

Influencing social media engagement: integrating insights from survey and eye-tracking research

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219

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Abstract

Purpose – Hospitality and tourism brands face the challenge of effectively building customer engagement (CE) on social media. Drawing on social psychology theories of influence, this study aims to examine how reciprocity and social proof affect hotels' Facebook CE performance and tests the moderating effect of gender on these relationships.

Design/methodology/approach – Data were collected from 360 participants in an online experimental survey (Study 1) and from 110 participants in a subsequent eye-tracking study (Study 2).

Findings – Results reveal that the impact of influence tactics on online CE performance varies by gender and across measures, including behavioral intention, attention and trust. Overall, the eye-tracking study's findings align more closely with the research hypotheses regarding attention.

Research limitations/implications – Results suggest that the effectiveness of engagement tactics depends on specific business goals, offering valuable insights for designing targeted social media strategies and future research.

Originality/value – This study advances understanding of firm-led CE strategies in hotel brands' social media by exploring the interplay of reciprocity, social proof and gender. The findings advocate for methodological designs that incorporate objective data in future CE research.

Keywords Customer engagement, Social media, Reciprocity, Social proof, Eye-tracking, Gender

Paper type Research paper

Introduction

Social platforms have become essential for brand engagement, surpassing review sites, traditional media and official tourism sites in influencing traveler inspiration (Thoppil, 2025). Customer engagement (CE), the cognitive, emotional and behavioral connection with



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a brand (Brodie *et al.*, 2011; So *et al.*, 2014), drives positive outcomes such as brand evaluation, trust, loyalty (de Oliveira Santini *et al.*, 2020; So *et al.*, 2016), brand-related knowledge, skills, stickiness (So *et al.*, 2024) and even happiness (Fang *et al.*, 2025). However, while social media facilitates brand diffusion and formation (Wang *et al.*, 2024), it also diminishes brand control over communication and can negatively affect customer/employee wellbeing (Dogru *et al.*, 2026). Furthermore, information overload makes it increasingly difficult for brands to capture attention, build trust and foster active interaction. Therefore, this research examines how hospitality brands can leverage social media influence tactics to enhance customer engagement.

Literature on CE and social media focuses predominantly on “what” CE is (i.e. its definitions, dimensionality, operationalization) and to some extent “how” it works in a nomological network of service relationships (Brodie *et al.*, 2011; Hollebeek *et al.*, 2014; So *et al.*, 2014), with limited attention to remaining theory-building blocks of “why” and “who, where, when.” Tourism and hospitality studies have considered a narrow set of mediators and moderators (Hao, 2020; So *et al.*, 2020). Research must clarify the CE nomological network, its underlying dynamics and its temporal and contextual boundaries. Empirical evidence CE’s formation and impact on social media is inconsistent; some studies report a strong link between CE and word of mouth, while others find only a weak association, leading to potentially unreliable conclusions and management guidelines (de Oliveira Santini *et al.*, 2020). Additionally, tourism and hospitality research has largely adopted a consumer-centric approach to the antecedents of online CE, rather than a business-centric approach to inform industry actions (So *et al.*, 2020). CE’s relationships with its antecedents and consequences likely vary by relationship nature (B2B vs B2C) and industry (service vs goods) (Pansari and Kumar, 2017). Digital consumer research should focus more on industry-specific and B2B/B2C contexts, which remain underexplored (Saikia and Bhattacharjee, 2024).

Firms use influence tactics (i.e. methods based on psychological principles) to persuade others (Cialdini, 2007). Given the social and interactive nature of social media, social influence – how individuals change attitudes and behaviors in response to others (Cialdini, 2007) – is likely to shape online CE. While many researchers investigate the effectiveness of influence tactics, findings remain mixed and highly context dependent (Guadagno *et al.*, 2013; Otterbring and Folwarczny, 2024; Roethke *et al.*, 2020). Moreover, limited research examines how influence tactics interact with one another and with other factors (Roethke *et al.*, 2020), underscoring the need for further investigation into how firms can design and deliver influence tactics that effectively promote online CE in hotel branding.

Notably, researchers have highlighted the importance of a deeper understanding of customer attention and engagement with tourism stimuli (Wang and Sparks, 2016). While CE research has relied primarily on self-reports (So *et al.*, 2020), these methods are prone to cognitive biases (Wang and Sparks, 2016). Also, many studies adopt single measurements that fail to capture CE’s full complexity (Trunfio and Rossi, 2021). So *et al.* (2021) hence called for more research using multi-source data and mixed methods to unravel the multifaceted nature of CE.

This study draws on the literature on influence and persuasion (e.g. Cialdini, 2007) to examine the effectiveness of hotel brands’ Facebook posts in enhancing CE responses. A hotel’s Facebook community serves as the setting for this research. With over 3 billion monthly active users, Facebook is one of the most popular social media platforms for brand research. It also has the largest global social media advertising audience among individuals aged 18 and over, with a total potential reach exceeding 2.28 billion users, surpassing both Instagram and TikTok (DataReportal, 2025; Kemp, 2025). Using both an online experiment

and a laboratory-based eye-tracking study, we investigate how two influence tactics – reciprocity (returning benefits) and social proof (conforming to others’ behaviors) – affect CE, attention and trust (customer confidence in a brand’s reliability).

We also examine gender as a moderator for both theoretical and practical considerations. Theoretically, gender is fundamental for understanding differences in perceptions, attitudes and consumption and decision-making behaviors (Li *et al.*, 2025). Practically, gender is a key demographic in hotel marketing – highly visible and straightforward to target with tailored strategies. Societally, gender roles shape sociocultural norms and practices, making gender a crucial factor in studying social influences (Chai *et al.*, 2011). Despite its prominence, notable knowledge gaps remain, as evidence on gender differences in social influence is inconsistent. Given that women make 80% of travel decisions (Stengel, 2017), understanding gender differences in response to social media marketing is practically and theoretically essential.

