First-Mover Advantage in Reciprocal Altruism: The Influence of Brand's Reciprocal Role on Consumer Prosocial Behavior

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Abstract

Against the backdrop of current emphasis on corporate social responsibility communication and disclosure, brand-stakeholder interactions have become important factors influencing people's participation in public welfare initiatives. As observers, individuals typically evaluate brands' profit-seeking philanthropic acts negatively. However, when a brand takes the initiative to provide benefits in a reciprocal relationship and subsequently receives returns, observers' responses toward the brand in new contexts exhibit greater prosociality than toward the reciprocating party. Specifically, this study investigates the mechanism and boundary conditions through which a brand's reciprocal role (initiator vs. reciprocator) influences consumers' prosocial behavior. Through one secondary dataset and four designed experiments, we find that: compared to the reciprocator role, a brand serving as the initiator in a reciprocal relationship enhances consumers' intrinsic motivation attribution for its philanthropic acts, thereby motivating them to actively engage in prosocial behaviors advocated by the brand. However, this effect reverses when the brand is labeled as alienating out-groups (vs. in-groups). This research enriches studies on the asymmetry and transitivity of reciprocal relationships, and complements first-mover advantages from the contextual perspective of resource circulation.

Full Text

Preamble

The Initiator Effect in Reciprocal Altruism: How a Brand's Reciprocal Role Influences Consumer Prosocial Behavior

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Abstract

Against the backdrop of increasing emphasis on corporate social responsibility communication and disclosure, brand-stakeholder interactions have become a critical factor influencing public participation in social welfare initiatives. As observers, individuals typically evaluate brands' profit-seeking 善行 (good deeds) negatively. However, when a brand initiates benefits and subsequently receives returns within a reciprocal relationship, observers exhibit greater prosociality toward the brand than toward the reciprocating party in new contexts. Specifically, this study investigates the mechanism and boundary conditions through which a brand's reciprocal role (initiator vs. reciprocator) influences consumer prosocial behavior. Through one secondary data analysis and four designed experiments, we find that compared to a reciprocator role, a brand occupying the initiator position in a reciprocal relationship enhances consumers' intrinsic motivation attributions for the brand's 善行, thereby motivating them to actively engage in prosocial behaviors advocated by the brand. However, this effect reverses when the brand carries a dissociative out-group (vs. membership group) label. This research enriches the literature on the asymmetry and transitivity of reciprocal relationships while complementing first-mover advantage research from the perspective of resource circulation contexts.

Keywords: prosocial behavior, reciprocal relationship, initiator, reciprocator, group label

Introduction

The dissemination and disclosure of social responsibility represent crucial avenues for brands to demonstrate their values and foster a positive social atmosphere. Governments, media outlets, and corporations strive to create greater economic and social value by narrating brand stories and disclosing corporate social responsibility and ESG (Environmental, Social, and Governance) information, thereby inspiring positive energy throughout society. For instance, in 2021, Meituan launched the "Qingshan Science and Technology Fund" to support scientific research groups, which not only yielded environmental innovation returns but also mobilized consumers to jointly advance environmental protection initiatives. Meanwhile, Master Kong positioned its poverty alleviation and disability assistance efforts as "giving back to society," driving consumer participation in brand-related public welfare communication and interaction. To encourage prosocial behaviors that enhance others' welfare, existing research has emphasized the importance of social relationships and interactions (Jung et al., 2020). This is not only because individuals can directly participate in prosocial interactions as actors (Spielmann, 2020), but also because they can observe social relationships among other members, cultivating their own proso-

ciality through learning and imitation (Jung et al., 2020). Previous studies have primarily focused on prosocial responses after observing social interactions among micro-level individuals such as relatives, romantic partners, and peers (Cakanlar et al., 2023; Zhao et al., 2022; Zhang et al., 2023), while paying less attention to brands as important group constituents. Although prior research has examined how the sequence of brand participation in charity and brand ethical behavior influence consumer evaluations (Newman & Brucks, 2018; Silver et al., 2021), this unidirectional giving perspective fails to situate brands within contexts of social exchange and conditional giving, overlooking reciprocal altruism where "help given to others is subsequently rewarded," and paying insufficient attention to consumers' prosocial responses after observing brand behavior. Given that many brands currently engage in extensive cooperation and mutual benefit with charitable organizations or peers through co-branding and online interactions, reciprocal relationships between brands and other social members—including other brands, consumers, and social groups—have become an important context influencing observers' prosocial decision-making. Consequently, it remains unknown whether individual behavioral responses differ based on exchange sequence when brands participate as focal actors in reciprocal relationships that will yield future returns. Therefore, this paper examines the relationship between brand reciprocal roles (initiator vs. reciprocator) and consumer prosocial behavior in new contexts, exploring their underlying mechanisms and boundary conditions.

By investigating the impact of brand reciprocal roles on consumer prosocial behavior, this study first deepens understanding of antecedents to prosocial behavior, providing empirical evidence for first-mover advantages in reciprocal relationships. Second, it identifies intrinsic motivation attribution as the underlying mechanism in consumers' prosocial responses. Finally, it identifies brand group labels as boundary conditions moderating the effect of brand reciprocal roles on consumer prosocial behavior. At the practical level, this research, grounded in brand marketing, offers recommendations for how brands and social organizations can efficiently guide sustainable consumption patterns from the broader perspective of social exchange.

