Journal of the Academy of Marketing Science
https://doi.org/10.1007/s11747-025-01114-4

ORIGINAL EMPIRICAL RESEARCH

The role of empathy in providers' online customer complaints management

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Received: 4 July 2024 / Accepted: 30 June 2025
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Abstract

Customers share negative service experiences to complain and warn prospective customers. Our research uses semi-supervised machine learning to fine-tune a BERT (Bidirectional Encoder Representations from Transformers) model, which examines the effects of affective empathy (acknowledging and responding to the complainer's emotions) versus cognitive empathy (demonstrating perspective-taking to understand the complainer's situation) in provider responses to complaints. Specifically, we examine the effects of these responses on prospective customers' reactions. Our two field studies, which cover 12,638 negative reviews on TripAdvisor and 36,478 complaints on Facebook, reveal that cognitive empathy is generally more effective than affective empathy in increasing prospective customers' likes and purchases, particularly when a complaint is formulated concretely. However, affective empathy is more suitable when a complaint is intensely affective. Four experiments confirm that cognitive empathy (vs. affective empathy) leads prospective customers to view providers as more competent, ultimately enhancing their purchase intentions. These insights offer guidelines to providers on how to respond to online customer complaints.

Keywords Online customer complaints · Service complaints management · Affective empathy · Cognitive empathy · BERT models

Customers commonly voice their dissatisfaction with service failures in online reviews and on social media platforms. How providers respond to such complaints is crucial because prospective customers follow these interactions closely. On average, each online complaint and the provider's response is viewed by 825 potential customers (Customer Care Measurement & Consulting 2017). Ineffective responses deter up to 82% of these prospective customers, underscoring the critical impact of complaints management (BrightLocal, 2019). However, current understanding of what constitutes an effective response is limited.

Research on handling online complaints has highlighted several approaches, including offering an explanation (Herhausen et al., 2019), employing a humorous response (i.e.,

Vamsi Kanuri served as Area Editor for this article.

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Published online: 06 August 2025

laughing with the complainer; Béal & Grégoire, 2021) or employing active listening (Herhausen et al., 2023). Among these different types of approaches, an emerging stream of research is exploring the role of empathetic responses (Herhausen et al., 2019, 2023; Golmohammadi et al., 2021). As conventional wisdom would suggest, when something goes wrong, showing empathy should lead to positive perceptions and resolution outcomes (Tran et al., 2024). However, research on the use of empathy in addressing customers' negative experiences in general has yielded mixed results. Although some research finds empathy to be effective (Herhausen et al., 2023), others report it as ineffective (Marinova et al., 2018), or even as triggering adverse customer reactions (Han et al., 2022; Vorauer, 2019). These inconsistent findings may stem from a lack of differentiation between the types of empathy used in provider responses.

Broadly, two main types of empathy have been identified (Simon, 2013; Smith, 2006; see Table 1). *Affective empathy* is defined as "an emotional response that stems from another's emotional state or condition and that is congruent with the other's emotional state or situation" (Eisenberg & Strayer, 1990, p. 5). Accordingly, in marketing research, affective empathy is conceptualized as recognizing and responding emotionally to others' emotions (Hoffman, 1977; Wieseke et al., 2012) and, in the context of responses to online complaints, it often manifests as emotional support (e.g., We are sad to learn about your experience and want you to know that we care about how you feel; Herhausen et al., 2023). In comparison, *cognitive empathy* refers to "the tendency to understand, or the state of understanding others' internal states (i.e., thoughts)" (Clark et al., 2019, p. 168). Marketing research mostly frames it as understanding others' perspectives and addressing their perceived needs and opinions (Hattula et al., 2015; Wieseke et al., 2012). Providers might respond to online complaints using cognitive empathy by saying, for instance: We understand your situation and aim to offer better support. Given the limited amount of research on the effectiveness of the two types of empathy in handling online complaints (see Table 2), our study explores their influence on prospective customers' reactions.

Moreover, in responding to calls for further research (Berger et al., 2020; Johnen & Schnittka, 2019), we examine the underlying mechanism by which cognitive and affective empathy shape prospective customers' reactions. Psychology research suggests that empathy enhances one's ability to interact competently with others (Redmond, 1989). Applying this to our context, we investigate whether a provider's use of cognitive or affective empathy in response to an online complaint influences prospective customers' perceptions of the provider's competence (i.e., the provider's perceived capability, intelligence, and skill in addressing complaints; Cuddy et al., 2008), which in turn has an impact on prospective customers' behaviors.

To achieve this, we conducted five studies. Study 1 analyzes 12,638 complaints on TripAdvisor, integrating provider responses and longitudinal sales data from 347 hotels to assess how cognitive and affective empathy influence

Table 1 Summary of prior research on the effects of responses to online complaints on prospective customers

Study	Method	Response strategy	Findings
Ma et al. (2015)	Field data	Responding vs. not responding	Responding to online complaints enhances the customer–provider relationship with complainers but encourages prospective customers to share more complaints later.
Proserpio and Zervas (2017)	Field data	Responding vs. not responding	Responding to online complaints increases the provider's star rating and review volume.
Wang and Chaudhry (2018)	Field data	Responding vs. not responding	Provider responses stimulate low rating reviews.
Herhausen et al. (2019)	Field data	Affective empathy and explanation	Varying providers' responses with affective empathy and explanation minimizes the virality of high arousal complaints.
Johnen and Schnittka (2019)	Experiments + field data	Accommodative and defensive responses	Defensive responses can increase purchase intention. Effect is greater in hedonic contexts but less in utilitarian situations.
Béal and Grégoire (2021)	Experiments + field data	Humor in response	Affiliative humor rather than aggressive humor increases prospective customers' purchase intentions and retweets.
Golmohammadi et al. (2021)	Field data	Affective empathy, explanation	Responding with greater affective empathy and explanations reduces future complaints and enhances provider value for providers that use closed-exchange response strategy.
Herhausen et al. (2023)	Field data + experiments	Affective empathy and active listening	Providing active listening and empathy in a firm's responses evokes gratitude among customers in high-arousal states.
Our research	Experiments + field data	Affective and cognitive empathy	Cognitive empathy is more effective than affective empathy at enhancing prospective customers' likes and increasing sales, particularly when a complaint is concrete. However, affective empathy is more suitable when a complaint is intensely affective. Cognitive empathy leads prospective customers to view the provider as more competent, and these perceptions ultimately enhance their overall purchase intentions.

Table 2 Summary of conceptualization of empathy in prior research

Authors	Dimensions/aspects of empathy	Conceptualization
Psychological research		
Barrett-Lennard (1981)	Cognitive	Process of experiencing the cognitive state of another person.
Davis (1983)	Cognitive and affective	Ability to react emotionally and non-emotionally to others; comprising the aspects of perspective-taking, empathic concern, fantasy, and personal distress.
Smith (2006)	Cognitive and affective	Empathy refers to sensitivity to, and understanding of, the mental states of others.
Stocks et al. (2011)	Affective	A category of emotional responses that are felt on behalf of others.
Pavey et al. (2012)	Affective	The experience of sympathetic emotions and concern for another person in distress.
Marketing research		
McBane (1995)	Affective and cognitive	The intellectual or imaginative understanding of another's condition or state of mind without actually experiencing that person's feelings, and the ability to feel as the other person does.
Stock and Hoyer (2005)	Affective and cognitive	The ability to understand another person's perspective and to react emotionally to that person.
Argo et al. (2008)	Affective and cognitive	One's ability to experience and understand another person's affective or psychological state.
Fisher, Vandenbosch, and Antia (2008)	Affective	Emotional response congruent with the perceived welfare of another.
Homburg et al. (2009)	Cognitive	The ability to understand and identify with the perspective of the customer.
Wieseke et al. (2012)	Affective and cognitive	The ability to sense and react to a customer's thoughts, feelings, and experiences during a service encounter.
Simon (2013)	Affective and cognitive	Empathy includes embedded manifestations related to perspective-taking, empathic concern, and emotional contagion.
Hattula et al. (2015)	Cognitive	The mental process of taking the consumer's perspective in an effort to understand their needs.
Weißhaar and Huber (2016)	Affective and cognitive	Empathy refers to an intellectual understanding of another person's internal state and goals, and an emotional responsiveness to others' situations.
Research into online complaining		
Herhausen et al. (2019)	Affective	Empathy is a spontaneous affective response.
Golmohammadi et al. (2021)	Affective	Expressing emotional reactions to complainers.
Herhausen et al. (2023)	Affective	Empathy involves connecting emotionally with complaining customers by indicating the sharing of their feelings.

sales performance, a proxy for prospective customer behaviors. This study also tests how intensely affective and concrete complaints moderate these effects. Study 2 replicates the analysis with 36,478 Facebook complaints, using likes in provider responses as an indicator of prospective customer reactions. Studies 3a/3b and 4a/4b comprise four controlled experiments with 1,198 participants, to validate the findings and examine whether perceived competence mediates the relationship between empathy types in provider responses and prospective customers' purchase intention.

This research makes three key contributions to marketing research on online complaints management and empathy. First, it demonstrates that prospective customers respond more positively to cognitive empathy than to affective empathy when it is used in providers' responses. Cognitive empathy consistently leads to better outcomes, increasing sales (Study 1), likes (Study 2), and purchase intentions (Studies 3a, 3b). Second, it highlights how aligning provider responses with complaints' characteristics improves outcomes. Prospective customers react favorably when intensely affective complaints are addressed with affective empathy, and highly concrete complaints with cognitive empathy. Third, it establishes that cognitive (vs. affective) empathy enhances (vs. reduces) perceptions of provider competence, thereby strengthening (vs. weakening) purchase intentions.

The findings offer actionable insights. A 1% increase in affective empathy in provider responses typically results in a 2.40% decline in likes (with a 95% confidence range of 3.12–1.28%) and a 6.14% drop in sales (ranging from 8.40 to .02%). Of note is that when affective empathy is used for intensely affective complaints, these effects are reversed, as this response improves both likes and sales. In contrast, a 1% increase in cognitive empathy leads to a 1.10% rise in likes (ranging from .56 to 1.40%) and a 1.72% increase in sales (ranging from .35 to 5.39%), with even stronger effects for highly concrete complaints. These insights clarify how different types of empathy influence customer reactions, offering practical guidance for optimizing service recovery strategies.