This study contributes to the literature in four ways. First, it addresses the need for research on dynamic relationships within the CE nomological network in the context of consumer brands on social media, focusing on the design and delivery of firm-led CE strategy (Perez-Vega *et al.*, 2018; So *et al.*, 2020). Second, the study advances knowledge of social media networks as a strategic communication tool, the interplay of influence strategies in enhancing online CE and the role of gender, thereby enriching research on online CE strategies and gender differences in response to tourism promotions. Third, methodologically, it explores new approaches to monitoring and measuring online CE, presenting a multi-method solution that uses multiple measures of a construct collected through different methods. Finally, the findings offer practical guidance for designing, developing and maintaining hotel brands’ strategic social media communication.

Theoretical background

Online customer engagement

Social media’s inherently social nature distinguishes CE marketing from traditional relationship marketing by extending the dyadic customer–brand relationship to a networked view of resource-sharing and co-creation (Harmeling *et al.*, 2017). Common performance measures of social media CE fall into three groups. The first includes metrics such as likes, shares and comments (e.g. Chen *et al.*, 2025; Hao, 2020), which directly reflect active engagement. While certain Facebook post types generate more interactions, more research is needed on how effective post content and style foster CE.

The second group centers on attention-related measures. Capturing customer attention is crucial, especially in today’s information-saturated environment (Wang and Sparks, 2016). However, consumer attention on interactive, many-to-many communication platforms remains under-researched. Self-reported attention data are limited by conscious reflection, whereas attention often operates unconsciously (Scott *et al.*, 2019). Eye-tracking technologies, in contrast, enable objective, real-time measurement of unconscious attention and engagement and are increasingly used to study consumer behavior. Researchers advocate a deeper exploration of eye-tracking in attentional studies in tourism, particularly to understand advertisement perception and consumer attention to marketing information (Scott *et al.*, 2019). They also call for innovative, objective experimental biometric measures of CE, such as assessing visual attention through eye-tracking (Hao, 2020; Trunfio and Rossi, 2021).

The third category of CE performance measures is its impact on outcomes like customer trust – defined as the consumer’s willingness to rely on a brand’s ability to deliver on its promises (Chaudhuri and Holbrook, 2001). Many studies link CE to

consumer trust (e.g. [Li et al., 2020](#); [So et al., 2016](#)), and customers assess a brand's trustworthiness through its reputation, performance and appearance. A brand's online appearance is largely conveyed through interface design ([Beldad et al., 2010](#)). Social media communities' CE practices can influence brand trust through information dissemination and sharing ([Laroche et al., 2012](#); [Sung and Lee, 2023](#)). Despite the growing importance of measuring CE performance outcomes, most studies offer partial measurements that do not allow CE to be represented across diverse aspects ([Trunfio and Rossi, 2021](#)). [Trunfio and Rossi \(2021\)](#) therefore urged the adoption of diverse measures for a holistic understanding of CE's multidimensional and polysemic nature.

Understanding what drives CE performance is as important as measuring its outcomes. Both social media and hospitality contexts, characterized by high interpersonal interaction, are fertile ground for social influence to shape CE. Social influence, the process by which individuals change their attitudes and behaviors under the influence of others ([Guadagno et al., 2013](#); [Roethke et al., 2020](#)), has been a primary interest to researchers and practitioners aiming to enhance CE ([Huang et al., 2025](#); [Kong and Lou, 2026](#)). Several taxonomies of influence tactics exist, such as informational and normative ([Dong et al., 2021](#)), and compliance, identification and internalization ([Lu et al., 2020](#)). Among these, [Cialdini's \(2007\)](#) six universal principles of reciprocity, social proof, consistency, scarcity, liking and authority are the most widely adopted.

This study focuses on two influence tactics, reciprocity and social proof, for three reasons. First, these two tactics are among the most widely used tactics and are important across domains, and in both offline and online environments. However, their effectiveness is context-dependent ([Otterbring and Folwarczny, 2024](#)), and further research is needed on how they shape CE specifically in social media interactions with hotel brands. Second, they are highly relevant to hospitality and social media. Reciprocity – the tendency to return benefits received ([Cialdini, 2007](#); [Falk and Fischbacher, 2006](#)) – is particularly relevant to hotels, which regularly use strategies such as room upgrades, complimentary amenities and discounts ([Lee et al., 2015](#)), and is central to social media interactions ([Lewis, 2015](#)). Social proof is the tendency to change one's behavior to conform with that of others ([Cialdini, 2007](#)). It is also popular in the hotel industry through tactics such as user ratings and social proof badges ([Xu and Luo, 2023](#)), and on social media through cues like follower counts, likes and comments, which drive herding effects and shape CE ([Kong and Lou, 2026](#)). Third, both reciprocity (e.g. small gifts or discount vouchers) and social proof (e.g. visible like counts or review numbers) are easily manipulated and observed ([Roethke et al., 2020](#)), making them ideal for experimental research and practical application.

Despite extensive research, the effectiveness of influence tactics remains inconclusive because outcomes depend on the specific tactic, context and individual differences ([Roethke et al., 2020](#); [Guadagno et al., 2013](#)). Most prior social media studies have narrowly focused on engagement metrics, offering limited insight into how different tactics influence broader CE outcomes, such as attention and trust, particularly in hospitality contexts. Existing work has also overlooked the dynamics between different influence tactics and between tactics and consumer characteristics ([Roethke et al., 2020](#)). To address these gaps, this study adopts a mixed-method approach combining a self-report survey and an eye-tracking experiment to examine how reciprocity and social proof affect CE outcomes (i.e. customers' intention to engage with, pay attention to hotel Facebook posts and trust in the hotel), and to explore the interplay between these tactics and gender differences.