1.1 Reciprocal Roles and Prosocial Behavior

In interpersonal interactions, reciprocal relationships manifest as one party's behavior triggering a response from another (Gouldner, 1960), as reflected in proverbs like "you throw a peach to me, I give you a white jade in return" and "no word goes unanswered, no kindness goes unrepaid." The initiator plays the role of "throwing the peach," being the first to perform a beneficial act and provide assistance, thereby launching the exchange decision for the other party (Molm, 2003; Cropanzano & Mitchell, 2005). If the beneficiary responds to the initiator's giving by returning corresponding resources or benefits, they become the reciprocator in the relationship, achieving bidirectional exchange through "returning the jade" (Cropanzano & Mitchell, 2005; Zou et al., 2012).

Reciprocity exists not only in micro-level social structures between individuals but also at the macro level among groups such as brands, social groups, and consumers (Blau, 1964). For example, as reciprocal participants, brands can exchange resources with other brands (Hoppner & Griffith, 2011), jointly fulfill social responsibilities with social groups (Chen & Huang, 2016), and organize discount activities and environmental protection initiatives for consumers (Goldstein & Cialdini, 2011; André et al., 2017; Xiong et al., 2018). Beyond economic exchanges of money and material goods, reciprocators can also express gratitude to fulfill emotional returns and satisfy the other's self-esteem needs (Cropanzano & Mitchell, 2005; Nowak & Roch, 2007). Reciprocal roles can be distinguished through textual and visual descriptions of behavioral sequence and causal relationships (Flynn & Yu, 2021; Sun & Yang, 2023).

This study proposes that a brand's reciprocal role influences consumer prosocial behavior as observers, thereby enhancing their positive response to the brand's initiatives. As observers, individuals reference exchange relationships among existing social members (Jung et al., 2020), meaning brand social relationships may influence consumers' prosocial decisions at other time points or in different contexts (Romani et al., 2016). When a brand positions itself as the initiator in a reciprocal relationship, observers typically associate this with the brand's spontaneous 善行 and positive qualities such as empathy, credibility, and concern for others (Becker-Olsen et al., 2006; Zheng et al., 2015). The brand thus exhibits higher altruistic proactivity and warmth traits, conveying positive intentions to create social welfare (Flynn & Yu, 2021; Giebelhausen et al., 2016), leading to more favorable evaluations (Silver et al., 2021). As a beneficiary, however, a brand's reciprocal acts may be interpreted as reducing guilt and complying with reciprocal obligations rather than stemming from goodwill (Peloza et al., 2013; Flynn & Yu, 2021). Importantly, because reciprocators may engage in deceptive behavior by refusing to repay received benefits, uncertainty about future returns obscures the moral taint arising from the initiator's self-interest-seeking (Newman & Cain, 2014). Given that consumers tend to establish new interactive relationships with more advantageous partners (Balliet et al., 2017), we infer that a brand's initiator role may more effectively stimulate consumers' positive response to its prosocial initiatives than a reciprocator role:

Hypothesis H1: When consumers observe reciprocal relationships between a brand and other members, the brand's initiator role more strongly motivates consumer prosocial behavior than its reciprocator role.

1.2 The Mediating Role of Intrinsic Motivation Attribution

According to attribution theory, individuals' interpretations of specific moral behaviors and events, as well as their corresponding cognitive responses, are influenced by inferences about intentions and motives (Heider, 1944). Intrinsic motivation refers to brands performing 善行 due to dispositional factors such as concern for moral domains, social charity, or moral obligations—for example, donating out of concern for others. The core characteristic of intrinsic motiva-

tion is that individuals derive pleasure and satisfaction from the activity itself (Ryan & Deci, 2000). Conversely, when consumers perceive a brand's 善行 as driven by environmental or situational factors, they question its intrinsic motivation (Heider, 1944), believing the brand's motive lies in avoiding punishment or gaining external recognition (Groza et al., 2011), thereby diverging from the event's original intention (Ryan & Deci, 2000).

Intrinsic motivation attribution is related to the stage of interpersonal relationship. When an actor first provides benefits to others, they may know little about the beneficiary's actual situation (Khodakarami et al., 2015). Moreover, in early relationship stages, benefit providers feel uncertain about the beneficiary's future behavior and how value will be created in the relationship (Verhoef et al., 2001). Therefore, altruistic decisions in initial relationship stages are typically influenced by intrinsic motivation (Khodakarami et al., 2015). Based on this, we speculate that a brand's initiator role more easily triggers consumers' perception of intrinsic motivation than a reciprocator role. This is because, in the exchange sequence, initiating benefits constitutes early behavior in a reciprocal relationship. The initiator acts beneficially without knowing whether the other party needs help, what kind of benefits are needed, whether they will reciprocate, or how they will do so. Consequently, the behavior more likely stems from support for and recognition of reciprocal beliefs. Related research indicates that focal actors' proactive social responsibility initiatives and traits such as morality and warmth reflect strong intrinsic motivation (Andreoni, 1990; Groza et al., 2011). In contrast, reciprocal behavior occurs in later stages of reciprocal relationships and is driven by social norms. The reciprocator's motive to repay debts and the brand's ambiguous altruistic traits deviate from the reciprocal relationship itself, reducing consumers' perception of intrinsic motivation behind the brand's 善行.