Empathy in online complaints management

Prospective customers assess online complaints and providers' responses in order to anticipate their own service experiences (Relling et al., 2016). Accordingly, providers seek effective response strategies to mitigate risks associated with customer complaints (Johnen & Schnittka, 2019). Research shows that provider responsiveness, regardless of content, reduces subsequent negative posts (Proserpio & Zervas, 2017; Wang & Chaudhry, 2018) and improves sales performance (Kumar et al., 2018), whereas non-responses are the least effective (Herhausen et al., 2019). With regard to the content of these responses, showing empathy is increasingly suggested as a key service recovery strategy (Herhausen et al., 2019; Tran et al., 2024). However, findings regarding the effectiveness of using empathy as a service recovery strategy are mixed, especially in an offline context. Some studies suggest that empathy is effective (Herhausen et al., 2023), whereas others find it ineffective (Marinova et al., 2018) or even capable of provoking negative customer responses (Han et al., 2022).

A potential explanation for these mixed findings may stem from previous psychology and marketing research in offline contexts, which demonstrates that empathy is a multidimensional construct encompassing both emotional and cognitive types (Simon, 2013; Smith, 2006). Affective empathy, defined as an emotional response congruent with another's emotional state (Eisenberg and Strayer 1987), includes empathic concern and emotional contagion (Coke et al., 1978; McBane, 1995). In marketing, affective empathy is conceptualized as recognizing and emotionally responding to others' emotions (Weißhaar & Huber, 2016; Wieseke et al., 2012). Marketing research links affective empathy in online responses to reduced complaint virality (Herhausen et al., 2019) and increased complainer gratitude (Herhausen et al., 2023). In turn, cognitive empathy involves understanding another's mental state (Clark et al., 2019). In a marketing context, it involves offering a perspective-taking approach that addresses customer needs (Hattula et al., 2015; Wieseke et al., 2012). Affective empathy signals emotional attunement, and cognitive empathy conveys understanding and problem-solving capabilities (Hattula et al., 2015). Tables 1 and 2 summarize key research on empathy and provider responses to online complaints.

The effectiveness of the two types of empathy in responding to a complainer is likely to depend on the nature of the complaint. Drawing on social support theory (Boren, 2014), customers can be seen to seek different types of support—emotional, tangible, or informational (Tran et al., 2024). The support sought is reflected in the complainer's writing and shapes prospective customers' expectations of an appropriate response. A highly affective complaint would be likely to lead prospective customers to expect an emotional response congruent with their emotional state (Allard et al., 2020). Conversely, very concrete complaints, which provide concrete situational details, are likely to prompt prospective customers to expect responses that signal understanding and a problem-solving approach (Packard & Berger, 2021).

Perceptions of competence are likely to be central to prospective customers' judgment regarding the appropriateness of a response. Competence reflects a provider's perceived capability, intelligence, and skill in addressing complaints (Cuddy et al., 2008). Providers perceived as competent foster greater purchase intentions and positive word of mouth (Güntürkün et al., 2020; Huang & Ha, 2020). In service recovery, customers assess competence before engaging in the process of interacting with a provider (Marinova et al., 2018), making competence a key driver of prospective customer responses.

Hypotheses development

The relative effects of affective empathy and cognitive empathy

Affective empathy, which acknowledges the emotions of dissatisfied customers (e.g., "I feel your frustration"), serves as emotional support and may de-escalate tensions in online settings (Herhausen et al., 2019). Prospective customers may respond positively to providers who express concern, as this aligns with their emotional expectations (Johnen & Schnittka, 2019). However, affective empathy may backfire by amplifying negative emotions rather than alleviating them (Tone & Tully, 2014). For example, when a provider mirrors a complainer's frustration or distress (e.g., "This situation is truly upsetting"), it can unintentionally reinforce the severity of the issue, escalating prospective customers' concerns rather than reassuring them. Excessive emotional engagement may also be interpreted as a lack of competence in resolving service failures (Han et al., 2022; Vorauer, 2019).

By contrast, cognitive empathy, which conveys an understanding of the complainer's situation and needs, demonstrates a provider's problem-solving orientation (Hattula et al., 2015). Unlike affective empathy, which focuses on shared emotions, cognitive empathy provides informational support that is likely to be more important for prospective customers wishing to assess whether a provider can resolve service failures (Wilder et al., 2014). Specifically, prospective customers are more emotionally removed from a service failure, so may respond more favorably to cognitive empathy that facilitates rational decision-making (Béal et al., 2022; Gilin et al., 2013; Hattula et al., 2015). Similarly, research into offline contexts indicates that problem-solving

strategies are more effective than emotional responses in service recovery (Marinova et al., 2018). Hence:

H1 Cognitive empathy (vs. affective empathy) has a stronger positive effect on prospective customers' reactions (i.e., purchase decisions or "like" reactions to a response).

Tailoring empathetic responses to different types of online complaints

The effectiveness of empathetic responses may also depend on the nature of the complaint. Generally, the support offered should align with the type of distress expressed (Boren, 2014; Tran et al., 2024). Complaints marked by high affective intensity (e.g., anger) signal that the service failure has caused significant emotional distress (Yin et al., 2017). These complaints are contagious and elicit emotional reactions from message recipients and readers, including prospective customers (Herhausen et al., 2019; Ludwig et al., 2013). With such complaints, prospective customers are likely to expect providers to address emotional distress rather than simply provide information or signal perspective-taking (Allard et al., 2020). Instead, emotional empathetic responses are likely to be viewed as demonstrating care for the complaining customer's well-being (Herhausen et al., 2019). Therefore:

H2 Affective (vs. cognitive) empathy as a response to intensely affective complaints elicits more favorable reactions (i.e., purchase decisions; "like" reactions) from prospective customers.

Conversely, when complaints focus on concrete issues, prospective customers seek clarity rather than emotional reassurance. Concrete complaints that describe specific events in detail enable customers to visualize the situation more easily (Packard & Berger, 2021; Semin & Fiedler, 1991). In such cases, perspectives are more easily understood and providers that offer understanding, as well as thought-through and actionable responses, are likely to be viewed as demonstrating competence in resolving the issue (Trötschel et al., 2011; Wilder et al., 2014). Accordingly, the use of cognitive empathy that signals an effort to understand the complainer's needs and promotes a problem-solving approach is likely to be more effective (Hattula et al., 2015). Since affective empathy centers on emotions without necessarily offering a concrete perspective or resolution, it is likely to be less effective in addressing such complaints.

H3 Cognitive (vs. affective) empathy as a response to highly concrete online complaints elicits more favorable reactions (i.e., purchase decisions; "like" reactions) from prospective customers.

Exploring underlying mechanisms

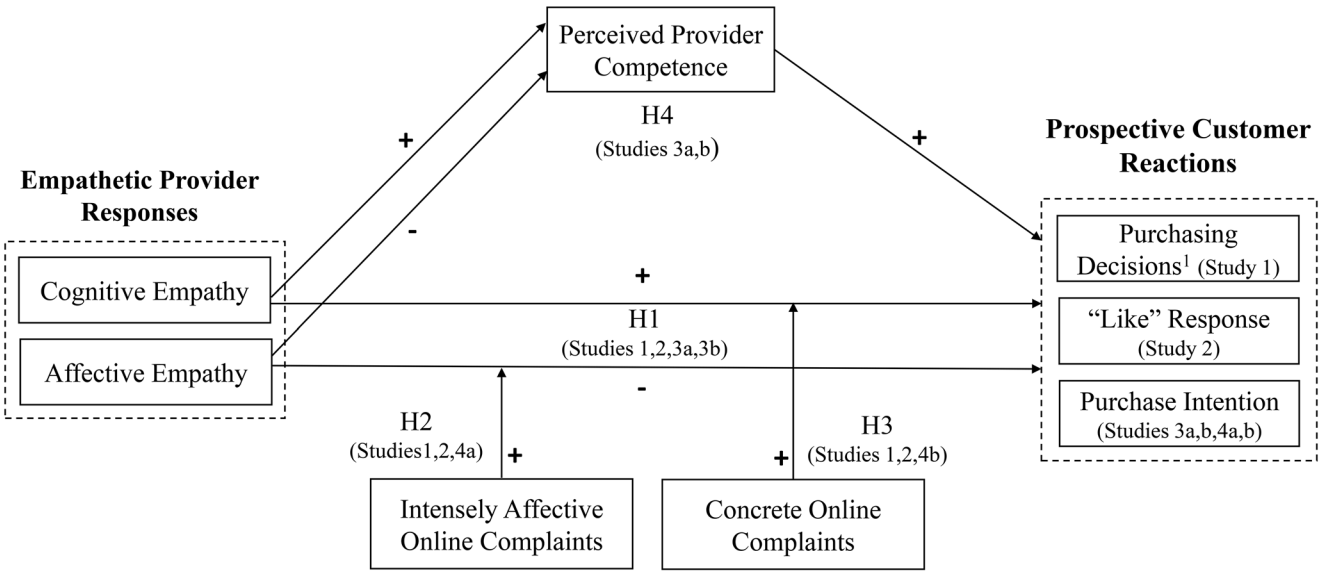
Responding with empathy is likely to influence how prospective customers perceive a provider's competence, which, in turn, shapes the prospective customers' behaviors (Tran et al., 2024). Perceived competence is crucial in service recovery, as customers assess whether engaging with a provider is worth their time and effort (Marinova et al., 2018). Higher perceptions of competence enhance trust and confidence in the provider, increasing purchase intentions and positive word-of-mouth behaviors (Güntürkün et al., 2020; Huang & Ha, 2020).

Psychology research suggests that empathy enhances social interaction competence by fostering understanding and appropriate responses (Håkansson & Montgomery, 2003; Redmond, 1989). By demonstrating perspective-taking, cognitive empathy is likely to signal the provider's ability to address customer concerns effectively (Hattula et al., 2015). Similarly, employees who adopt a customer-centric perspective have been shown to be better at meeting service expectations (Dahl et al., 1999). In contrast, affective empathy conveys mostly emotional engagement without demonstrating problem-solving abilities, which is likely to lead to lower perceptions of competence (Wieseke et al., 2012). Accordingly:

H4 Cognitive (vs. affective) empathy enhances prospective customers' perception of provider competence, which, in turn, increases their positive reactions (i.e., purchase intentions).