Research hypotheses

Reciprocity is the tendency to return favors and retaliate against hostile actions (Falk and Fischbacher, 2006). In consumer behavior, reciprocity tactics manifest as special deals, free gifts, coupons or information offered by businesses to encourage positive responses such as repeat purchases and word of mouth (Cialdini, 2007). Reciprocity functions both personally and socially as violators may be sanctioned and labeled as freeloaders and takers (Clark and Kemp, 2008). Social exchange and network exchange theories view reciprocity as a process of weighing rewards and costs and response to perceived kindness and unkindness (Suma, 2016). When a hotel offers a Facebook-fan-only discount, it initiates a social exchange, and consumers with strong reciprocity norms are likely to respond to restore the balance. Facebook interactions follow reciprocity rules (Suma, 2016), and online exclusive discounts can effectively induce favorable brand behaviors (Kim and Tanford, 2021).

Limited empirical evidence exists on the influence of reciprocity on trust in social media. Marketing research suggests that consumer trust stems from word of mouth rather than from advertising messages on social networks (Nielsen, 2015). While reciprocity tactics, such as free upgrades and vouchers, generate customer interest, they do not directly convey honesty, credibility or trustworthiness. Hence, reciprocity does not necessarily increase consumer trust unless validated by others. We propose an association between reciprocity and CE intention and attention, but not trust:

- H1. The use of a reciprocity tactic is positively associated with (a) customer intention to engage with a hotel Facebook post, and (b) attention to the post.

Social proof is the tendency to do what others do (Cialdini, 2007). Individuals engaging in social proof consider what may be effective and take adaptive action. Social proof differs from subjective norm in the theory of planned behavior, which relates to perceived social pressure from important others (Reynolds *et al.*, 2015). Despite this conceptual difference, both can lead to adaptive behaviors following what others do. Research shows that social proof significantly shapes customer attitudes and behaviors, such as the impact of online travel reviews on booking decisions (Park and Lee, 2025) and the promotion of pro-environmental behaviors among hotel guests (Lunkes *et al.*, 2025).

People join online communities to fulfill psychological and social needs (Laroche *et al.*, 2012). In online communities, people align with groups they identify with, thereby expressing their self-identity (So *et al.*, 2014). Brand community members share a sense of duty, consciousness and traditions (Laroche *et al.*, 2012), leading them to view others' behaviors as effective and appropriate, and to follow suit. Similarly, fans of a brand's Facebook page are influenced by shared group identity and norms. Social proof influences compliance intention in the online text-based communication context (Guadagno *et al.*, 2013) and user registration on e-commerce platforms (Roethke *et al.*, 2020).

Social proof cues also direct visual attention. Social and visual attention are shaped by social cues and relationships (Capozzi *et al.*, 2016; Gallup *et al.*, 2012). In online hotel booking, social proof badges (e.g. "guest favorite") quickly capture customers' attention, indicating that consumers focus on hotels favored by others (Xu and Luo, 2023). Likewise, frequent herding messages (e.g. "others are buying") increase consumer interest and visual attention in live streaming interface (Chen *et al.*, 2023). Social proof is also a key website characteristic that influences trust in technology-mediated online interactions (Seckler *et al.*, 2015). Furthermore, social proof can reduce privacy concerns and therefore enhance users' trust in digital services (Schneider *et al.*, 2020). Social proof is most influential in ambiguous situations and/or when individuals perceive commonalities with others (Cialdini, 2007), such as in social media-based brand communities. Therefore, we propose:

- H2. The use of a social proof tactic is positively associated with (a) customer intention to engage with a hotel Facebook post, (b) attention to the post and (c) trust in the hotel.

Gender differences in social influence have long been debated, with several reviews since the 1970s (e.g. [Eagly and Carli, 1981](#)). As a stable and observable characteristic and one of the most widely used segmentation variables, gender directly shapes consumer behaviors and attitudes and often works as a moderator ([Horrich et al., 2024](#); [Mendoza-Moreira et al., 2025](#)). Prior research has documented gender differences across a range of online behaviors; yet, evidence on gender differences in social influence remains inconsistent. Some studies found that females are more socially oriented and influenceable ([Horrich et al., 2024](#); [Li et al., 2025](#)), while others reported that males are more persuadable ([Moreland, 2010](#)) and responsive to social norms ([Sohaib et al., 2018](#)). These inconsistencies highlight the need for further investigation across diverse contexts ([Mendoza-Moreira et al., 2025](#)).

Similarly, research on gendered reciprocity has yielded mixed results. Some reported that females are more likely to reciprocate than males ([Alrawadieh and Alrawadieh, 2022](#); [Buchan et al., 2008](#)), while others found no gender differences in reciprocity ([Groep et al., 2020](#)). Evidence on gender's moderating role in reciprocity is also inconclusive. [Chai et al. \(2011\)](#) revealed that females place greater value on reciprocity and thus engage in more knowledge sharing in blogging communities, while [Hwang et al. \(2015\)](#) reported no gender differences in how reciprocal relationships shape trust in service encounters. In organizational contexts, gender moderated the relationship between perceived organizational support and employee citizenship behavior ([Thompson et al., 2020](#)), but not between organizational support and employee life satisfaction ([Alrawadieh and Alrawadieh, 2022](#)).

Social proof also appears to be influenced by gender. Research suggests that females conform more readily, possibly due to higher social needs or a desire to maintain group harmony rather than greater susceptibility ([Eagly and Carli, 1981](#); [Jia et al., 2024](#)). Females respond more than males to social influence cues, such as (e.g. others' prior decisions on a friend network and online consumer reviews) when making purchase decisions ([Bae and Lee, 2011](#); [Jia et al., 2024](#)). The influencer attribute of perceived coolness plays a pivotal role in establishing trustworthiness, and this association is stronger among females ([Amin, 2024](#)). Others suggest that males may be more susceptible under certain conditions: they are more easily persuaded when shared identity is low ([Moreland, 2010](#)), display greater online conformity in difficult or logical tasks ([Rosander and Eriksson, 2012](#)) and respond more strongly to social norms in word-of-mouth scenarios ([Sohaib et al., 2018](#)). [Mendoza-Moreira et al. \(2025\)](#) further show that gender moderates the effect of informational cues on perceived credibility of word of mouth, but not on customer engagement. These findings link gendered online attitudes and behaviors to the differing ways that males and females perceive and handle social relationships. We therefore propose:

- H3. Gender moderates the association between a reciprocity tactic and (a) customer intention to engage with a hotel Facebook post and (b) attention to the post.
- H4. Gender moderates the association between a social proof tactic and (a) customer intention to engage with a hotel Facebook post, (b) attention to the post and (c) trust in the hotel.