Intrinsic motivation attribution not only affects the actor (i.e., the brand) but also significantly influences interpersonal interactions. Research shows that when consumers attribute corporate social responsibility to intrinsic motivation, subsequent consumer responses become more positive (Kelley, 1973). Intrinsic motivation attribution enhances individuals' attitudes and purchase intentions toward companies (Ellen et al., 2006), as well as trust, recommendation intentions (Vlachos et al., 2009), and repeat patronage (Walker et al., 2010). Therefore, we propose that intrinsic motivation attribution mediates the effect of brand reciprocal roles on consumer prosocial responses:

Hypothesis H2: Intrinsic motivation attribution mediates the effect of brand reciprocal role (initiator vs. reciprocator) on consumer prosocial behavior.

1.3 The Moderating Role of Brand Group Labels

Brands can represent reference groups, triggering consumers' associations with brand user images and psychological benefits (Escalas & Bettman, 2003). Based on previous research, we employ membership group and dissociative out-group

as brand label classifications (hereinafter "membership brand" and "dissociative out-group brand") (White et al., 2014). Individuals in membership groups exhibit high similarity, and people perceive psychological distance to membership groups as relatively close (Yang et al., 2021). Dissociative out-groups, however, are groups people avoid associating with and do not identify with (Katherine & Darren, 2008), holding explicit negative associations and distancing motives (White et al., 2014). For example, adult clothing consumers may avoid contact with elderly clothing as a dissociative out-group because they do not wish to be associated with "old age." We focus on these two groups' influence on individual prosocial behavior for three reasons: First, individuals have relatively clear associations and attitudes toward membership and dissociative out-groups, which can strongly influence their own behavior (White & Dahl, 2006). Second, brands' prosocial and moral identities are closely linked to membership and dissociative out-group labels but weakly connected to other out-group types (Choi & Winterich, 2013). Finally, since dissociative out-groups typically trigger negative cognitions and attitudes, studying how dissociative out-group brands can motivate positive behavior holds theoretical and practical significance.

Group labels imply that brands adopt different approaches when responding to social norms, serving as important references for consumer attribution (Sherman et al., 2007). Membership groups more strongly activate social norms: membership brands should represent a cohesive, well-defined, norm-conforming group image (Rimal & Lapinski, 2015). Therefore, membership brands must not only commit to and fulfill social norms but also reinforce behaviors that implement social cooperation norms within the group to highlight their significance and value (Marques et al., 1998). When membership brands position themselves as initiators, the reinforcement of group norms enhances consumers' perception of intrinsic motivation, thereby increasing their own prosociality. Conversely, if membership brands position themselves as reciprocators, consumers may perceive them as merely following reciprocal norms, resulting in relatively lower intrinsic motivation perception and weaker positive prosocial responses.

In contrast, because dissociative out-group brands have weak connections with consumers' own groups, consumers even expect greater normative differences with dissociative out-group brands to avoid any potential association (Katherine & Darren, 2008; Marques et al., 1998). Consequently, consumers typically ignore dissociative out-group brands' behavioral motives or even avoid making motivational attributions. However, consumers may contrast and reflect on counter-exemplar groups to identify factors that could threaten their self-concept (Shalev & Morwitz, 2011; White & Dahl, 2006). This process may lead people to infer that the average level of focal characteristics in the population is higher than they expected, thereby lowering their evaluation of their own level ("If even bankrupt people are donating, ordinary people must be more willing to donate than I am"), ultimately leading them to engage in behaviors that reinforce their self-concept (Shalev & Morwitz, 2011). The reciprocator role conveys a positive image without reinforcing in-group norms, making consumers more likely to accept and support dissociative out-group brands' reciprocal behavior,

thereby being motivated by their actions and enhancing their own prosociality. However, if dissociative out-group brands position themselves as initiators, consumers struggle to understand their benefit-initiating behavior through motivational attribution. Research indicates that, due to collective image motives, when consumers learn that dissociative out-groups perform well in positive behaviors, they are more likely to respond with positive intentions and actions in public (vs. private) settings (Katherine & Darren, 2008). Thus, we propose the moderating effect of brand group labels:

Hypothesis H3: Brand group labels moderate the relationship between brand reciprocal role and consumer prosocial behavior. Specifically:
H3a: For brands with membership group labels, the initiator role more strongly motivates consumer prosocial behavior than the reciprocator role.
H3b: For brands with dissociative out-group labels, the reciprocator role more strongly motivates consumer prosocial behavior than the initiator role.

The research framework is illustrated in Figure 1 [Figure 1: see original paper]. Using one secondary dataset, we first explore the differential effects of brand initiator and reciprocator roles on consumer prosocial behavior, and verify the moderating role of brand group labels (membership vs. dissociative out-group) in this relationship. To further reveal the underlying mechanism, four experiments replicate the secondary data findings and examine the mediating role of intrinsic motivation attribution and the moderating role of brand group labels.