Overview of the studies

Figure 1 summarizes our conceptual framework, hypotheses, and studies. Our empirical approach relies on multiple methods: text mining, econometrics, and experiments. Study 1 (textual analyses of online complaints made about service failures in 347 hotels) focuses on the relative effects of cognitive and affective empathy on sales performance (H1), as well as the joint effects between the two types of empathy and the two complaint characteristics: affective intensity (H2) and the concreteness of the complaint (H3). Study 2 (textual analyses of empathetic responses to online complaints regarding 10 major S&P 500 providers) tests the relative effects of cognitive and affective empathy within provider responses on the "like" reactions of prospective customers (H1) and re-tests the joint effects between empathetic response type and complaint characteristics (H2, H3). Studies 3a and 3b examine the mechanisms that explain the relative effects of cognitive and affective empathy on prospective customers' purchase intention (H4) in a controlled experimental setting and rules out alternative mechanisms.



[1]In Study 1, we use the level of objective sales or purchase decisions as a proxy for prospective customer reactions.

Fig. 1 Conceptual framework

Studies 4a and 4b test the joint effects between empathetic response type and complaint characteristics in controlled experimental settings. Web Appendix A, Table WA-1 summarizes our findings and contributions.

Study 1: Empathy and prospective customers' purchasing behavior

In Study 1, we examine the relative effects of cognitive and affective empathy in provider responses to online complaints (TripAdvisor) on sales performance, which is a proxy for prospective customers' purchasing decisions (H1). We also examine the joint effects between empathetic response type and complaint characteristics (H2 and H3).

Description of the data

On TripAdvisor, 95% of customers read online reviews prior to making hotel reservations, and online complaints have significant effects on prospective customers' decision-making (Hollenbeck, 2018). Our study focuses on hotels located in four large cities (Austin, Dallas, Houston, and San Antonio) in Texas, which is a large and heterogeneous state with a range of hotel properties. To test our hypotheses, we scraped online review data from TripAdvisor of 347 hotels ranked with 2 to 5 stars and gathered sales revenue data from 2014Q1–2017Q4. We did not include 1-star hotels and non-standard lodging establishments as they typically do not receive many reviews. Next, we selected 12,638 online complaints (i.e., 1- and 2-star-rated reviews; Chevalier & Mayzlin, 2006) that had received responses, obtaining both the content of the complaint and the hotel's response to it. We aggregated the hotel responses to the hotel-quarter level and merged them with a database of hotel sales data obtained from a consulting provider. The final dataset constituted a panel of 4,328 hotel-quarter observations.

Measures

We used sales performance as a proxy of prospective customers' favorable reactions (purchasing behavior). To measure sales performance, we employed quarterly sales revenues per available room (labeled Revpar), which is an industry-standard measure (Hollenbeck, 2018). All revenues were deflated to 2010 values as a benchmark price level, using the Word Bank GDP deflator.[1] Operationalization, rationales, descriptive information, and the correlation matrix are presented in Web Appendix B, Table WB-1 and Table WB-2.

We used a semi-supervised machine learning approach to develop an automated classifier to measure affective and cognitive empathy. Specifically, the classifier was trained using a semi-supervised learning technique with the support of a pre-trained BERT (Bidirectional Encoder Representations from Transformers) natural language processing model (Liu et al., 2019). BERT has been shown to achieve state-of-the-art performance in different natural language processing tasks (Devlin et al., 2018), and marketing scholars have used it to mine social media reviews for specific content (Hartmann et al., 2021; Skiera et al., 2022). We used

[1] https://data.worldbank.org/indicator/NY.GDP.DEFL.ZS.

BERT's classification task to obtain a score for each construct. The score represents the propensity of specific types of empathy (affective and cognitive) within a provider's given response (see Hartmann et al., 2023). Web Appendix B details our language-modeling approach. After obtaining the propensity score of the affective and cognitive empathy for each response, we divided the sum of the affective empathy and cognitive empathy scores for all responses by the total number of responses in that quarter for each hotel. This gave us the average affective empathy and cognitive empathy propensity scores for each hotel per quarter.

To capture the affective intensity of a complaint, we first mined the number of high arousal negative emotion words (e.g., *angry*, *awful*, *terrible*) in each complaint, using a dictionary from Herhausen et al. (2019). We divided the total number of high arousal negative emotion words by the total number of words per complaint. We then calculated the average high arousal score across all complaints that received responses for each hotel per quarter.

To measure the concreteness of complaints, we mined each complaint using the compilation of widely recognized English lemmas in Brysbaert et al. (2014). The compilation determines whether the terms used signify perceptible entities, such as specific measurements (e.g., "20 minutes"), or descriptive words specifying particular objects (e.g., "coffee" vs. more general terms). We divided the total number of concrete words by the total number of words per complaint and then calculated the average concreteness score across all complaints that received responses for each hotel per quarter.

Furthermore, we controlled for several complaint-, response-, and hotel-related variables that are likely to affect sales revenues. For *complaint-related controls*, we counted the helpfulness votes given to the online complaints for each hotel in each quarter (Ludwig et al., 2013) and included the length of online complaints (a measure of complaint negativity; Umashankar et al., 2017). At the *response level*, we measured the activeness of hotels in addressing complaints by calculating what proportion of complaints received per quarter were responded to by hotels (Hollenbeck, 2018). The length of the response indicated the hotel's level of engagement with the complaints (Tran et al., 2024). Given that providers might direct complainers to other communication channels when dealing with service failures, we created other channels variable which was a quarterly average of the response-level dummies, taking the value 1 if the response mentioned other channels, and 0 if not (based on Herhausen et al., 2019). We also controlled for mentions of compensation and apology in the response. For apology, we used the apology dictionary (Herhausen et al., 2019), operationalizing it as a dummy variable (1 for at least one apology-related word, 0 otherwise). For compensation, we used the compensation dictionary (Herhausen et al., 2019). Since compensation is a concrete monetary offering, we operationalized it as a dummy variable (coded 1 for at least one compensation-related word, 0 otherwise). We then took the average of the score for apology and compensation across all responses for each hotel per quarter. Finally, we included response time, measured as the number of days it took hotels to respond to online complaints.

At the *hotel level*, we controlled for hotel size (number of rooms available in each quarter) because larger hotels have more financial resources to support their marketing campaigns, leading to higher sales (Hollenbeck, 2018). We obtained the average price per quarter from the hotels' websites because higher prices may reduce demand and negatively influence sales. We included a hotel's average TripAdvisor rating and its standard deviation per quarter as a proxy for the time-varying service quality of hotels (Hollenbeck, 2018), and the total number of TripAdvisor reviews for each hotel in each quarter as a proxy of the hotel's popularity (Hollenbeck, 2018). Lastly, we controlled for the level of competition for hotels in the same zip code because competitive intensity might have an impact on providers' recovery strategies and thus influence customers' purchasing decisions (Golmohammadi et al., 2023). For this variable, we used the sales of all hotels per quarter in the same zip code minus the sales of the focal hotel.

Estimation

We used the following equation to test H1, H2, and H3:

$$
\begin{aligned}
Like_{if} = {} & \beta_0 + \beta_1 Cognitive\ Empathy_{if} \\
& + \beta_2 Affective\ Empathy_{if} \\
& + \beta_3 Concrete\ Complaint_{if} \\
& + \beta_4 Intensely\ Affective\ Complaint_{if} \\
& + \beta_5 Cognitive\ Empathy_{if} \\
& \quad \times Concrete\ Complaint_{if} \\
& + \beta_6 Cognitive\ Empathy_{if} \\
& \quad \times Intensely\ Affective\ Complaint_{if} \\
& + \beta_7 Affective\ Empathy_{if} \\
& \quad \times Concrete\ Complaint_{if} \\
& + \beta_8 Affective\ Empathy_{if} \\
& \quad \times Intensely\ Affective\ Complaint_{if} \\
& \quad + Controls_{if}\boldsymbol{\gamma} \\
& \quad + Gaussian\ copula\ terms_{if}\boldsymbol{\pi} + v_f + \epsilon_i
\end{aligned}
$$

where i represents an individual hotel, t is year, c is hotel class (2 to 5 stars), and z is the location by zip code. Thus, $Sales_{itcz}$ is the revenues per available room of hotel i, with ranking class c, located in zip code z, in year t.

$Cognitive\ Empathy_{itcz}$ and $Affective\ Empathy_{itcz}$ are the key independent variables. $Concrete\ Complaint_{itcz}$ and $Intensely\ Affective\ Complaint_{itcz}$ are the two moderators. To test the joint effects of complaint characteristics and empathy type, we created interaction terms for the two types of empathy and concreteness and affective intensity. $Controls_{itcz}$ is a vector of the control variables. Some unobservable variables might affect hotel sales performance, so we controlled for these with a set of fixed effects. First, v_i represents hotel fixed effects, addressing time-invariant attributes such as layouts and organizational culture, which we addressed using a panel data fixed-effect estimator. Second, v_t is a set of year dummies, which we included in the model to account for fluctuations in the socioeconomic environment. Third, v_c and v_z refer to the hotel class and location, respectively, the effects of which were captured in the hotel fixed-effect estimator.

Endogeneity

In order to infer causal effects of the types of empathy on customers' reactions (i.e., sales performance), we needed to address potential endogeneity problems. Specifically, there may be relevant but unobservable factors at the macro level that influence the provider's sales performance and cause biased results. For example, a change in local government policy regarding the hospitality industry (e.g., increased taxes; Rikayana, 2020) or the competition/collaboration of hotels of the same ranking (e.g., hotels in the same regions may compete/collaborate with each other; Ingram & Roberts, 2000) may affect sales performance but cannot be directly addressed in the model. Therefore, we included a set of interaction terms for class × year $(v_t \times v_c)$ in the model to capture any systematic changes by hotels belonging to a specific ranking class, and location × year $(v_t \times v_z)$ to capture any systematic changes in local socioeconomic environments that might affect hotels in a particular region. Using the interaction terms of time and location/industry dummies is a valid approach to control for unobservable variables at the meso (industry and regional) level (Bernstein, McQuade, and Townsend, 2021; Hollenbeck, 2018). Finally, ϵ_{itcg} is the residual.

