions significantly strengthen the positive impact of authenticity. As shown in **Table 2**, authenticity has a significantly positive interaction with service failure across enter number ($\beta = 0.365, p < 0.10$), actual orders ($\beta = 0.286, p < 0.05$), and firm sales ($\beta = 0.449, p < 0.05$).

Our results align with interactional justice theory, which underscores the importance of fairness conveyed through interpersonal interactions, particularly in service failure scenarios (Colquitt, 2001). In such contexts, consumers pay close attention to how the firm addresses other customers' negative experiences, interpreting these interactions as meaningful signals of the firm's underlying values. When third-party observers witness clear signals of fairness and respect, this resonates strongly with their sense of interactional justice. Consequently, observers develop enhanced trust and greater confidence in the firm, positively shaping their subsequent interactions and engagement.

Table 2. Heterogeneous effects of authenticity in service failure.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>Authenticity</i> _{<i>i,t-1</i>}	0.346* (0.171)	0.292** (0.108)	0.137 (0.171)
<i>Authenticity</i> _{<i>i,t-1</i>} \times <i>Service_failure</i> _{<i>i,t-1</i>}	0.365* (0.208)	0.286** (0.125)	0.449** (0.184)
<i>Service_failure</i> _{<i>i,t-1</i>}	-0.249* (0.143)	-0.191** (0.079)	-0.310** (0.134)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	2013	2013	2013
<i>R-squared</i>	0.917	0.881	0.766

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

We further examine whether the effects of authenticity differ when service failures are attributable to different responsible parties. We measure taste-related issues such that if any of the five most recent reviews for store i on a given day has a “*Taste Rating*” less than or equal to 3, the variable takes the value 1, and 0 otherwise. Similarly, we identify package-related issues by assigning a value of 1 if any of the five most recent reviews for store i on a given day has a “*Package Rating*” less than or equal to 3, and 0 otherwise. Delivery-related issues are operationalized in the same manner, being coded as 1 if any of the five most recent reviews for store i on a given day has a “*Delivery Rating*” less than or equal to 3, and 0 otherwise.

Table 3. Service failure attributable to different responsible parties.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>Authenticity</i> _{$i,t-1$}	0.252 (0.167)	0.243** (0.110)	0.104 (0.148)
<i>Authenticity</i> _{$i,t-1$} × <i>Taste</i> _{$i,t-1$}	0.495** (0.208)	0.282** (0.130)	0.496*** (0.165)
<i>Taste</i> _{$i,t-1$}	-0.368** (0.149)	-0.207** (0.090)	-0.360*** (0.119)
<i>Authenticity</i> _{$i,t-1$} × <i>Package</i> _{$i,t-1$}	0.110 (0.165)	0.242* (0.136)	0.547** (0.213)
<i>Package</i> _{$i,t-1$}	-0.047 (0.115)	-0.152 (0.094)	-0.375** (0.152)
<i>Authenticity</i> _{$i,t-1$} × <i>Delivery</i> _{$i,t-1$}	0.243 (0.179)	0.099 (0.167)	-0.340 (0.278)
<i>Delivery</i> _{$i,t-1$}	-0.171 (0.128)	-0.055 (0.118)	0.229 (0.186)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	2013	2013	2013
<i>R-squared</i>	0.918	0.882	0.768

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

As shown in **Table 3**, the interaction between observed service provider authenticity and taste-related service failures is positive and significant across all three outcome measures. This suggests that when consumers attribute failures directly to the firm (taste), higher authenticity of service providers amplifies subsequent consumer engagement and firm performance. Similarly, authenticity’s interaction with packaging failures has significant positive effects on actual orders ($\beta = 0.242, p < 0.10$) and sales ($\beta = 0.547, p < 0.05$). This indicates that authentic managerial responses are effective in mitigating the negative impact of firm-related packaging issues on these economic outcomes. In contrast, for failures attributed externally (delivery-related), authenticity does not significantly

affect any measured outcomes, suggesting that consumers do not rely heavily on managerial authenticity when evaluating incidents beyond the firm’s direct control.