[Figure 1](#) illustrates the conceptual model.

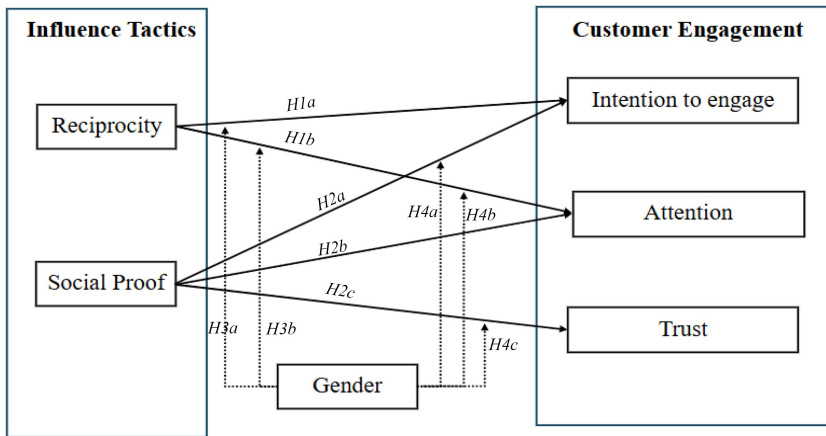


Figure 1. Conceptual model
Source: Developed by authors

Study 1

Research methods

Using a 2×2 between-subjects experimental design, we investigated the effects of three independent variables – reciprocity, social proof and gender – on three dependent variables: intentions to engage, attention and trust. Study 1 collected data via an online experiment.

Simulation material design and testing. Materials consisted of simulated Facebook posts that manipulated the influence tactics of reciprocity and social proof, set within a hypothetical scenario in which the fictitious hotel brand Emerald Renaissance was launching a new five-star beachfront hotel and using posts to engage customers online. This approach minimizes participants' prior associations with location, brand or past experiences. A professional digital designer created the simulated Facebook posts. We conducted two pretests with 87 and 240 Facebook users recruited via MTurk to assess the operationalization of the independent variables. A subsequent pilot test with 243 MTurk participants evaluated manipulation checks, scenario realism, logistics and instrument validity and reliability. All posts featured consistent elements: hotel name, logo, the text “Check out the new pool at Emerald Renaissance!”, and a hotel pool image sourced from Google Images with usage rights (see Appendix A in Supplementary Materials for an example post).

Manipulation and realism checks. We operationalized reciprocity as a special offer to Facebook fans with a request for their reciprocal engagement actions. The manipulation includes the presence or absence of a Facebook fan-exclusive promotion reflected in the text: “We have an exclusive promotion for Facebook fans at \$129/night with complimentary buffet breakfast for two! Activate the deal now by liking, commenting, or sharing this post, and we will throw in a bottle of champagne!”. Social proof suggests people infer value from others' actions (Cialdini, 2007). We manipulate social proof by the presence or absence of two elements:

- (1) text saying “900 people have already liked this post!”; and
- (2) the “Like” button at the bottom of the post showing the number of likes for the post.

We conducted manipulation checks for reciprocity and social proof using two items rated on seven-point Likert scales, and realism was assessed with five questions adapted from Sparks *et al.* (2016). See Appendix B in Supplementary Materials for details.

Dependent variables. Customers' behavioral intention to engage with the post (CE intentions) was measured by participants' intention to like, share and comment, using items adapted from Alhabash *et al.* (2015) and Huh *et al.* (2009). Attention was measured using three self-report items: "The Facebook post captured my attention," "I paid a lot of attention to the Facebook post" and "I focused a great deal of attention to the Facebook post." Items measuring trust in the hotel were adapted from Sparks *et al.* (2016). All items used a seven-point Likert-type scale (Appendix B).

Participants and data collection procedure. The sample consisted of American Facebook users aged 18 and over, recruited via MTurk. While MTurk samples differ from the general US population, they effectively reach active online consumers – the target audience for online business engagement. Respondents first reviewed a project information sheet detailing the study's purpose, anonymity, confidentiality, data handling and potential risks. Survey completion and submission indicated their consent to participate. After confirming Facebook use, participants were introduced to the hypothetical Emerald Renaissance scenario and randomly assigned to one of four experimental conditions. They reviewed the post, indicated their intention to like, share or comment, provided feedback on the post and hotel, and supplied socio-demographic information. Data were collected from 360 participants across reciprocity, social proof and gender conditions, with university ethics approval. Sample profiles are provided in Appendix C in Supplementary Materials.

Results

Manipulation checks indicate successful manipulation of reciprocity and social (see Appendix D in supplementary materials for details). A series of 2 (reciprocity) \times 2 (social proof) multivariate analyses of variance (MANOVA) and covariance (MANCOVA) were performed on CE intentions, attention and trust in the hotel, with univariate follow-up tests, to test the hypotheses. Control variables included in the MANCOVA are age, education level, income and gender. Assumptions were met: homogeneity of variance-covariance matrices (Box's $M = 26.80$, $p = 0.091$) and multivariate normality (AMOS 21; multivariate critical ratio = 2.39) (Bentler, 2005). Other test assumptions (adequate cell size, univariate normality and linear relationships) were satisfied.