Study 2: Secondary Data Analysis

2.1 Research Purpose

This study aims to examine the impact of brand reciprocal roles on consumer prosocial behavior and the moderating effect of brand group labels, testing Hypotheses H1 and H3. We utilize secondary data by compiling and analyzing real public welfare cooperation data from Sina Weibo. By analyzing authentic data, the study tests the effects of brand reciprocal roles and brand group labels on consumer prosocial behavior, as well as Weibo users' reactions to focal actors occupying different roles in reciprocal relationships. In China, Sina Weibo is one of the most representative social media platforms, making its public welfare activities reflective of certain trends and characteristics. In September 2022, Weibo held its annual public welfare event "Everyone's Public Welfare Festival," collaborating with numerous media outlets to advocate "Doing Good Deeds on Weibo." Selecting "Everyone's Public Welfare Festival" as the research context and official accounts as research objects is both applicable and representative. First, the event employs a dual-driven model of "communication" and "fundraising," triggering observer scenarios of "Doing Good Deeds with Them" and "Seeing Good Deeds," encouraging widespread user participation and providing conditions for studying individuals observing reciprocal relationships among multiple members. Second, while publishers must invest time, energy, and resources in public welfare activities with little direct return,

they can benefit from interactions with other members. Therefore, for market members like enterprises, publishing information on public platforms is a reciprocity-driven behavior (Yang et al., 2020). For browsers, likes and shares are considered prosocial behaviors because, beyond encouraging participation, such symbolic support plays an important role in increasing the visibility and feasibility of dissemination activities (Weiss & Cohen, 2019).

2.2 Data Collection and Coding

During the event, Sina Weibo established a "Public Welfare Blue V Influence Ranking" to encourage users to support and participate in brands' public welfare activities. This study first collected and compiled Weibo data from ranking accounts such as "Aile Rong Listening Plan." After cleaning and coding the data, hypothesis testing was conducted. Specific procedures were as follows:

(1) **Data Collection.** The "Everyone's Public Welfare Festival" took place in September 2022. This study selected the top 6 ranking accounts as focal brands in reciprocal relationships to enhance brand diversity and ensure sample representativeness and objectivity. These accounts had no interaction restrictions, were all public welfare organizations in social assistance and environmental protection fields, employed identical marketing models, and participated in public welfare activities during the same time period, thereby excluding confounding effects from account operation models, industry characteristics, marketing strategies, and activity timing. Data were collected in January 2023, gathering all content from the six official accounts between September 5 and September 25, 2022, according to Sina's interaction ranking statistics. Each account promoted activities through public welfare-related tweets. Information collected for each Weibo post included publisher account, tweet content, comment count, like count, and Sina's calculated interaction index.

(2) **Data Cleaning and Coding.** This study focused on relationships between brands and other social members, thus excluding 4 data entries unrelated to social organization participation, leaving 347 valid samples for coding. Using G*Power software, we calculated that with a significance level of 0.05 and medium effect size (f = 0.25), a total sample size of at least 279 was required to achieve 95% statistical power, confirming that our sample size had adequate statistical power. Two researchers unrelated to this study coded the reciprocal roles based on definitions of initiators and reciprocators. When tweet content indicated the account was the first to provide benefits to others, such as "providing more resources and assistance to outstanding rural teachers like Teacher Luo" or "delivering rich creativity gift packages to 41 rural schools in 6 provinces including Guizhou and Sichuan," the account was labeled as the initiator in the reciprocal relationship (coded as 1), totaling 228 entries. When official accounts expressed gratitude or reciprocation to other accounts, such as "Thank you @XX Public Welfare for helping with climate change" or

"#ThankYouKindPeople#…(for) developing intangible cultural heritage products to help impoverished rural families increase income," the information was labeled as the reciprocating party (coded as 0), totaling 119 entries. Since this period was the promotional phase for each brand's public welfare activities, accounts would attach information about supported public welfare projects at the end of tweets to encourage participation and avoid information asymmetry. For example, the "Walking with Nature" project information stated: "Let us take action together to advocate green and environmentally sustainable concepts, jointly creating value compatible with the environment." Inter-coder reliability for reciprocal role coding was 85.88%; conflicting and undeterminable cases were discussed between the two coders to reach consensus. Subsequently, based on definitions of membership and dissociative out-groups, the two researchers determined each account's group label. Weibo accounts such as "Love Health" and "Aile Rong" conveyed positive reference groups through their names, and their tweets were labeled as membership groups (coded as 1), totaling 101 entries. Other account names involving "rescue," "Alashan," "aid," and "wildlife" conveyed information people avoid, and these reference groups were labeled as dissociative out-groups (coded as 0), totaling 246 entries.