These findings are consistent with our theoretical expectations derived from attribution theory. When customers observe the service failure as resulting from internal firm-related issues (e.g., taste or packaging), they pay closer attention to the firm’s recovery efforts. Authentic managerial responses become critical for rebuilding customer trust and driving favorable outcomes. However, if the failure is attributed to external factors beyond the service provider’s control (e.g., a delivery mishap), customers tend not to hold the firm accountable or to scrutinize its response, resulting in authenticity having no significant impact on outcomes.

6. Field experiment

6.1. Experimental design

In collaboration with our corporate partner, we further conducted a field experiment to identify the causal impact of third-party observed authenticity in managerial responses to online customer reviews on subsequent consumer engagement and firm performance.

Our experiment was implemented over a four-month period. The experiment was conducted at the store level as required by the corporate partner to ensure convenience in operational management. 30 chain restaurant locations participated in our experiment, with 20 assigned to the treatment group and 10 stores serving as controls. Importantly, the firm did not introduce any new initiative during this interval, ensuring that observed changes in outcomes could be attributed to our intervention.

Before the study, the firm originally relied on a platform-deployed AI system to manage responses to online customer reviews. The engine generated replies based on each review’s content and was configured by the firm to automatically publish them. Our experimental intervention was conducted based on this existing system. In the treatment group, we deployed a customized AI system designed to generate managerial responses with authenticity. This was achieved by embedding specialized prompt instructions based on the authenticity theoretical framework, which guided the AI to explicitly incorporate authenticity cues into each response.

Due to geographic distribution differences among stores and the firm’s practical preference for including certain flagship stores in the treatment group, inevitable baseline variations existed between the experimental

and control groups in aspects such as foot traffic and baseline performance metrics. However, our identification strategy addressed this concern by launching the authenticity intervention simultaneously in all treatment stores and employing a difference-in-differences analytical approach. We compared each store's outcomes in the two months before the intervention to its outcomes during the experimental period. This within-store pre-post comparison effectively controlled for any time-invariant store-level characteristics and baseline differences across locations.

6.2. Data description and empirical estimation

We adopt a difference-in-differences (DID) approach to empirically estimate the causal effects of authenticity intervention on subsequent consumer engagement and firm performance. Leveraging longitudinal daily data from treatment and control stores, we estimate the following model shown in Equation (2):

$$\ln(Y)_{i,t+1} = \beta Post_{i,t} \times Treatment_i + \delta X_{i,t} + \mu_i + Day_t + \varepsilon_{i,t} \quad (2)$$

Where i indexes the store and t indexes the day. $Treatment_i$ is a binary indicator for whether store i was assigned to the treatment group. $Post_{i,t}$ is a time dummy equal to 1 for dates on or after the authenticity intervention and zero otherwise. The interaction term $Post_{i,t} \times Treatment_i$, thus captures the differential change in outcomes for treated stores after the introduction of authentic responses, relative to the change in control stores. The coefficient β on this interaction is the DID estimator, representing the causal effect of the authenticity treatment on the outcome.

Y represents our dependent variables, including visits to the ordering page (*enter num*) and number of orders placed (*order num*), and sales. To allow for potential delays in managerial response, we examine next-day outcomes, meaning the dependent variable is the log-transformed outcome on day $t + 1$ for store i given conditions on day t (Goh et al., 2013; Gu & Ye, 2014).

We also include control variables (X) related to customer reviews, managerial responses, and store ratings, aligning with our secondary data analysis. Store fixed effects (μ_i) absorb all time-invariant differences across stores (e.g., location, baseline quality), and day fixed effects (Day_t) control for shocks common to all stores on a given day (e.g., seasonal trends).

6.3. Results

Before conducting our DID analysis, it is crucial to validate the parallel trends assumption. Following prior IS research, we adopt a relative time model illustrated in Equation (3) by interacting weekly time dummies with the treatment indicator (Chen et al., 2019; Liang et al., 2025). This specification replaces the single post-treatment indicator with a series of interaction terms between the treatment group indicator and time-period dummies (Angrist and Pischke, 2008).

$$\ln(Y)_{i,t+1} = \sum_{k \neq -1} \beta_k W_{k,t} \times Treatment_i + \delta X_{i,t} + \mu_i + Day_t + \varepsilon_{i,t} \quad (3)$$

Where $W_{k,t}$ indicates weekly time dummies relative to the intervention date. The coefficients β capture the effect of treatment in week k relative to that baseline. We include store fixed effects (μ_i) and time fixed effects (Day_t). X represents control variables, and $\varepsilon_{i,t}$ is the error term.