Table 1 summarizes univariate level results. Reciprocity had a significant main effect on CE intention, $F(1, 300) = 7.95$, $p < 0.001$, partial $\eta^2 = 0.026$, with higher scores in the reciprocity condition ($M = 4.71$, $SD = 1.68$) than in the control ($M = 4.04$, $SD = 0.80$). Social proof had no main effect on CE intentions, rejecting $H2a$. Level of education had a positive effect on CE intentions ($p < 0.05$). Reciprocity also significantly affected attention ($H1b$), $F(1, 300) = 4.93$, $p < 0.05$, partial $\eta^2 = 0.016$, with higher attention for reciprocity posts ($M = 5.81$, $SD = 0.98$) than for no reciprocity ($M = 5.56$, $SD = 0.95$). Social proof had no main effect on attention ($H2b$). Control variables did not affect attention.

A significant two-way interaction between reciprocity and social proof was found for attention, $F(1, 300) = 3.91$, $p < 0.05$, partial $\eta^2 = 0.013$. A simple-effects test, $F(1, 300) = 11.30$, $p < 0.01$, showed that within the no-social proof condition, attention scores were significantly higher for reciprocity than for no reciprocity. No significant difference occurred within the social proof condition, $F(1, 300) = 0.29$, $p = 0.87$. Thus, the effects of reciprocity and social proof on consumer attention are interdependent (Figure 2): when a post lacks social proof, reciprocity increases attention; this effect does not occur when social proof is present.

Table 1. Study one results

Factors	CE intentions (a)		Attention (b)		Trust (c)	
	$F(1, 301)$	η_p^2	$F(1, 301)$	η_p^2	$F(1, 301)$	η_p^2
H1. Reciprocity	9.82**	0.032	5.59*	0.019	-	-
H2. Social proof	ns	ns	ns	ns	ns	ns
H3. Reciprocity × gender	ns	ns	ns	ns	-	-
H4. Social proof × gender	ns	ns	ns	ns	ns	ns

Note(s): Results are estimated at the univariate level after controlling for age, education and income. “-” denotes “not hypothesized.” The effect of social proof × gender is significant without the controls but not significant with the controls

Source(s): Developed by authors

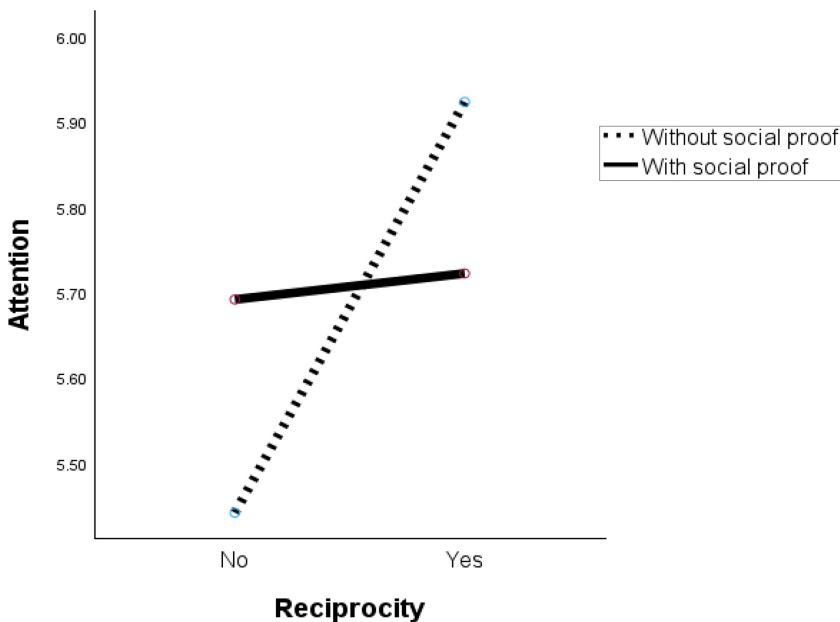


Figure 2. Reciprocity × social proof interaction with attention
Source: Developed by authors

Social proof is not associated with trust in the hotel (H2c). However, a significant two-way interaction emerged for reciprocity × social proof, $F(1, 300) = 5.13, p < 0.05$, partial $\eta^2 = 0.017$, on trust. A simple-effects test showed no significant difference within the social proof condition, $F(1, 300) = 0.896, p = 0.345$. In the absence of social proof, $F(1, 300) = 5.87, p < 0.05$, trust scores for the reciprocity condition ($M = 5.60, SD = 0.93$) were significantly higher than the no-reciprocity group ($M = 5.21, SD = 1.18$). Pairwise comparisons show a crossover (complete) interaction effect, as Figure 3 illustrates. When social proof is absent,

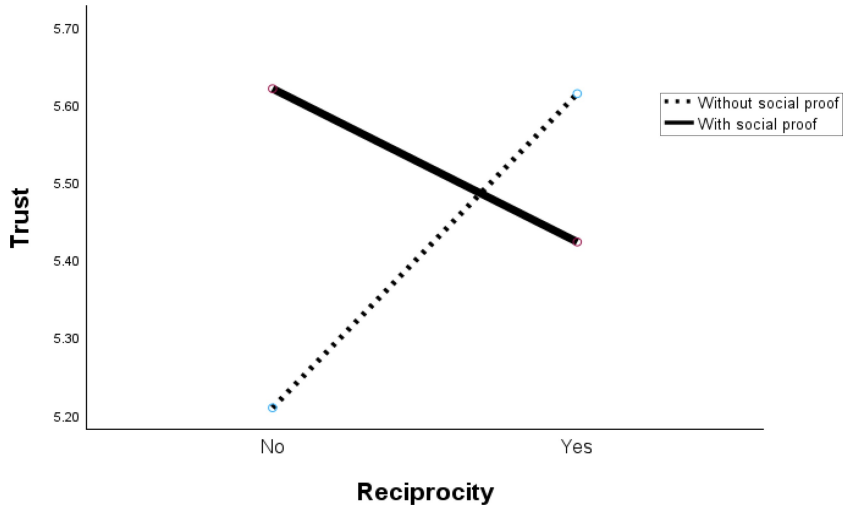


Figure 3. Reciprocity × social proof interaction on trust in hotel
Source: Developed by authors

reciprocity leads to higher trust than no reciprocity. The reverse is not evident when the post provides social proof.