Despite these controls, the threat of reverse causation remained non-negligible. Specifically, hotels with higher sales revenues are likely to have more resources to invest in improving after-sales service quality, which might enhance the use of empathy in their responses to online complaints. To address this potential endogeneity problem, we employed a Gaussian copula, a likelihood approach that addresses simultaneity, measurement error, and omitted variable bias. This method has been advocated by Becker et al. (2022) and is widely used in marketing research (Haschka, 2022). The core assumption of the Gaussian copula approach is that the model variables follow a likelihood function. By maximizing this likelihood function, we can obtain an unbiased estimate of the parameters of interest. We therefore added two Gaussian copula terms to the regressions, which were the product of the inverse of the standard normal cumulative distribution function (CDF) of the endogenous variables (affective empathy and cognitive empathy) and their estimated CDF. Both endogenous variables were distributed non-normally ($W_{affective\ empathy} = .985$, $Z_{affective\ empathy} = 6.128$, $p < .001$; $W_{cognitive\ empathy} = .933$, $Z_{cognitive\ empathy} = 9.939$, $p < .001$) (Figure WB-2), confirming the appropriateness of the Gaussian copula approach (Eckert & Hohberger, 2022).

Results

The results are presented in Table 3. Affective empathy has a negative and significant effect on sales performance ($\beta_{affective\ empathy} = -.061$, $p < .01$, $t = 6.777$) and cognitive empathy has a positive and significant effect on sales performance ($\beta_{cognitive\ empathy} = .017$, $p < .05$, $t = 3.400$), supporting H1.In terms of effect sizes, when the use of affective empathy increases by 1%, sales decrease by 6.14%, whereas when the use of cognitive empathy increases by 1%, sales increase by 1.72%.[2]

Intensely affective complaints do not influence hotel sales ($\beta_{intensely\ affective\ complaints} = -.001$, $p > .10$, $t = .018$) but concrete complaints have a negative and significant impact on hotel sales ($\beta_{concrete\ complaints} = -.055$, $p < .10$, $t = 2.895$).

The interaction effect between affective empathy and intensely affective complaints on hotel sales is positive and significant ($\beta_{affective\ empathy \times intensely\ affective\ complaints} = .031$, $p < .05$, $t = 4.429$); the interaction effect between cognitive empathy and intensely affective complaints on hotel sales is non-significant ($\beta_{cognitive\ empathy \times intensely\ affective\ complaints} = -.042$, $p = .251$, $t = 1.400$). The findings support H2, indicating that using affective empathy (vs. cognitive empathy) to respond to intensely affective complaints is more effective. Figure WB-3 illustrates the joint effect between intensely affective complaints and affective empathy. It can be seen from the figure that for extremely intensely affective complaints (i.e., the emotional value is three standard deviations above the mean), the use of affective empathy can lead to positive sales performance.

The interaction effect between cognitive empathy and concrete complaints on hotel sales is positive and significant ($\beta_{cognitive\ empathy \times concrete\ complaints} = .245$, $p < .10$, $t = 3.141$), and the interaction effect between affective empathy and concrete complaints on hotel sales is negative and statistically

[2] We also tested the interaction effect between the two types of empathy. The results, presented in Web Appendix B, Table WB-4, show that this interaction effect is not statistically significant.

Table 3 Effect of cognitive and affective empathy on providers' sales (Study 1)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Cognitive empathy	**.017**** (.005)	.008 (.015)	.050* (.021)	−.648* (.206)	−.633* (.235)
Affective empathy	**−.061***** (.009)	−.015* (.006)	−.085*** (.004)	.184 (.094)	.165 (.091)
Intensely affective complaints		−.001 (.009)		−.042 (.028)	−.046 (.027)
Concrete complaints		**−.055*** (.019)	−.019 (.053)		−.020 (.055)
Cognitive empathy × Concrete complaints			**.245*** (.078)		**.251*** (.083)
Affective empathy × Concrete complaints			**−.090*** (.033)		**−.092*** (.033)
Cognitive empathy × Intensely affective complaints				−.042(.030)	−.038 (.024)
Affective empathy × Intensely affective complaints				**.031****(.007)	**.030**** (.005)
Complaint-related control					
Complaint length	.010 (.030)	.017 (.011)	.008 (.029)	.012 (.030)	.010 (.028)
Complaint helpfulness	.002 (.008)	.005 (.005)	.002 (.008)	.002 (.008)	.002 (.008)
Number of reviews (both complaints and positive reviews) per quarter	.030* (.012)	.032 (.021)	.029* (.011)	.029* (.011)	.028* (.010)
Average rating	.065 (.046)	−.024 (.028)	.063 (.047)	.070 (.042)	.067 (.043)
Standard deviation in rating	−.024 (.035)	−.128* (.041)	−.018 (.032)	−.025 (.031)	−.018 (.030)
Response-related control					
Response time	.000** (.000)	.000 (.000)	.000* (.000)	.000* (.000)	.000* (.000)
Apology	−.002 (.002)	−.001 (.002)	−.002 (.002)	−.002 (.001)	−.002 (.001)
Compensation	.009** (.002)	.008 (.004)	.009** (.002)	.009** (.002)	.009** (.002)
Ratio of responses to complaints	.031** (.008)	.010 (.023)	.033** (.008)	.031 (.014)	.034 (.016)
Response length	.001 (.009)	.007** (.002)	−.000 (.009)	.002 (.010)	.000 (.010)
Other channels	−.007 (.032)	−.026 (.036)	−.007 (.031)	−.007 (.030)	−.006 (.029)
Provider-related controls					
Average price per quarter	.008* (.003)	−.002 (.001)	.008* (.003)	.008* (.003)	.008* (.003)
Hotel size	.600 (5.094)	3.140** (.730)	.404 (4.769)	.150 (5.405)	−.045 (5.053)
Competitors' sales performance	.037 (.018)	.032** (.007)	.038 (.018)	.036 (.018)	.037 (.018)
Endogeneity-related controls					
Copula term of cognitive empathy	.009 (.008)	−.000 (.008)	.009 (.008)	.008 (.008)	.008 (.008)
Copula term of affective empathy	−.007** (.002)	−.008* (.003)	−.007*** (.001)	−.007** (.002)	−.007*** (.001)
Constant	−.792 (27.415)	-11.741* (3.947)	.292 (25.738)	1.602 (29.001)	2.688 (27.198)
Hotel fixed effects	Yes	Yes	Yes	Yes	Yes
Year fixed effects	Yes	Yes	Yes	Yes	Yes
Year × Hotel class fixed effects	Yes	Yes	Yes	Yes	Yes
Location × Hotel class fixed effects	Yes	Yes	Yes	Yes	Yes
Observations	4,328	4,328	4,328	4,328	4,328
R-squared	.940	.918	.940	.940	.941

Notes: Sales performance is a proxy for prospective customers' purchasing behavior. The estimator is a fixed-effect panel-data technique. The figures in parentheses are robust standard errors clustered to the hotel level. * $p<.10$, ** $p<.05$, and *** $p<.01$

significant ($\beta_{affective\ empathy \times concrete\ complaints}=-.090$, $p<.10$, t=2.727). The findings support H3, showing that it is more effective to use cognitive empathy (vs. affective empathy) to respond to concrete online complaints. Figure WB-4 illustrates this joint effect.

In terms of the effects of other response strategies, respond to complaints have better performance ($\beta_{ratio\ of\ responses\ to\ online\ complaints}= .031$, $p<.05$, t=3.875). Mentioning compensation in response to complaints is also positively associated with sales performance ($\beta_{expression\ of\ compensation}= .009$, $p<.05$, t=4.500). Response time has an unexpectedly positive but very small effect on sales($\beta_{response\ time}= .00006$, $p<.05$, t=4.310). It might be the case that when providers take a while to respond to an online complaint, they are signaling that they take the complaint seriously and want to deal with it properly, which requires time. Finally, responding to a complaint with an apology has no effect on sales ($\beta_{apology}=-.002$, $p= .63$, t=1.142).

Discussion of Study 1

Overall, Study 1 provides empirical evidence that when handling online complaints, cognitive empathy is more effective than affective empathy at triggering prospective customers' reactions. In particular, cognitive empathy has a positive effect on sales performance, whereas affective empathy has

a negative effect. Cognitive empathy also works better for concrete online complaints, and affective empathy is more suitable for intensely affective online complaints.

However, it can be argued that quarterly sales revenues cover the purchasing behavior of both prospective customers and complainers. Although prospective customers vastly outnumber complainers (Herhausen et al., 2019), this study does not fully disentangle the effects of providers' responses on prospective customers and on complainers. Thus, we conducted Study 2 to test the effect of empathetic responses on prospective customers' reactions.

Study 2: Empathy and the like reactions of prospective customers

Description of the data

Study 2 had the aim of providing additional evidence for the effect of empathetic responses on prospective customers' reactions. We collected data from the Facebook pages of 10 major customer-oriented service providers, where customers voice complaints and receive responses (Johnen & Schnittka, 2019). We selected industry leaders from the S&P 500 list, prioritizing those with the most Facebook followers at the time of data collection (July 2021) to ensure a sufficient number of complaint posts and responses. Our sample includes providers from various industries, such as retail, hospitality, and restaurants. Our analysis specifically examines how prospective customers engage with provider responses, focusing on their "like" reactions to expressions of cognitive or affective empathy.

First, we gathered all (76,181) comments posted by customers on the Facebook pages of the 10 providers in our sample.[3] To ensure the observations were representative, the study window spans three years (2017–2019) but excludes years after 2019 to avoid potential biases associated with the COVID-19 pandemic. To identify whether or not the online comments were complaints, we used RoBERTa (Hartmann et al., 2021; Liu et al., 2019), a transformer-based language model that assigns a probability that a comment is positive, neutral, or negative. We kept only the 36,478 comments identified by the model as negative (online complaints). We also scraped the reactions of prospective customers to the providers' responses to these comments.

Measurement

In line with prior research on customer engagement with social media (Herhausen et al., 2019; Ordenes et al., 2019), we used the natural logarithm of the number of likes given to the providers' responses to measure prospective customers' reactions. We applied the same procedure as in Study 1 and used Facebook data to re-train the BERT models to measure the propensity of affective and cognitive empathy in each response. As in Study 1, to measure the intensively affective of a complaint, we mined the intensity of high-arousal negative words in each complaint. To measure the concreteness of a complaint, we mined the intensity of concrete words in each complaint.