2.3 Results and Discussion

Hypothesis H1 proposes that when consumers observe reciprocal relationships between a brand and other members, the brand's initiator role more strongly motivates prosocial behavior than its reciprocator role. Using standardized comment counts and like counts as dependent variables for prosocial behavior, one-way ANOVA revealed that the initiator group had higher comment counts than the reciprocator group (M_{initiator} = 0.08 vs. M_{reciprocator} = -0.15, F(1, 345) = 3.93, p = 0.048, ^{2} = 0.01) and significantly higher like counts (M_{initiator} = 0.08 vs. M_{reciprocator} = -0.16, F(1, 345) = 4.4, p = 0.037, ^{2} = 0.01). Additionally, standardized Weibo interaction indices showed no significant difference (F(1, 345) = 0.84, p = 0.361), ruling out potential confounding effects from special hot events.

We further conducted multiple linear regression analysis with reciprocal role as the independent variable and comment and like counts as dependent variables. First, we calculated VIF values, with a maximum of 1.79 (below 5) (Hair et al., 2006), indicating no serious multicollinearity. As shown in Table 1 Model 1, brand reciprocal role significantly influenced browsers' comment counts (β = 0.11, SE = 0.11, t = 1.98, p = 0.048), with an adjusted R^2 of 0.01. Brand reciprocal role also significantly influenced like counts (β = 0.11, SE = 0.11, t = 2.1, p = 0.037), with an adjusted R^2 of 0.01. These results indicate that the initiator role positioning more strongly motivates observers' prosocial behavior than the reciprocator role, supporting Hypothesis H1.

Next, we conducted regression analysis including reciprocal role, group label, their interaction term, and dependent variables to construct Model 2. Model 2

shows that the interaction between reciprocal role and group label significantly influenced comment counts (β = 0.29, SE = 0.24, t = 3.33, p = 0.001), with an adjusted R^2 of 0.06. The interaction also significantly influenced like counts (β = 0.23, SE = 0.24, t = 2.62, p = 0.009), with an adjusted R^2 of 0.05. These results demonstrate that group labels moderate the relationship between reciprocal role and prosocial behavior, such that the effect of brand initiator (vs. reciprocator) on prosocial behavior weakens when the brand has a dissociative out-group (vs. membership group) label. Hypothesis H3 was supported.

To test for potential account characteristic effects (Xu et al., 2020), we included six brand dummy variables (coded 1-6) in the regression analysis. In the regression models, the maximum VIF was 3.16 (below 5). In Model 1, brand reciprocal role remained significant for comment counts (β = 0.13, SE = 0.11, t = 2.38, p = 0.018), with brand dummy variables also significant (β = -0.13, SE = 0.03, t = -2.29, p = 0.022) and adjusted R^2 of 0.02. Brand reciprocal role significantly influenced like counts (β = 0.13, SE = 0.11, t = 2.49, p = 0.013), with brand dummy variables significant (β = -0.12, SE = 0.03, t = -2.27, p = 0.024) and adjusted R^2 of 0.02. In Model 2, the interaction between reciprocal role and group label remained significant for comment counts (β = 0.29, SE = 0.24, t = 3.35, p = 0.001), with brand dummy variables non-significant (β = -0.05, SE = 0.04, t = -0.77, p = 0.44) and adjusted R^2 of 0.06. The interaction significantly influenced like counts (β = 0.23, SE = 0.24, t = 2.65, p = 0.009), with brand dummy variables non-significant (β = -0.06, SE = 0.04, t = -0.82, p = 0.411) and adjusted R^2 of 0.06. These results indicate that after controlling for brand characteristics, the hypotheses remain supported.

This study examined how a brand's role (initiator vs. reciprocator) in reciprocal relationships with other social members influences consumer prosocial behavior and the moderating effect of brand group labels. Specifically, when consumers observe that a brand is the initiating party in a reciprocal relationship, their prosocial behavior is higher than when the brand is the reciprocating party, though this effect is weakened by brand group labels. Using secondary data, we addressed the discrepancy between intention and behavior in evaluating prosocial behavior, thereby more authentically reflecting how roles in reciprocal relationships influence consumer behavior. This approach also ruled out alternative explanations of experimental effects, where participants might detect experimenters' intentions and inadvertently comply (Jung et al., 2020). To further validate the underlying mechanism of how brand reciprocal roles influence consumer prosocial behavior, we continued with designed experiments to test the mediating effect of intrinsic motivation attribution.

In the formal experiments, we measured prosocial behavior through multiple scenarios and forms. Regarding donation types and resource forms, previous research indicates that donations, as primary manifestations of prosocial behavior, can involve various resources including money, blood, and labor (Yang & Hsee, 2022; Zhang et al., 2023). Therefore, we selected appropriate donation types for each experimental context: monetary donation served as the primary mode

in Experiments 1, 2, and 4, while step donation was considered in Experiment 3 to comprehensively understand prosocial behavior across different forms. Second, since prosocial behavioral intention is closely related to actual execution (Jung et al., 2020), after measuring real prosocial behavior through secondary data, the formal experiments focused on measuring individuals' willingness to participate in charitable and public welfare activities to help understand and control behavioral intentions and more accurately infer individual behavioral patterns and motivations. Furthermore, brand preference is closely related to prosocial behavior (Strahilevitz, 1999). In brand-related charitable activities, individuals' prosocial behavior reflects preference for specific brands. Therefore, we used both real and virtual brands to observe individuals' participation willingness and payment behavior under brand calls, examining how brand reciprocal roles influence consumer behavior, particularly under different social relationship constructions.