We control for age, education level and income in testing gender’s moderation effect. No evidence suggests that gender moderates the relationships between reciprocity and CE intentions, attention and trust, rejecting *H3a-c*. In the MANOVA without controls, a significant two-way interaction emerged for social proof x gender, $F(1, 356) = 4.07, p < 0.05$ partial $\eta^2 = 0.011$, on CE intentions (*H4a*), but not on attention (*H4b*) or trust (*H4c*). A simple-effects test, $F(1, 356) = 3.13, p < 0.10$, showed that for females, CE intention was significantly higher in conditions with no social proof ($M = 4.66, SD = 1.67$) than with social proof ($M = 4.14, SD = 1.92$) at $\alpha = 0.10$. No significant difference occurred within the male group, $F(1, 356) = 0.93, p = 0.336$. The pairwise comparisons also show a crossover effect. However, the interaction effect is no longer significant after accounting for participants’ level of education ($p < 0.05$), age ($p < 0.05$) and income ($p > 0.05$). This suggests that the observed interaction effect is not independent of education and age. Further tests reveal no three-way interaction effect between reciprocity, social proof and gender.

Study 2

Research methods

We conducted an eye-tracking study to objectively assess visual attention and examine attention-related hypotheses. Participants in Australia were recruited via convenience and snowball sampling, including direct campus intercepts, emails to personal and professional networks and participant referrals. Australia and the US share similar cultural and socioeconomic backgrounds, which allows us to assess the consistency and generalizability of the findings across contexts that are both different and comparable. Data were collected in an eye-tracking lab using a Tobii T120 Eye Tracker, integrated into a 17-inch monitor. Participants must be Facebook users and have normal (or corrected-to-normal) vision. We

acknowledge the nonprobability nature of the sample. As is typical in eye-tracking research, the sample size was small and not intended to be representative.

Participants were randomized to freely view the same set of Facebook posts as normal on the monitor. Both self-reported and eye-tracking attention data were collected. The study collected 110 valid responses, exceeding the 12–63 range typical in tourism eye-tracking studies (Scott *et al.*, 2019), with a cell size of 27 respondents (see Appendix C in Supplementary Materials for sample profiles). Facebook posts were set as areas of interest (AOI) for analysis. Two common eye-tracking measures – total fixation duration (TFD) and total visit duration (TVD) (Scott *et al.*, 2019) – are the data of interest. TDF measures the time participants meaningfully focused on the posts, while TVD reflects the total time spent viewing them.

Results

Manipulation checks indicate successful manipulation of reciprocity and social (see Appendix D in Supplementary Materials for details). Following Study 1's analysis, we examined the effects of reciprocity, social proof and gender on visual attention using self-reported attention, TFD and TVD. Data met assumptions of homogeneity and multivariate normality. Due to nonnormal distributions, log-transformed TFD and TVD values were used for hypothesis testing (Kolmogorov–Smirnov and Shapiro–Wilk tests, $p < 0.01$). Posts were standardized in size and format, and z-standardized TVD and TFD values were used to account for individual differences in viewing speed, reading ability and attention span. For interpretability, means and standard deviations for each condition are calculated from the untransformed data set. We report the results controlling for age, income and education level.

Reciprocity had a significant main effect on TFD (*H1b*), $F(1, 102) = 17.44$, $p < 0.001$, partial $\eta^2 = 0.146$; TFD scores were higher in the reciprocity condition ($M = 15.70$, $SD = 9.29$) than in the controlled condition ($M = 9.78$, $SD = 5.91$), indicating more visual attention to posts. Social proof showed no main effect of social proof (*H2b*). An interaction effect between reciprocity and social proof emerged, $F(1, 102) = 4.68$, $p < 0.05$, partial $\eta^2 = 0.044$, on TFD (Figure 4). TFD was higher when reciprocity was present ($M = 18.10$, $SD = 9.64$) than when it was absent ($M = 9.94$, $SD = 6.87$), contradicting earlier findings where the mean difference was observed only within the no social proof condition. Age, education level and income had no effect.

For TVD, reciprocity had a significant main effect, $F(1, 102) = 37.18$, $p < 0.001$, partial $\eta^2 = 0.267$ (*H1b*), with TVD scores higher in the reciprocity condition ($M = 25.20$, $SD = 13.10$) than in the controlled ($M = 14.21$, $SD = 7.51$). When exhibiting reciprocity,

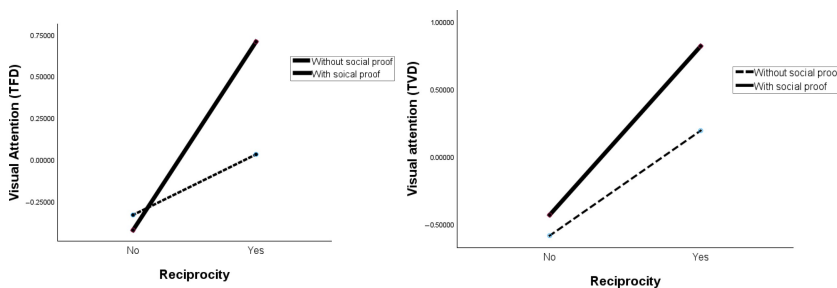


Figure 4. Reciprocity × social proof interaction with TFD and TVD

Source: Developed by authors

participants looked at the Facebook posts longer. Social proof's effect is also significant, $F(1, 102) = 5.32, p < 0.05$, partial $\eta^2 = 0.050$, on TVD ($H2b$), with higher TVD scores in the social proof condition ($M = 22.03, SD = 13.43$) than in the controlled condition ($M = 16.84, SD = 9.39$). No interaction effect exists between reciprocity and social proof on TVD. Age, education level and income had no effect.