We controlled for a range of variables that are relevant to like reactions. For *online complaint-related confounding effects*, we calculated each provider's number of complaints as a proportion of their total customer comments; this indicated their frequency of service failure (Basuroy et al., 2003). We also controlled for the length of complaints (Umashankar et al., 2017). Finally, we took into account prospective customers' reactions to the complaints because these responses would determine what prospective customers expected from the provider's response. For *response-related variables*, we controlled for compensation and apology mentioned in a response, as well as response length (Herhausen et al., 2019). In addition, Facebook has created a number of reaction buttons (e.g., wow, sad, angry) which may create a herding effect, influencing prospective customers' interpretations and propensity to like a message (Johnen & Schnittka, 2019). We therefore integrated the sum of all non-like reactions. For *firm-level time-variant variables*, we controlled for firm size (measured by annual total assets) and marketing spending (measured as annual advertising expenditures). We extracted these variables from firms' financial reports covering the study period. To some extent, these two variables can also help control the frequency of Facebook impressions since they indicate firms' financial capability and preferences for running marketing campaigns (e.g., whether and how much firms pay Facebook to increase impressions and reach). Finally, we controlled for the other channels variable. Operationalization, rationales, descriptive information, and the correlation matrix are presented in Table WC-1 and Table WC-2.

Estimation

We used the following equation to test hypotheses H1, H2, and H3:

[3] Bank of America, Booking.com, Home Depot, Domino's Pizza, eBay, Lowe's, Marriott Hotels, McDonald's, Wynn Las Vegas Hotel, and Walmart.

$$
\begin{aligned}
Like_{if} = {} & \beta_0 + \beta_1 Cognitive\ Empathy_{if} \\
& + \beta_2 Affective\ Empathy_{if} \\
& + \beta_3 Concrete\ Complaint_{if} \\
& + \beta_4 Intensely\ Affective\ Complaint_{if} \\
& + \beta_5 Cognitive\ Empathy_{if} \\
& \quad \times Concrete\ Complaint_{if} \\
& + \beta_6 Cognitive\ Empathy_{if} \\
& \quad \times Intensely\ Affective\ Complaint_{if} \\
& + \beta_7 Affective\ Empathy_{if} \\
& \quad \times Concrete\ Complaint_{if} \\
& + \beta_8 Affective\ Empathy_{if} \\
& \quad \times Intensely\ Affective\ Complaint_{if} \\
& + Controls_{if}\boldsymbol{\gamma} \\
& + Gaussian\ copula\ terms_{if}\boldsymbol{\pi} + v_f + \epsilon_i
\end{aligned}
$$

in which i represents a provider's response to an online complaint. Thus, $Like_{if}$ is the number of likes that response i by provider f received in the study period. $Cognitive\ Empathy_{if}$ and $Affective\ Empathy_{if}$ are the two key independent variables. The term $Controls_{if}$ is a vector of the control variables, v_f indicates the provider fixed effect, and ϵ_i is the error term. To test the joint effect between empathetic responses and the characteristics of complaints, we examined the four interaction terms in the equation.

Endogeneity

To draw inferences of a causal effect of dimensions of empathy on prospective customers' reactions (i.e., the number of likes), it was necessary to address potential endogeneity. Omitted relevant variables could be a major source of bias in our study. For example, given the availability of data, we could not fully control the characteristics (e.g., age, education, and gender) of the customers who read the posts. These individual-level factors, although rarely available to researchers, may determine the number of likes a post receives. As in Study 1, we addressed the endogeneity concerns inherent to cross-sectional response-level analysis by using the Gaussian copula approach. A Shapiro–Wilk test of the normal distribution of the two endogenous variables (see Figure WC-1) indicated that both were distributed non-normally ($W_{affective\ empathy}$ = .777, $Z_{affective\ empathy}$ = 22.282, p<.001; $W_{cognitive\ empathy}$ = .790, $Z_{cognitive\ empathy}$ = 22.119, p<.001). The Gaussian copula approach was, therefore, appropriate.

Results

The results are presented in Table 4. Affective empathy has a negative and significant effect on like reactions ($\beta_{affective\ empathy}$=−.024, t=8.020, p<.01) and cognitive empathy has a positive and significant effect ($\beta_{cognitive\ empathy}$= .011, t=11.021, p<.01),supporting H1. In terms of effect sizes, when the use of affective empathy increases by 1%, the number of likes decreases by 2.40%, but when the use of cognitive empathy increases by 1%, the number of likes increases by 1.10%. Note that the negative impact of affective empathy is much stronger than the positive impact of cognitive empathy.[4] These results are in line with those found in Study 1.

Turning to the direct effects of the two moderators, both intensely affective and concrete online complaints show positive and significant effects on likes for responses ($\beta_{intensely\ affective\ complaints}$= .002, t=6.667, p<.001; $\beta_{concrete\ complaints}$= .003, t=2.727, p<.05). This could be because affective intensity and concreteness enhance the clarity of the complaints, making them more appealing to prospective customers. When providers put effort into responding to these impactful complaints, prospective customers may like the responses to show their positive reactions to them.

The interaction effect between intensely affective complaints and affective empathy on like reactions is positive and significant($\beta_{affective\ empathy \times intensely\ affective\ complaints}$= .002, t=2.022, p<.001)the interaction effect between intensely affective complaints and cognitive empathy is not significant($\beta_{cognitive\ empathy \times intensely\ affective\ complaints}$= .003,t=1.502,$p$>.10), supporting H2 (see Figure WC-2).

The interaction effect between concrete complaints and cognitive empathy on like reactions is positive and significant ($\beta_{cognitive\ empathy \times concrete\ complaints}$= .023, t=3.286, p<.001), whereas the interaction effect between concrete complaints and intensely affective complaints is non-significant ($\beta_{affective\ empathy \times concrete\ complaints}$= .015, t= .789, p>.10), supporting H3 (see Figure WC-3).

Turning to other response strategies, we see that responses that mention compensation receive more likes ($\beta_{compensation}$=.010, t=10.120, p<.001), indicating that when the likelihood of a responsementioning compensation increases by 1%, the number of likes increases by 1%. For apology ($\beta_{apology}$= .002, t=5.013, p<.01), each 1% increase leads to a .2% increase in the number of likes.

[4] Our result in Web Appendix C, Table WC-3 shows that the interaction effect between cognitive and affective empathy on likes is not statistically significant.

Table 4 Effects of cognitive and affective empathy on likes on Facebook (Study 2)

	Model (1)	Model (2)	Model (3)	Model (4)	Model (5)
Cognitive empathy	**.011***** (.001)	.008*** (.001)	−.269 (.252)	−.034 (.047)	−.261*** (.088)
Affective empathy	**−.024***** (.003)	−.024*** (.003)	−.182*** (.057)	−.085*** (.012)	−.231** (.090)
Intensely affective complaints		**.002***** (.000)	.001 (.001)		.001*** (.000)
Concrete complaints		**.003**** (.001)		−.008 (.008)	−.006** (.002)
Cognitive empathy × Concrete complaints				**.023***** (.007)	**.019**** (.008)
Affective empathy × Concrete complaints				**.015** (.019)	.003 (.006)
Cognitive empathy × Intensely affective complaints			**.003** (.002)		.003*** (.001)
Affective empathy × Intensely affective complaints			**.002***** (.001)		**.002**** (.001)
Complaint-related controls					
Complaint length	−.010*** (.000)	−.012*** (.000)	−.012*** (.001)	−.010*** (.001)	−.012*** (.001)
Ratio of complaints	-1.870*** (.018)	-1.861*** (.018)	-1.436*** (.046)	-1.875*** (.018)	-1.440*** (.046)
Reactions to complaints	.185*** (.017)	.187*** (.017)	.189*** (.019)	.187 (.019)	.191*** (.012)
Response-related controls					
Other reactions to firm responses	.111*** (.002)	.111*** (.002)	.109*** (.006)	.110*** (.005)	.109*** (.003)
Other channels	−.002*** (.000)	−.002*** (.000)	−.002* (.001)	−.001*** (.000)	−.002*** (.000)
Response length	.020*** (.000)	.020*** (.000)	.020** (.001)	.020*** (.002)	.020*** (.002)
Apology	.002*** (.000)	.001** (.000)	.001 (.004)	.001 (.001)	−.000 (.001)
Compensation	.010*** (.001)	.009*** (.001)	.006 (.008)	.010** (.004)	.006* (.003)
Firm-level controls					
Firm size (total assets)	.157*** (.002)	.158*** (.002)	.169**(.059)	.158*** (.002)	.171*** (.005)
Firm marketing spending	.023*** (.001)	.023*** (.001)	.023*** (.003)	.023*** (.001)	.023*** (.002)
Endogeneity-related controls					
Copula term of cognitive empathy	−.004** (.001)	−.003* (.001)	−.004 (.003)	−.004 (.003)	−.003 (.004)
Copula term of affective empathy	−.014*** (.000)	−.012*** (.000)	−.011*** (.003)	−.012*** (.001)	−.010*** (.002)
Constant	.351*** (.006)	.175*** (.014)	.167 (.142)	.375*** (.012)	.168*** (.018)
Provider dummies	Yes	Yes	Yes	Yes	Yes
Observations	36,478	36,478	36,478	36,478	36,478
R-squared	.135	.135	.134	.134	.133

Notes: The estimator is a robust ordinary least squares technique. The figures in parentheses are robust standard errors clustered to the provider level. * $p < .10$, ** $p < .05$, and *** $p < .01$

Discussion of Study 2

Consistent with Study 1, we find that in the context of online complaints on Facebook, the use of cognitive empathy in providers' responses relates positively to prospective customers' like reactions and that the use of affective empathy is negatively associated with the same outcome. Cognitive empathy generates more likes if it is used in response to concrete online complaints, and affective empathy in responses to highly affective online complaints leads to an increase in the same outcome.

Study 3: The mechanism for cognitive versus affective empathy

Studies 1 and 2 established the effects of cognitive and affective empathy on prospective customers' behavioral responses. The purpose of Study 3 was to test H4, which predicts that cognitive (vs. affective) empathy increases prospective customers' perception of a provider's competence, which, in turn, leads to more purchase intentions.

Study 3a: Ruling out alternative explanations

The goal of Study 3a was to test the mediating effect of perceived competence (H4) and to rule out two alternative mechanisms, namely the perceived helpfulness of the provider's response (defined as the extent to which a response is perceived as being informative and valuable; Yin et al., 2017) and the inference of manipulative intent (defined as the belief that the provider is deliberately trying to influence customers' perceptions; Campbell, 1999).