Experiment 1

Experiment 1 aimed to test Hypotheses H1 and H2—whether a brand's initiator role more strongly motivates consumer prosocial behavior than its reciprocator role when consumers observe reciprocal relationships between the brand and other members, with intrinsic motivation attribution as the mediating mechanism. Experiment 1 used a "Guochao" (national trend) brand co-branding scenario to reflect reciprocal interdependence, employing the familiar case of sports brand "Li-Ning" and official media "People's Daily" to illustrate brand-brand reciprocal relationships.

The experiment employed a single-factor between-subjects design for brand reciprocal role (initiator vs. reciprocator vs. control group), with two forms of prosocial behavior as dependent variables: participation willingness and donation amount. We included a no-role condition as a control to test whether explicit roles more strongly motivate prosocial behavior than no role. Experiment 1 was conducted online through the professional survey platform Credamo. Participants were randomly assigned to three scenarios: Li-Ning as initiator (People's Daily as reciprocator), Li-Ning as reciprocator (People's Daily as initiator), or control group. After reading the news, participants answered role and attention check items, donation willingness, intrinsic motivation attribution, and demographic questions. We first excluded 16 participants who failed attention checks or provided donation amounts outside the specified range, retaining 198 questionnaires for analysis.

3.1 Experimental Procedure

(1) **Manipulation of Brand Reciprocal Role:** Following Flynn and Yu's (2021) scenario reading method, participants randomly read a news article about Li-Ning and People's Daily's Guochao co-branding. The news used print advertisement format with text and images. To avoid interference from advertisement design, initiator and reciprocator advertisements

used identical layout and background images with similar word counts. The Li-Ning as initiator description primarily stated: Li-Ning's Olympic glory moment in 1984 and founding of China's sports goods brand in 1990 created news hotspots for People's Daily, while in 2019, People's Daily promoted Li-Ning's cross-border transformation by opening the "National Trend House." The summary read: "Thirty years ago, Li-Ning announced the beginning of China's sports goods history in *People's Daily*; thirty years later, *People's Daily* became a key node in Li-Ning's cross-border transformation." The Li-Ning as reciprocator news summary primarily stated: People's Daily reported Li-Ning's Olympic glory moment in 1984 and the beginning of Li-Ning's sports goods business in 1990, while in 2019, Li-Ning paid tribute to People's Daily through product co-branding, summarized as: "Thirty years ago, *People's Daily* witnessed the birth of China's sports goods brand Li-Ning; thirty years later, China Li-Ning printed *People's Daily* on its clothing." The control group scenario was unrelated to Li-Ning's role, featuring an introduction to 2022 Beijing Winter Olympics venues (see Appendix for specific manipulations). All participants completed an adapted reciprocal role check item (Flynn & Yu, 2021): "Based on the news you just read, which party first benefited the other in the Li-Ning-People's Daily relationship?" with three options: Li-Ning, People's Daily, or I don't know.

(2) **Measurement of Other Variables:** Prosocial behavior was measured by adapting Yang and Hsee's (2022) charitable willingness scale, asking participants' interest in participating in Li-Ning-related "Chinese Athletes Education Foundation" prosocial activities (1-7 scale) and providing donation amounts between 0-1000 RMB. Intrinsic motivation attribution scale was adapted from Story and Neves (2015), including six items such as "Li-Ning participates in activities aimed at creating welfare for other social members" and "Li-Ning invests for the better development and life of other social members." Finally, participants provided demographic information including gender, age, education, and income. The study also measured participants' prior support for and familiarity with Li-Ning, as well as their annual donation amounts (Yang & Hsee, 2022).

3.2 Results and Discussion

(1) **Manipulation Check and Sample Information.** In the Li-Ning as initiator condition, 54 participants (81.82%) correctly identified Li-Ning as the party that first benefited the other. In the Li-Ning as reciprocator condition, 57 participants (78.08%) correctly identified People's Daily as the party that first benefited Li-Ning, confirming successful manipulation ($^{2}(1) = 49.75$, $p < 0.001$). Following Flynn and Yu's (2021) analytical procedure, we further excluded 28 participants who failed the brand reciprocal role manipulation check, yielding 170 valid questionnaires. Using G*Power software, we calculated that with a significance level of 0.05 and effect size

(f) of 0.25, a minimum sample size of 159 was required for 80% statistical power, confirming our sample size was adequate. The sample included 71 males (41.8%), with a mean age of 30.17 years, predominantly bachelor's degree holders (68.2%), and primarily earning 7001-10000 RMB monthly (37.6%), covering various age groups, education levels, and income levels. Additionally, the three groups showed no significant differences in prior annual donation amounts, Li-Ning support levels, or familiarity (Fs < 2.01, ps > 0.137), ruling out these three factors as alternative explanations for consumer prosociality.