For self-reported attention, an ANOVA revealed no significant main effect for reciprocity ($H1b$). There is a significant interaction effect between reciprocity and gender [$F(1, 103) = 3.99, p < 0.05$, partial $\eta^2 = 0.037$]. Attention is higher when reciprocity is present ($M = 4.87, SD = 0.12$) than when it is absent ($M = 4.36, SD = 0.13$) for females but not males (Figure 5). Consistent with Study 1, social proof does not affect attention ($H2b$). Income has a significant effect, whereas age and education level do not.

There was a significant interaction between social proof and gender on TFD, $F(1, 102) = 7.24, p < 0.01$, partial $\eta^2 = 0.066$. Among females (Figure 6), TFD was higher with social proof ($M = 17.20, SD = 10.27$) than without ($M = 10.14, SD = 7.56$). Social proof also significantly affected TVD [$F(1, 102) = 5.037, p < 0.05$ partial $\eta^2 = 0.047$], with a significant social x gender interaction effect, $F(1, 102) = 7.25, p < 0.01$ partial $\eta^2 = 0.066$ (medium size). Among females, TVD was higher with social proof ($M = 36.42, SD = 15.16$) than without ($M = 15.01, SD = 9.81$). Age, education level and income had no effect. Consistent with Study 1, self-reported attention scores showed no significant main or interaction effect for social proof and gender.

Discussion and conclusions

Conclusions

This study examines the effects of reciprocity ($H1a-b$) and social proof ($H2a-c$) on social media CE, with gender as a moderator for reciprocity ($H3a-b$) and social proof ($H4a-c$). We used a multi-measure approach to test hypotheses related to visual attention ($H1b, H2b, H3b, H4b$), using self-reports (Study 1) and eye-tracking (Study 2). Table 2 summarizes the

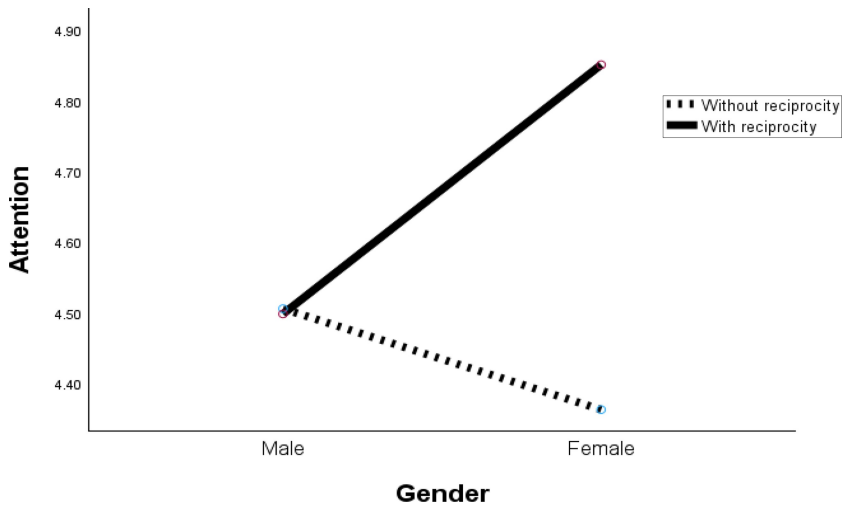


Figure 5. Reciprocity \times gender interaction with attention
Source: Developed by authors

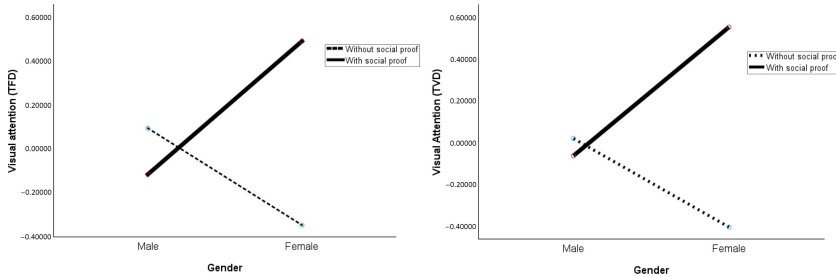


Figure 6. Social proof \times gender interaction with TFD and TVD
Source: Developed by authors

Table 2. Comparison across measures of visual attention

Hypothesis	Independent variable	Eye-tracking study			Online survey
		TFD	TVD	Self-report	Self-report
H1b	Reciprocity	S*	S*	NS ($p < 0.1$)	S*
H2b	Social proof	NS ($p < 0.1$)	S*	NS	NS
H3b	Gender \times reciprocity	NS	NS	S*	NS
H4b	Gender \times social proof	S*	S*	NS	NS

Note(s): S = supported; NS = not supported, $*p < 0.05$

Source(s): Developed by authors

findings from both studies. Reciprocity significantly affected customers' CE intention and attention, whereas social proof did not enhance CE intention, likely owing to a lack of a strong shared identity within the studied community. Differentiating between network-based and small-group-based virtual communities is important as community type moderates social influence (Dholakia *et al.*, 2004). Facebook fan communities are network-based, with members loosely connected through the brand, resulting in weaker influence and trust than groups formed around personal relationships. Additionally, the perceived expertise of influence agents matters (Amin, 2024); in this context, fan community members may not be seen as experts in hotel services, reducing the impact of social proof. Although social proof did not influence intentions to like, share and comment, self-reported attention, we observed notable two-way interactions between reciprocity and social proof on trust in the hotel; the effect on trust was significant only when social proof was absent.