Indeed, it is conceivable that the two process variables (i.e., *helpfulness* and *manipulative intent*) explain the effects of the two different types of empathy. First, compared to affective empathy, cognitive empathy could reflect whether the provider genuinely tries to address complainers' issues by, for instance, lessening their economic losses. Cognitive empathy also aligns with the processing styles

of prospective customers who rely on rational, fact-based information (Béal et al., 2022). Consequently, prospective customers could perceive responses employing cognitive empathy as being more helpful than those relying on affective empathy. Second, compared to cognitive empathy, the emotional language of affective empathy could raise suspicions about the intent of the provider, which could be viewed as using "cheap talk" to persuade customers (Yin et al., 2017) rather than taking actual actions to rectify the situation. Prior research also provides evidence that affective empathy could appear manipulative to observers (Shen, 2010a, b). In this case, affective empathy would, compared to cognitive empathy, increase the inference of manipulative intent.[5]

For this online experiment, we recruited 298 UK participants (M_{age} = 37.17, SD_{age} = 12.92, 45.7% male) from Prolific. Participants were randomly assigned to one of three conditions (cognitive vs. affective vs. no empathy) in a one-factor between-subjects design. We first asked participants to engage in a role-playing exercise in which they imagined they were searching online for a restaurant to go out for dinner with friends. By completing this task, they came across an online complaint. After reading the complaint, participants were randomly assigned to one of three response conditions in which the provider used cognitive empathy or affective empathy or no empathy at all (see Web Appendix D for the manipulations). After reading the response, participants had to rate the provider's perceived competence (3 items; α = .93; M = 4.34, SD = 1.38; adapted from Warren et al., 2018), and its perceived response helpfulness (3 items; α = .94; M = 4.01, SD = 1.70; adapted from Yin et al., 2017). Perceived competence is a broad concept that characterizes the whole provider. In our experiments, participants form their judgment about a firm's competence by referring to its response to the online complaint; it is the only diagnostic information that is made available to the participants. They then had to rate their inference of the provider's manipulative intent (α = .91; M = 3.06, SD = 1.47; adapted from Antonetti & Crisafulli, 2022) and their purchase intention (3 items; α = .96; M = 3.88, SD = 1.64; adapted from White & Yuan, 2012). Participants completed scales to measure manipulation checks and demographics. Table WD-1 presents the measures in detail.

To confirm that the manipulation of cognitive empathy was successful, we asked participants to rate whether the restaurant mentions in its response that "they understand the customer's experience," "they understand the customer's expectations," and "they can imagine the customer's situation" (3 items adapted from McBane, 1995 and Wieseke et al., 2012; α = .88; M = 4.56, SD = 1.43).

The results of a series of t-tests indicate that there are significant differences in the level of understanding a complainer's situation and expectations between the cognitive empathy condition and the affective empathy condition ($M_{cognitive\ empathy}$ = 5.14, $SD_{cognitive\ empathy}$ = 1.21; $M_{affective\ empathy}$ = 4.36, $SD_{affective\ empathy}$ = 1.38; $t(195) = 4.22$, $p < .001$), as well as between the cognitive empathy condition and the no empathy condition ($M_{no\ empathy}$ = 4.16, $SD_{no\ empathy}$ = 1.50; $t(200) = 5.10$, $p < .001$). However, there is no difference between the affective empathy condition and the no empathy condition ($t(195) = .96$, $p = .33$). The results confirmed the effectiveness of the cognitive empathy manipulation.

Our results also confirm the validity of the manipulation of affective empathy. We asked participants to rate whether the restaurant mentions in its response that "they feel the customer's frustration," "they share the same feelings as the customer," or "their emotional reaction towards the customer's experience" (3 items adapted from McBane, 1995 and Wieseke et al., 2012; α = .82; M = 4.48, SD = 1.46). The results indicate that there are significant differences in the level of acknowledgment and emotional reactions to the complainer's feelings between the affective empathy condition and the cognitive empathy condition ($M_{affective\ empathy}$ = 4.99, $SD_{affective\ empathy}$ = 1.26; $M_{cognitive\ empathy}$ = 4.49, $SD_{cognitive\ empathy}$ = 1.63; $t(195) = 2.40$, $p = .02$), as well as between the affective empathy condition and the no empathy condition ($M_{no\ empathy}$ = 3.99, $SD_{no\ empathy}$ = 1.32; $t(195) = 5.45$, $p < .001$). There is also a difference between the conditions: cognitive empathy and no empathy ($t(200) = 2.40$, $p < .001$).

We then examined the effects of empathy types on prospective customers' reactions. The results indicate that cognitive empathy leads to a higher level of prospective customers' purchase intentions than affective empathy ($M_{cognitive\ empathy}$ = 4.62, $SD_{cognitive\ empathy}$ = 1.48; $M_{affective\ empathy}$ = 3.25, $SD_{affective\ empathy}$ = 1.68; $t(195) = 6.05$, $p < .001$) and no empathy ($M_{no\ empathy}$ = 3.74, $SD_{no\ empathy}$ = 1.49; $t(200) = 4.16$; $p < .001$), which is consistent with H1. Affective empathy leads to a lower level of prospective purchase intentions than no empathy ($t(195) = 2.19$, $p = .03$). Our findings also show that cognitive empathy leads prospective customers to have a higher perception of a provider's competence than affective empathy ($M_{cognitive\ empathy}$ = 5.08, $SD_{cognitive\ empathy}$ = 1.13; $M_{affective\ empathy}$ = 3.72, $SD_{affective\ empathy}$ = 1.37; $t(195) = 7.61$; $p < .001$) and no empathy ($M_{no\ empathy}$ = 4.20, $SD_{no\ empathy}$ = 1.29; $t(200) = 5.17$; $p < .001$).Affective empathy leads to a lower perception of

[5] We also tested the serial mediating effect involving perceived competence and perceived helpfulness. Although the indirect effect of cognitive (vs. affective) empathy on purchase intention via perceived competence and perceived helpfulness is significant, the coefficient for the path going through perceived competence alone remains the strongest. We therefore advance that perceived competence is the key mechanism explaining the effect of cognitive (vs. affective) empathy.

a provider's competence when compared with no empathy ($t(195) = 2.52$, $p = .01$).

To test H4 regarding the mediating effect of perceived competence, we used mediation regression analysis in PROCESS (Model 4). Consistent with H4, we found a positive, significant, and indirect effect of cognitive empathy (vs. no empathy) on prospective customers' purchase intentions (β = .62, 95% confidence interval [CI] = [.37; .88]) through perceived competence. We also find a negative indirect effect of affective empathy (vs. no empathy) on purchase intentions (β = −.33, 95% CI = [-.60; −.06]) through perceived competence.

Before conducting our analyses with the alternative mediators, we examined their correlations; overall, we found moderate, significant correlations among our three mediators. The correlation between perceived competence and helpfulness is .47; between perceived competence and manipulative intent −.51; and between helpfulness and manipulative intent −.42. We then ran mediation analyses with competence, helpfulness, and manipulative intent as parallel mediators. The results shown in Table 5 indicate that perceived competence provides the strongest explanation for the positive effect of cognitive empathy on purchase intention and the negative effect of affective empathy on purchase intention.

As illustrated in Table 5, perceived competence is associated with strong and significant indirect effects for both contrasts (cognitive vs. control = .48; affective vs. control = −.26). However, the results associated with the alternative mechanisms are not as convincing. Perceived helpfulness is associated with only one significant indirect effect of small amplitude (cognitive vs. control = .12). In turn, the indirect effect of manipulative intent is significant for both contrasts but with smaller amplitude compared to competence (cognitive vs. control = .06; affective vs. control = −.12).

Study 3b: Replication with a different sample

The goal of Study 3b was to retest H4 as well as an alternative mechanism with a different sample. We recruited 300 US participants (M_{age} = 42.50, SD_{age} = 12.92, 41.3% male) from Prolific. Participants were randomly assigned to one of three conditions (cognitive vs. affective vs. no empathy) in a one-factor between-subjects design following the same procedure as in Study 3a. We used the same stimuli and set of questions as in Study 3a (see Web Appendix D).

Consistent with H4, we found positive, significant, and indirect effects of cognitive empathy (vs. no empathy) on prospective customers' purchase intentions (β = .43, 95% CI = [.22; .67]) through perceived competence. We also found another negative indirect effect of affective empathy (vs. no empathy) on purchase intentions (β = −.34, 95% CI = [-.58; −.12]) through perceived competence.

The correlation between competence and helpfulness is .39; between competence and manipulative intent −.34; and between helpfulness and manipulative intent −.42. We then ran mediation analyses with competence, helpfulness, and intent as parallel mediators. We obtained similar results to those in Study 3a. Perceived competence (β = .28, 95% CI = [.14; .47]) provides the strongest explanation for the positive effect of cognitive empathy (vs. control) on purchase intention. In this case, the indirect effects involving helpfulness (β = .23, 95% CI = [.11; .39]) and manipulative intent (β =

Table 5 Results of mediation regression analysis with alternative mediators (Study 3a)

	Effects of empathy on each mediator				Effects on purchase intention			
	B	SE	t	95% CI	B	SE	t	95% CI
Direct effects								
Affective empathy					−.04	.18	.25	[-.40, .30]
Cognitive empathy					.19	.18	1.06	[-.16, .55]
Perceived competence	−.47[1]	.18	2.64**	[-.83, −.12]	.54	.06	8.32***	[.41, .67]
	.88[2]	.17	4.95***	[.53, 1.24]				
Perceived helpfulness	−.42[1]	.23	1.85	[-.88, .02]	.13	.04	2.76*	[.03, .23]
	.89[2]	.22	3.93***	[.44, 1.34]				
Manipulative intent	.74[1]	.20	3.71**	[.34, 1.13]	−.17	.05	2.94**	[-.28, −.05]
	−.39[2]	.19	2.01*	[-.78, −.01]				
Indirect effect via								
Perceived competence					$B_{affective}$ = -.26	.10		[-.49, −.05]
					$B_{cognitive}$ = .48	.11		[.27, .73]
Perceived helpfulness					$B_{affective}$ = -.05	.04		[-.17, .01]
					$B_{cognitive}$ = .12	.06		[.01, .27]
Manipulative intent					$B_{affective}$ = -.12	.05		[-.26, −.03]
					$B_{cognitive}$ = .06	.04		[.00, .16]

Notes: * $p < .05$, ** $p < .01$; *** $p < .001$. An indirect effect is significant when the confidence intervals (CI) do not contain 0. All reported effects for affective and cognitive empathy represent contrasts with the control group. [1] The contrast is between affective empathy and the control group. [2] The contrast is between cognitive empathy and the control group

.13, 95% CI = [.03; .25]) were smaller, although significant. Again, perceived competence (β = −.23, 95% CI = [−.41; −.07]) provides the strongest explanation for the negative effect of affective empathy (vs. control) on purchase intentions. In this other case, the indirect effects with helpfulness (β = −.18, 95% CI = [−.34; −.06]) and manipulative intent (β = −.17, 95% CI = [−.33; −.03]) are weaker.