(2) **Prosocial Behavior:** To verify the main effect of brand reciprocal role on prosocial behavior, we conducted ANOVA with reciprocal role as the independent variable (control group = 0, reciprocator = 1, initiator = 2) and charitable participation willingness as the dependent variable. Results showed that reciprocal role significantly influenced charitable participation willingness (M_{initiator} = 6.13, SD = 0.8 vs. M_{reciprocator} = 5.23, SD = 1.71 vs. M_{control} = 5.49, SD = 1.25; F(2, 167) = 6.86, p = 0.001, ^{2} = 0.076). Planned contrasts revealed that when the brand was described as the initiator in a reciprocal relationship, participants showed higher willingness to participate in Li-Ning's public welfare project (vs. control: t(111) = 3.2, p = 0.002; vs. reciprocator: t(109) = 3.52, p = 0.001); no significant difference existed between control and reciprocator groups (t(114) = -0.95, p = 0.345).

We used non-parametric Kruskal-Wallis test to examine differences in donation amounts across reciprocal role and control groups. Results showed a significant overall effect (M_{initiator} = 348.87, SD = 302.84 vs. M_{reciprocator} = 192.98, SD = 211.58 vs. M_{control} = 221.76, SD = 230.8, ^{2}(2) = 11.81, p = 0.003). When the brand was described as the initiator, participants' donation amounts were higher than both the reciprocator group (^{2}(1) = 3.18, p = 0.004) and control group (^{2}(1) = 2.76, p = 0.017), with no significant difference between reciprocator and control groups (^{2}(1) = -0.45, p = 1). In summary, the brand's initiator role in a reciprocal relationship elicited higher charitable participation willingness and donation amounts than the reciprocator role, supporting Hypothesis H1.

(3) **Mediation Test for Intrinsic Motivation Attribution:** The intrinsic motivation scale demonstrated good reliability ($\alpha = 0.82$), so mean scores were used. Planned contrasts showed that intrinsic motivation attribution was significantly higher in the initiator group than the reciprocator group (M_{initiator} = 5.57, SD = 0.95 vs. M_{reciprocator} = 5.12, SD = 1.05; t(109) = 2.37, p = 0.02). To test the mediating effect of intrinsic motivation attribution in the relationship between reciprocal role and prosocial behavior, we conducted mediation analysis using bootstrapping (PROCESS Model 4, Hayes, 2013) with 5000 samples. The model specified reciprocal role as the independent variable, intrinsic motivation as the mediator, and charitable participation willingness as the dependent

variable. Results indicated that brand reciprocal role influenced intrinsic motivation attribution (b = 0.45, 95% CI = [0.07, 0.83]), intrinsic motivation influenced charitable participation willingness (b = 0.52, 95% CI = [0.28, 0.76]), and the effect of brand reciprocal role on participation willingness was significant (b = 0.67, 95% CI = [0.19, 1.15]), with the indirect effect not containing zero (95% CI = [0.03, 0.62]), confirming mediation.

With donation amount as the dependent variable, results similarly showed that intrinsic motivation influenced donation amount (b = 56.93, 95% CI = [8.66, 105.2]), the effect of reciprocal role on donation amount was significant (b = 130.26, 95% CI = [31.91, 228.61]), and the indirect effect did not contain zero (95% CI = [2.03, 74.08]), confirming mediation. Therefore, the initiator role in a reciprocal relationship elicited stronger intrinsic motivation attribution than the reciprocator role, and intrinsic motivation attribution mediated the relationship between brand reciprocal role and consumer prosocial behavior, leading to higher charitable participation willingness and donation amounts, supporting Hypothesis H2.

Experiment 1's results supported both Hypotheses H1 and H2. Across different reciprocal role scenarios (initiator vs. reciprocator), the initiator positioning produced the best results in terms of both charitable participation willingness and donation amount. Moreover, the study demonstrated that focal brands' intrinsic motivation more likely drives observers' prosocial behavior.

Experiment 2

Experiment 2 was a pre-registered study (https://osf.io/hq7ts) that improved upon previous research in two ways: First, real brands may have confounding factors such as social status and category differences. This experiment used a virtual brand and a reciprocal relationship between the brand and other consumers as a new experimental context to further confirm that reciprocal roles trigger prosocial responses and their underlying mechanism. Second, previous research suggests that initiators have higher social status than reciprocators (Flynn & Yu, 2021), and observers might select higher-status parties as new prosocial cooperation partners in subsequent rounds. Therefore, this experiment assessed focal brand social status evaluation to rule out social status as a potential alternative explanation.

4.1 Experimental Procedure

The experiment followed the same procedure as Experiment 1. We first excluded 6 participants who failed attention checks or provided donation amounts outside the specified range, retaining 264 questionnaires for analysis.

(1) **Manipulation of Brand Reciprocal Role:** The initiator scenario for brand "Lele Takeout" used the headline "Lele Takeout: The Initiator Meeting User Needs During the Pandemic." The summary described: During

the pandemic, Jia'an City residents faced difficulties purchasing basic supplies. The takeout platform Lele Takeout proactively invested funds and delivery capacity to help Jia'an citizens through the crisis, subsequently gaining users and reputation through its pandemic efforts. The reciprocator scenario used the headline "Lele Takeout: Reducing Carbon and Plastic, Reciprocating User Support." The summary described: To address plastic pollution in the takeout industry, Lele Takeout received strong support from Jia'an users, subsequently upgrading its points system and public welfare mechanism to reciprocate users. All participants completed the same reciprocal role check item as in Experiment 1 and rated the importance of the described events (pandemic assistance/low-carbon green initiatives).