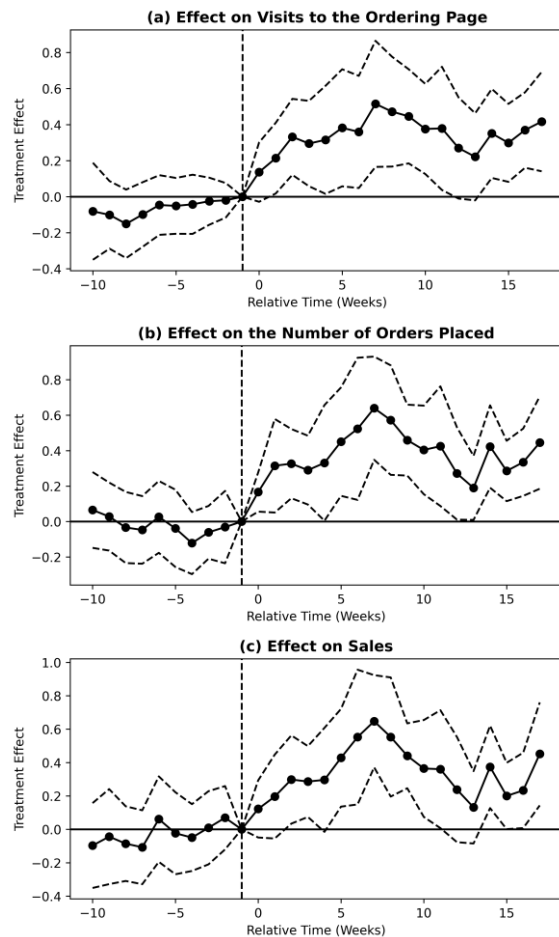


Figure 1. Evolution of treatment effect

Figure 1 presents a visualization of the dynamic treatment effects, with panel (a) corresponding to visits to the ordering page (*Enter Num*), panel (b) to the number of orders placed (*Order Num*), and panel (c) to sales. The *X* axis measures time relative to the intervention date ($t = 0$) in seven-day intervals. We designate period ($t = -1$) as the baseline and mark it with a vertical dashed line. In each panel, the solid line plots the estimated treatment effect for that time interval, and the surrounding dashed lines represent the 95% confidence bands.

All pre-intervention coefficients cluster near zero and are statistically indistinguishable from zero, indicating parallel trends between treated and control stores and supporting our DID identification strategy. After the intervention, the estimated treatment effects rise steadily, becoming statistically significant as time progresses.

Table 4 presents the main regression results from the field experiment, highlighting the significant and positive effects of the DID interaction term ($Post \times Treatment$) across all three outcomes. Specifically, after the implementation of authenticity-oriented managerial responses, we observe significant increases in consumer engagement, including clicks on the ordering page ($\beta = 0.375, p < 0.01$) and the number of orders placed ($\beta = 0.356, p < 0.01$), as well as notable improvements in firm performance, represented by product sales ($\beta = 0.333, p < 0.01$).

These findings affirm our theoretical expectation that authenticity in managerial responses positively shapes observers' judgments, enhancing favorable impressions of the store. Consumers become more inclined to actively engage by visiting the order page and placing orders, ultimately contributing to increased sales for the firm.

Table 4. Main regression results.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>DID_Interaction</i>	0.375*** (0.079)	0.356*** (0.051)	0.333*** (0.065)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	5387	5387	5387
<i>R-squared</i>	0.873	0.834	0.790

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

To examine the moderating role of service failure, we included an interaction term between the DID interaction and service failure context. Specifically, service failure was measured consistently with prior analyses, indicates whether at least one negative review is present among the five most recent reviews. The

results shown in **Table 5** reveal that the coefficients on the term $DID\ interaction \times Service\ Failure$ are positive and significant, indicating that the presence of a service failure context amplifies the beneficial effect of authenticity.

Also, this further supports the interactional justice theory we emphasized, suggesting that authentic service recovery efforts by service providers mitigate negative perceptions of interactional injustice and strengthen consumer goodwill and interest toward the firm.