Discussion of Study 3

Study 3 indicates a causal effect of cognitive empathy, relative to affective empathy, on prospective customers' purchase intentions. Consistent with the findings from Studies 1 and 2, cognitive empathy is more effective than affective empathy when addressing online complaints, thereby increasing prospective customers' likelihood to purchase. This effect is largely explained by prospective customers perceiving providers offering responses with cognitive empathy to be more competent, which enhances their positive behavioral reactions. In contrast, responding with affective empathy reduces prospective customers' perception of provider competence, ultimately lowering purchase intentions.

Study 4: Matching empathetic response with different types of complaints

Study 4a: Empathetic response and intensely affective complaints

The purpose of Study 4a was to demonstrate the causal nature of our predictions regarding the effectiveness of affective empathy, as opposed to cognitive empathy, in responses to intensely affective complaints in influencing prospective customers' purchase intentions. Study 4a is a two (intensely affective complaint: low vs. high) by two (empathic response: affective vs. cognitive) between-subjects design. We recruited 300 UK participants via Prolific (M_{age} = 37.58, SD_{age} = 13.00, 44.30% male); these participants did not take part in Study 3 and were randomly assigned to one of four conditions. Participants were asked to imagine they were selecting a hotel for their next trip when they came across a customer complaint. They were assigned to either a high or low intensely affective complaint condition. After reading the complaint, participants were assigned to one of two response conditions, in which the provider utilized either affective or cognitive empathy (see Web Appendix D). Subsequently, participants rated their purchase intentions using the same scales as in Studies 3a and 3b before completing scales to measure manipulation checks and demographic questions.

To verify the effectiveness of the intensely affective complaint manipulation, participants rated the extent to which they believed the language used in the complaint is "not at all angry/frustrated = 1" and "very angry/frustrated = 7 (r = .80; M = 6.07, SD = .85). The results indicated significant differences in affective intensity levels ($M_{high\ affective\ intensity}$ = 6.40, $SD_{high\ affective\ intensity}$ = .67; M_{low} affective intensity = 5.16, $SD_{low\ affective\ intensity}$ = 1.37; $t(298)$ = 9.94, p < .001), indicating that our manipulation check was successful. We also checked the manipulation of cognitive and affective empathy in terms of whether the response mentioned understanding of the complainer's situation and expectations ($M_{cognitive\ empathy}$ = 5.49, $SD_{cognitive\ empathy}$ = 1.10; $M_{affective\ empathy}$ = 5.17, $SD_{affective\ empathy}$ = 1.29; $t(298)$ = 2.29, p = .02) and showed an acknowledgment of and emotional reaction to the complainer's feelings ($M_{cognitive\ empathy}$ = 4.26, $SD_{cognitive\ empathy}$ = 1.33; $M_{affective\ empathy}$ = 5.40, $SD_{affective\ empathy}$ = 1.18; $t(298)$ = 7.81, p < .001). The results indicated that we had successfully manipulated cognitive and affective empathy.

We first conducted a moderation analysis using the Hayes (2013) PROCESS tool (Model 1) to examine the interaction effect between empathy type and intensely affective complaints on participants' purchase intentions. Our results show that the direct effect of affective (vs. cognitive) empathy on participants' purchase intention (β = .38, p = .13) and the direct effect of an intensely affective complaint on participants' purchase intention (β = −.35, p = .16) are not significant. The interaction effect between empathy type and intensely affective complaints is not significant either (β = .49, p = .17).

Despite the interaction not being significant, we conducted a series of planned contrasts by examining split samples because H2 involves a clear prediction between two specific conditions. Since we expected significant results for only a portion of our data (i.e., the high intensely affective condition), it was not necessary to obtain a significant interaction to proceed with planned contrasts. Specifically, a non-significant interaction term between empathy type and intensely affective complaints does not indicate that the moderating effect is insignificant within each group; just that the difference in slopes of the direct effects between the two conditions is not significant. A split-sample analysis allowed us to test the effect within each group, meeting the requirement of H2 that using affective empathy (vs. cognitive empathy) to respond to high-intensity affective online complaints is effective in eliciting favorable reactions from prospective customers. Such an approach has been explained by methodologists (Kingsley et al., 2017; Wooldridge, 2010) and has been used regularly in marketing research (Giebelhausen et al., 2011; Wiecek et al., 2020).

Planned contrasts for the high intensely affective complaint condition revealed that participants exhibited a greater

level of purchase intention after reading responses using affective empathy ($M_{affective\ empathy}$ = 4.06, $SD_{affective\ empathy}$ = 1.66) compared with cognitive empathy ($M_{cognitive\ empathy}$ = 3.19, $SD_{cognitive\ empathy}$= 1.47; $t(149)=3.43$; $p<.001$), supporting H2. In the low intensely affective complaint condition, however, no significant difference was found in purchase intention for affective empathy ($M_{affective\ empathy}$ = 3.92, $SD_{affective\ empathy}$ =1.53) compared with cognitive empathy ($M_{cognitive\ empathy}$ = 3.54; $SD_{cognitive\ empathy}$= 1.51; $t(147)=.13$; $p=1.29$).

Study 4b: Empathetic response and concrete complaints

The purpose of Study 4b was to demonstrate the causal nature of our predictions regarding the effectiveness of cognitive empathy, as opposed to affective empathy, in responses to concrete complaints in influencing prospective customers' purchase intentions. Study 4b is a two (concrete complaint: low vs. high) by two (empathetic response: affective vs. cognitive) between-subjects design. We recruited another set of 300 different participants from the UK (M_{age} = 38.72 years, SD_{age} = 12.42 years, 56.18% female) through Prolific. Participants were asked to imagine they were selecting an airline for their next trip when they came across a customer complaint. They were assigned to either a low or high concrete complaint condition. In this study, after reading the complaint, participants were randomly assigned to either an affective or cognitive empathy response condition (see Web Appendix D). They rated their purchase intentions ($\alpha = .95$; $M=3.98$; $SD=1.58$) using the same scales as those in Study 3 before completing scales to measure manipulation checks and demographic questions.

To ensure the manipulation of complaint concreteness was successful, participants rated the language used in the review from 1 to 7 (1 = very abstract, 7 = very concrete; 1 = very unclear, 7 = very clear; $r = .71$; $M=5.57$; $SD=1.33$; Aerts et al., 2017). Significant differences in perceived concreteness were found between the conditions ($M_{high\ concrete}$ = 6.16, $SD_{high\ concrete}$= .89; $M_{low\ concrete}$ = 4.97, $SD_{low\ concrete}$= 1.43; $t(298)=8.55$, $p<.001$), which suggested that we had successfully manipulated concreteness in the online complaints. We also confirmed the effectiveness of the cognitive versus affective empathy manipulation. Participants rated whether the response expressed perspective-taking to understand the complainer's situation ($M_{cognitive\ empathy}$ = 5.51, $SD_{cognitive\ empathy}$= 1.05; $M_{affective\ empathy}$ = 4.74, $SD_{affective\ empathy}$ = 1.26; $t(298)=5.75$, $p<.001$) and an acknowledgment of and emotional reaction to the complainer's feelings ($M_{cognitive\ empathy}$ = 4.76, $SD_{cognitive\ empathy}$= 1.37; $M_{affective\ empathy}$ = 5.03, $SD_{affective\ empathy}$ = 1.32; $t(298)=2.09$, $p=.03$).

Similar to Study 4a, we first conducted moderation analysis to examine the interaction effect between empathy type and the level of complaint concreteness on participants' purchase intentions. Our results show that the direct effect of cognitive (vs. affective) empathy on purchase intention is positive and significant ($\beta=1.03$, $p<.001$), whereas the direct effect of a concrete complaint on participants' purchase intention is negative and significant ($\beta = -.57$, $p=.01$). However, the interaction effect between empathy type and complaint concreteness is not significant ($\beta = -.21$, $p=.52$). Although the interaction is not significant, we conducted planned contrasts for the same reasons as those listed for Study 4a.

As expected, planned contrasts for the highly concrete complaint condition revealed that participants expressed a higher level of purchase intention following cognitive empathy responses ($M_{cognitive\ empathy}$ = 4.04, $SD_{cognitive\ empathy}$ = 1.53) compared with affective empathy ($M_{affective\ empathy}$ = 3.23, $SD_{affective\ empathy}$= 1.58; $t(149)=3.17$; $p=.002$), supporting H3. For the low concrete complaint condition, participants also showed a higher level of purchase intention after cognitive empathy responses ($M_{cognitive\ empathy}$ = 4.83, $SD_{cognitive\ empathy}$ =1.28) compared with affective empathy ($M_{affective\ empathy}$ = 3.80, $SD_{affective\ empathy}$= 1.49; $t(147)=4.51$; $p<.001$).

Discussion of Study 4

In line with findings from Studies 1 and 2, Study 4 finds support for the causal predictions made in H2 and H3. Using controlled settings, Study 4a provides additional evidence that affective empathy is especially effective for highly intensely affective complaints, whereas Study 4b shows that cognitive empathy is more appropriate for highly concrete complaints.

General discussion

Drawing on research that differentiates between types of empathy (see Table 2) and emerging studies on social support (Boren, 2014; Tran et al., 2024), we distinguish between two primary types of empathy, namely affective and cognitive, and assessed their respective effectiveness when used by providers to respond to online complaints. In two field studies and four experiments, we investigated their effects on prospective customers' reactions (sales, liking, and purchase intention) and the underlying mechanisms. We find that, in general, cognitive empathy is more effective than affective empathy in addressing online complaints because it enhances prospective customers' perception of the provider's competence, which, in turn, increases

their positive behavioral responses. In particular, cognitive empathy proves especially beneficial in responses to concrete complaints, whereas affective empathy is more effective in responses to intensely affective complaints.