Our findings on gendered responses to engagement merit attention. Gender did not moderate the relationship between reciprocity and CE. However, gender patterns for social proof were more nuanced. Without controls, gender appeared to moderate social proof's effect on CE intentions: females engaged more with Facebook posts lacking social proof, while social proof reduced their engagement intentions. This moderating effect, however, became nonsignificant after controlling for income, education and age, suggesting that these demographic factors, rather than gender itself, drive the observed differences. This aligns with arguments that gendered patterns often reflect broader socioeconomic and sociocultural contexts (Mendoza-Moreira *et al.*, 2025). Our findings suggest that gender differences in influence and influenceability likely stem from gaps in social or economic position. Although gender effects on self-reported attention did not emerge, eye-tracking measures revealed significant gender

differences in visual attention to social proof. These differences may be rooted in biological and evolutionary mechanisms, such as differential hormonal exposure and brain region activation between females and males (Hwang and Lee, 2018). Such results highlight the value of biometric measures, which can capture subtle differences not evident in self-reports.

As Table 2 shows, results are largely consistent for reciprocity (H1b) but differ significantly between self-reported and eye-tracking measures for social proof (H2b) and gender (H3b and H4b). There is internal consistency within each data type (i.e. between TFD and TVD, and between the two self-report sets). We tentatively attribute these discrepancies to the nature of the data. Overall, the eye-tracking results aligned more closely with the research hypotheses, likely due to their greater objectivity in measuring attention. This not only supports some otherwise rejected hypotheses but also underscores the value of multi-method research designs.

Theoretical implications

This study offers empirical evidence to address calls for more research on how hotel brands engage customers through social media and on how to stimulate and leverage CE behaviors among brand fans. Our findings reveal the dynamic interplay among influence tactics and between these tactics and other factors in influencing CE and attitudes. The findings show that different factors drive engagement intentions, attention and trust. While some results align with established influence strategies, notable surprises emerged – such as the lack of gender moderation on reciprocity's effect and the ineffectiveness of social proof alone in driving behavioral or visual engagement and trust. These insights clarify how social media can shape the boundary of influence strategies.

This study advances understanding of how social proof interacts with other factors to shape CE. While MANOVA results suggest that females engaged more with Facebook posts lacking social proof than males, the interaction becomes nonsignificant in MANCOVA, controlling for income, education and age. Thus, the observed gender effect is likely driven by demographic factors rather than gender itself. Complementing this, gender differences in eye-tracking measures – but not self-reported attention – suggest that biological factors also play a role. Theoretically, this indicates that what appears to be a gendered response may reflect both biological differences and broader socioeconomic patterns (Hwang and Lee, 2018; Mendoza-Moreira *et al.*, 2025). Regarding the interaction between social proof and reciprocity on self-reported attention and trust, it is the absence of social proof – not its presence – that made a difference, as the difference between non-reciprocity and reciprocity was evident only in the no social proof condition. Eye-tracking measures of visual attention suggest such a difference within the social proof condition, a finding that requires further verification. Although prior research has examined these tactics independently, their interactions are largely overlooked (Roethke *et al.*, 2020). We extend existing knowledge by showing that influence tactics may be interdependent and that their effects may be conditioned by demographic or contextual factors.

Methodologically, we illustrate the application of an approach incorporating multiple measures of variables. The use of eye-tracking data to complement self-reported data provides in-depth and validated insights into visual attention. Our findings reveal differences between self-reports and objective eye-tracking measures, reflecting individuals' conscious responses and subconscious reactions to visual engagement stimuli, respectively. While we cannot draw definitive conclusions about the hypotheses, the empirical evidence supports the need to incorporate objective data into CE research. The eye-tracking study's findings better aligned with our theoretical propositions about visual attention, possibly because the objective nature of the eye-tracking data enabled more sensitive discrimination among the stimuli.

While our findings add to the literature claiming the superiority of objective data over self-reports (Li *et al.*, 2018a, 2018b), we, in line with So *et al.* (2021), advocate a mixed-methods approach that leverages both self-reports and objective data for a more comprehensive understanding of CE. The subjective approach, using self-reports, captures individuals' attitudes, perceptions, motivations and reasoning, offering insight into why phenomena occur. In contrast, the objective approach relies on quantifiable behavioral records, physiological measures or digital footprints, providing concrete evidence of what has happened and enhancing scientific rigor. Combining these methods enables researchers to triangulate findings: linking the occurrence and extent of effects with their underlying causes, and yields a more nuanced and robust interpretation of the impact of influence strategies.

Practical implications

The findings assist the design, development and maintenance of hotel brands' new social media strategic communication efforts. While reciprocity and social proof are among social media marketing experts' most recommended strategies, our findings suggest that Facebook posts must be carefully designed in light of the goals they aim to achieve, as tactics vary in effectiveness across different goals.

When used alone, reciprocity is effective for engaging Facebook fans, whereas social proof may not enhance customers' engagement or attention. For trust building, combining reciprocity and social proof in post design is beneficial, in line with the significant interaction effect revealed in this study. However, this combination does not enhance online CE intention. Overall, our findings highlight the interdependence of influence tactics and underscore the importance of testing their effectiveness, both individually and in combination, before implementation. We found limited gender differences in responses to influence tactics. Therefore, gender alone may not be an effective basis for branding strategies. Brands should target more relevant demographic segments, such as income or education level, to more effectively drive online engagement.

Limitations and future research directions

Our use of simulated posts and hypothetical scenarios limits the findings to reciprocity and social proof's initial ability to engage customers, but their effects on sustained CE remain unclear. Future research should validate our findings and further examine social proof, ideally taking a quasi-experimental approach with a real hotel brand's Facebook community. Systematic comparisons between self-reported and objective data are also needed to guide decision-making when results diverge. Given the growing influence of AI (Law *et al.*, 2024) and newer platforms of TikTok and Instagram, future studies should examine influence strategies across these channels. The effectiveness of reciprocity and social influence may differ across hotel types, depending on customer motivations and engagement. Research should assess the broader applicability of our findings in other hotel settings. Responses to persuasion may vary by communication mode (e.g. email versus face-to-face; Guadagno and Cialdini, 2002), warranting verification of our findings in other contexts and exploration of the potential effects of social media-mediated communication on persuasion.

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Supplementary material

The supplementary material for this article can be found online.

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