Table 5. Heterogeneous effects of authenticity in service failure.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>DID_Interaction</i>	0.283*** (0.073)	0.256*** (0.039)	0.215*** (0.053)
<i>DID_Interaction</i> \times <i>Service_failure</i>	0.148** (0.055)	0.159*** (0.044)	0.185*** (0.051)
<i>Service_failure</i> \times <i>Post</i>	-0.033 (0.045)	-0.074* (0.039)	-0.118** (0.045)
<i>Service_failure</i>	-0.051** (0.018)	-0.034 (0.023)	-0.030 (0.024)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	5387	5387	5387
<i>R-squared</i>	0.875	0.835	0.791

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

We further analyzed the moderating role of service failure attribution by interacting the DID interaction term with three distinct sources of failure responsibility: taste, packaging, and delivery.

As shown in **Table 6**, the interaction terms of $DID\ interaction \times Taste$ and $DID\ interaction \times Package$ have a positive and significant impact on subsequent consumer engagement and firm performance. In contrast, the interactions involving delivery-related failures ($DID\ interaction \times Delivery$) were not statistically significant.

These findings highlight the critical role of failure attribution theory in amplifying the positive effects of authenticity, particularly when consumers attribute failures to factors within the service provider's control (e.g., poor taste or inadequate packaging). Authentic managerial responses in these contexts more effectively signal the provider's accountability and genuine willingness to rectify mistakes, building consumer trust and strengthening their subsequent engagement and consumption.

Table 6. Service failure attributable to different responsible parties.

Variables	Enter Num	Order Num	Sales
	(1)	(2)	(3)
<i>DID_Interaction</i>	0.282*** (0.065)	0.250*** (0.036)	0.199*** (0.048)
<i>DID_Interaction</i> <i>× Taste</i>	0.125** (0.060)	0.131*** (0.043)	0.157*** (0.045)
<i>Taste × Post</i>	-0.120* (0.067)	-0.123*** (0.034)	-0.178*** (0.037)
<i>Taste</i>	0.046 (0.049)	0.024 (0.025)	0.042 (0.031)
<i>DID_Interaction</i> <i>× Package</i>	0.093** (0.044)	0.099** (0.037)	0.127*** (0.042)
<i>Package × Post</i>	-0.026 (0.052)	-0.021 (0.037)	-0.042 (0.045)
<i>Package</i>	-0.068 (0.044)	-0.064** (0.031)	-0.072** (0.034)
<i>DID_Interaction</i> <i>× Delivery</i>	-0.061 (0.082)	-0.047 (0.063)	-0.030 (0.082)
<i>Delivery × Post</i>	0.230** (0.101)	0.119* (0.068)	0.121 (0.078)
<i>Delivery</i>	-0.109 (0.072)	-0.018 (0.045)	-0.021 (0.054)
<i>Control</i>	Include	Include	Include
<i>id FE</i>	Yes	Yes	Yes
<i>Day FE</i>	Yes	Yes	Yes
<i>Observations</i>	5387	5387	5387
<i>R-squared</i>	0.877	0.836	0.792

* $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$.

7. Conclusion

Our study provides empirical evidence on how observed service provider authenticity on digital service platforms affects future consumer behavior and firm outcomes. By shifting the focus from direct customer interactions to third-party observations, we introduce a critical yet previously underexplored perspective, enriching our understanding of authenticity mechanisms in online platforms. We find that the effects of authenticity extend well beyond the focal customer directly engaged in interactions. When service providers exhibit authenticity in interactions that are publicly visible on digital platforms, future consumers respond with active engagement that contributes to increased sales. Notably, authenticity proves especially powerful as a recovery mechanism in contexts involving service failures. Such interactions offer observers vital signals about whether a firm adheres to principles of interactional justice, thereby influencing their subsequent evaluations and actions. Furthermore, observers consider the attribution of responsibility for service failures when assessing service provider

authenticity, and this causal attribution critically determines the effectiveness of authenticity.

Our insights broaden authenticity research by integrating third-party observational dynamics and clarifying authenticity effects within the theoretical frameworks of interactional justice and attribution. Managers should recognize the strategic importance of developing authenticity in every publicly observable interaction, particularly when managing service failures. Our findings guide firms to better capitalize on the economic value of authenticity, optimizing their digital platform interaction strategies and overall service management practices.

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