Theoretical contributions

Our research offers several new theoretical insights that complement the current literature on empathy. First, building on research regarding empathy in marketing (see Table 2), we differentiate between affective and cognitive empathy in providers' responses to complaints, and find that cognitive empathy is more effective in driving positive reactions in prospective customers. This underscores the importance of considering both types of empathy and distinguishing between them, which may help explain the mixed findings in prior research which has identified empathy as both effective (Herhausen et al., 2023) and ineffective (Marinova et al., 2018; Weißhaar & Huber, 2016).

Second, drawing on social support theory (Boren 2004; Tran et al., 2024) and research on tailoring responses to customer communication (Herhausen et al., 2019, 2023), we demonstrate that affective empathy, as a form of emotional support, is particularly effective for intensely affective complaints that are seeking such support. In contrast, cognitive empathy, which provides informational support, is better suited for concrete complaints. These findings offer new theoretical insights by highlighting that social support considerations, traditionally focused on offline interactions with distressed customers (Gelbrich, 2010; Smith et al., 1999), can be extended to online contexts and prospective customers.

Third, in response to calls for research on the impact of language use on customer perceptions (Berger et al., 2020) and the role of cognitive processes in shaping prospective customers' reactions (Béal & Grégoire, 2021), we demonstrate through experiments that the use of affective empathy, when compared to cognitive empathy, generally leads to less favorable reactions from prospective customers. Indeed, prospective customers tend to perceive providers using affective empathy as less competent, which lowers their purchase intentions. In contrast, cognitive empathy elicits a stronger perception of provider competence, thereby increasing overall purchase intentions. Our research contributes to the ongoing discussion of the relationship between empathy and employee/provider competence (e.g., Redmond, 1989) by offering insights from the perspective of prospective customers.

Furthermore, the results for our control variables in the two field studies (Studies 1 and 2) align with prior complaints management research in offline contexts (Joireman et al., 2013); these studies show that mentioning compensation in responses to online complaints has a positive influence on sales performance and prospective customers' reactions. Although this finding contradicts previous research (e.g., Herhausen et al., 2019), the difference may be explained by the particularities of the service contexts under investigation, in which offering tangible support is perceived as more helpful and as genuinely caring. We also find that delayed responses to online complaints can have a positive effect on sales, supporting the existing service recovery research that indicates that prompt reactions do not necessarily increase customers' purchase intentions (Blodgett et al., 1997). It may be that a delay in responding suggests that the provider has given considerable thought to how it can best support the complainer. Consistent with the findings of Herhausen et al. (2019), we observe that incorporating an apology in response to online complaints significantly enhances prospective customers' engagement, as indicated by an increase in likes (see Study 2). However, it is important to note that an apology alone does not have a positive impact on the provider's sales performance. Here, an apology may be viewed as a form of emotional support that, while fostering goodwill and demonstrating the provider's acknowledgment of their mistake, does not necessarily influence purchasing decisions.

Managerial implications

Prospective customers evaluate service providers by reading online complaints and the responses to them. Research highlights resolution strategies such as compensation (Tran et al., 2024) and explanation (Herhausen et al., 2019). Our study complements these studies by demonstrating the critical role of empathy in complaints management. We show that tailoring responses to complaint type enhances prospective customers' perceptions and reactions. However, empathetic responses must not undermine perceived competence, as this reduces favorable reactions. Managers must consider both complainers and prospective customers, who assess responses when making decisions. Our research offers practical guidance for navigating this challenge.

Responses that demonstrate cognitive empathy by indicating understanding of the complainer's thoughts enhance perceived competence and drive positive reactions by prospective customers, particularly for concrete complaints. We found that a 1% increase in cognitive empathy in responses correlates with an average hotel sales increase of $30,734 (ranging from $10,011 to $42,047), reaching $326,800 a quarter for top-performing hotels. When cognitive empathy is applied to concrete complaints, its impact on sales and prospective customer engagement is further strengthened.

In contrast, using affective empathy generally has a negative effect on prospective customers' reactions. A 1%

Table 6 Examples of how to use empathetic responses to handle online complaints

Challenge	Implications
Handling online complaints using cognitive empathy vs. affective empathy	Providers should respond to online complaints using cognitive empathy rather than affective empathy because cognitive empathy increases sales, boosts purchase intentions among prospective customers and enhances social media engagement. Responses with cognitive empathy use cognitive language that demonstrates the firm's efforts to understand the customer's perspective, challenges, situations, and needs. Examples of cognitive empathy: • We understand the inconvenience you experienced. Your feedback provides valuable insight into the specific challenges you encountered. • We agree that the situation was not acceptable and acknowledge we should have handled it better. We understand why you raised these concerns with us, and we will take action to address the issues. Responses with affective empathy use emotional language to respond to the emotional aspects of the customer's situation. Examples of affective empathy: • We sincerely empathize with your frustration. It deeply saddens us that you faced this issue, and we feel your disappointment. • We regret letting you down. We feel the frustration caused by the situation and acknowledge how upsetting this must be for you.
Handling of concrete and intensely affective complaints using empathetic responses.	**1. Concrete online complaint** Service providers should express cognitive empathy in their responses to these types of complaints. Example of a concrete online complaint: • I waited 45 min in a long line with only one overwhelmed staff member. My room wasn't ready despite arriving after the check-in time, and I had to wait another hour. To top it off, my key card didn't work, requiring another trip to the front desk. Unprofessional service. Not recommended. Effective response with cognitive empathy: • We understand that the situation was unacceptable and fully agree that we should have managed it more effectively. Thank you for bringing this to our attention, and we hope to have the opportunity to welcome you back for a much-improved experience. Ineffective response with affective empathy: • We sincerely feel your frustration and were upset when reading your review. We truly regret what happened. Thank you for bringing this to our attention, and we hope to have the opportunity to welcome you back for a much-improved experience. **2. Highly intensely affective online complaint** Service providers should express affective empathy in their responses to these types of complaints. Example of a highly intensely affective online complaint: • The carpets were stained, and the room reeked. I felt completely uncomfortable and disgusted by the abysmal hygiene standards. This place is a nightmare! How can they even call this a hotel? Terrible service! Effective response with affective empathy: • We sincerely feel your frustration and truly care about your feelings. We are upset that you had such a disappointing experience at our hotel. You are right to feel angry or unhappy with us. Our mistakes are unacceptable. Your good experience is our priority, and we hope for the chance to restore your trust in us during your next visit. Ineffective response with cognitive empathy: • We understand you had a negative encounter with our hotel. It must have been inconvenient when your room wasn't clean. We can imagine that you expected better service from us. We understand your perspective and expectations. Your good experience is our priority, and we hope for the chance to restore your trust in us during your next visit.

increase in affective empathy in responses is associated with an average sales decline of $109,713 (ranging from $58,514 to $142,627), with losses reaching $1,166,600 a quarter for the most profitable hotels. Affective empathy can backfire unless used in response to highly emotional complaints, in which case it may yield positive effects. Hence, providers should identify such complaints and adjust their responses accordingly.

Beyond empathy, providers should leverage other effective response strategies. Our findings indicate that a 1% increase in response rates to online complaints correlates with an average sales rise of $55,393, reaching $589,000 a quarter for the most profitable hotels. Compensation also plays a role; a 1% increase in the frequency with which compensation is mentioned in responses is linked to an average sales increase of $16,082, reaching $171,000 in the following quarter for top hotels. However, compensation is costly, so providers must assess whether increased sales offset the expense.

Table 6 summarizes our managerial recommendations. Our research underscores the financial and reputational stakes of complaints management, providing actionable insights for service providers seeking to optimize customer perceptions and revenue.

Limitations and directions for future research

It is our hope that our research inspires future investigations into service provider responses. We focused on written expressions of empathy as a response strategy to online complaints. However, research has yet to explore how other, verbal and non-verbal response approaches (e.g., empathy in emojis or pictures) influence complainants and prospective customers. Future studies could also examine whether prospective customers perceive responses differently in

online versus in-person settings. In general, more insights into the content, the style and the patterns of responding online to service and product review complaints are needed.

Our analysis of Facebook data (Study 2) focuses on 10 prominent S&P 500 providers. While these high-profile, customer-oriented brands offer valuable insights, they may not fully represent the broader market. Expanding the dataset could enhance the generalizability of our findings. In addition, Facebook's policy change on June 12, 2015 affected content visibility in news feeds (Kanuri et al., 2024). Although our data cover 2017 to 2019, future research should account for changes over a wider timeframe. Algorithmic bias in content selection may also have an impact on user engagement. Although we controlled for firm size and marketing expenditure, Kanuri et al. (2024) propose a refined methodology incorporating detailed Facebook impression data. We could not adopt this approach due to data limitations, but future research should explore it further.

Although we examined how empathy affects sales, likes, and purchase intentions, we did not explore variations in its effects on different kinds of complainers (e.g., with different levels of involvement). Future research could also consider how different prospective customer profiles lead to different reactions to various responses. Context and provider characteristics may also shape response effectiveness. For example, Antonetti and Crisafulli (2022) suggest that underdog brands should communicate differently in offline service failures. Similar provider differences may exist online.

Finally, future research could examine how different consumer characteristics influence the effectiveness of various types of empathy in service recovery. For instance, skeptical consumers could be more likely to interpret emotional communication as a persuasive tactic (Forehand and Grier 2003) or as a manipulative attempt (Ein-Gar & Levontin, 2013). Consequently, they may respond less positively to affective empathy, which could reduce the effectiveness of such responses in managing online complaints. Investigating such effects would provide valuable insights for service providers to tailor empathetic communication for consumers with different psychological traits.

Supplementary Information The online version contains supplementary material available at https://doi.org/10.1007/s11747-025-01114-4.

Acknowledgements We appreciate constructive comments and feedback during manuscript development from Artyom Golossenko, Yuliya Strizhakova, and Huy Tran.

Funding This research was funded by Alliance Manchester Business School for the first author.

Data availability Data are available on request from the authors.

Declarations

Ethical approval This research received ethical approval from the ethics committee at the University of Manchester.

Competing interests The authors declare that they have no conflict of interest.

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