(2) **Measurement of Other Variables:** To measure prosocial behavior, we informed participants that Lele Takeout was launching a "Love Donation" public welfare project for national users, through which platform users could donate money to provide free lunches and nutritional supplements for impoverished children in underdeveloped areas. Participants indicated their participation interest and donation amount between 0-100 RMB, and rated the importance of this public welfare activity. Intrinsic motivation attribution was measured identically to Experiment 1. The questionnaire also assessed participants' evaluations of brand social status: "I admire this brand," "I value this brand," and "I respect this brand" (Anderson et al., 2001; van de Ven et al., 2009). Finally, participants provided demographic information including gender, age, education, income, and prior public welfare participation level (1 = fully participate, 7 = do not participate at all).

4.2 Results and Discussion

(1) **Manipulation Check and Sample Information.** In the initiator condition, 105 participants (82.68%) correctly identified the focal brand "Lele Takeout" as the party that first benefited the other. In the reciprocator condition, 107 participants (78.1%) correctly identified Jia'an citizens as the party that first benefited the focal brand, confirming successful manipulation ($^{2}(1) = 97.44$, $p < 0.001$). After excluding 52 participants who failed the manipulation check, we obtained 212 valid questionnaires. Using G*Power software, we calculated that with a significance level of 0.05 and effect size (f) of 0.25, a minimum sample size of 210 was required for 95% statistical power, confirming our sample size was adequate. The sample included 80 males (37.7%), with a mean age of 29.58 years, predominantly bachelor's degree holders (62.7%), and primarily earning over 10,000 RMB monthly (23.6%), covering various age groups, education levels, and income levels. Additionally, the two groups showed no significant differences in ratings of event importance, public welfare project importance, or prior public welfare participation levels ($Fs < 3.48$, $ps > 0.063$).

(2) **Prosocial Behavior:** ANOVA with reciprocal role as the independent variable (reciprocator = 0, initiator = 1) and public welfare participation willingness as the dependent variable revealed that reciprocal role significantly influenced participation willingness (M_{initiator} = 6.16, SD = 0.8 vs. M_{reciprocator} = 5.87, SD = 1.09; F(1, 210) = 4.96, p = 0.027, ^{2} = 0.023). Planned contrasts showed a significant difference between initiator and reciprocator groups (t(210) = 2.23, p = 0.027). Mann-Whitney non-parametric analysis indicated that the initiator group reported higher average donation amounts than the reciprocator group (M_{initiator} = 61.75, SD = 29.3 vs. M_{reciprocator} = 46.68, SD = 29.56; ^{2}(1) = 3.52, p < 0.001). These results demonstrate that the brand's initiator role more strongly motivates higher charitable participation willingness and donation amounts than the reciprocator role, supporting Hypothesis H1.

(3) **Mediation Test for Intrinsic Motivation Attribution:** Planned contrast analysis showed that intrinsic motivation attribution ($\alpha = 0.82$) was significantly higher in the initiator group than the reciprocator group (M_{initiator} = 6.01, SD = 0.72 vs. M_{reciprocator} = 5.8, SD = 0.78; t(210) = 2.09, p = 0.038). We conducted mediation analysis using the same PROCESS Model 4 as Experiment 1 (Hayes, 2013). Results indicated that brand reciprocal role influenced intrinsic motivation attribution (b = 0.22, 95% CI = [0.01, 0.42]), intrinsic motivation influenced charitable participation willingness (b = 0.77, 95% CI = [0.63, 0.91]), the direct effect of brand reciprocal role on participation willingness was non-significant (b = 0.13, 95% CI = [-0.08, 0.34]), and the indirect effect was significant (95% CI = [0.01, 0.36]), confirming mediation. With donation amount as the dependent variable, results similarly showed that intrinsic motivation influenced donation amount (b = 14.98, 95% CI = [10.05, 19.9]), the effect of reciprocal role on donation amount was significant (b = 11.84, 95% CI = [4.39, 19.3]), and the indirect effect was significant (95% CI = [0.17, 6.44]), confirming mediation and supporting Hypothesis H2.

(4) **Ruling Out Alternative Explanations:** To rule out social status as a competing explanation, we first conducted one-way ANOVA on social status ($\alpha = 0.78$). Results showed that reciprocal role manipulation did not affect brand social status (F(1, 210) = 0.46, p = 0.498). Second, we conducted mediation analysis with social status as the mediator (Model 4, 5000 samples), finding no significant mediating effects of social status on the relationship between reciprocal role and prosocial behavior (participation willingness: 95% CI = [-0.03, 0.11]; donation amount: 95% CI = [-1.05, 3.93]). These results exclude social status as a competing explanation.

Experiment 2's results again supported Hypotheses H1 and H2. For virtual brands and events, the brand initiator's reciprocal role elicited stronger consumer prosocial responses than the reciprocator role, with intrinsic motivation

attribution serving as the mediator and the potential alternative explanation of social status ruled out.

Experiment 3

Experiment 3 aimed to further validate the main effect of brand reciprocal role on consumer prosocial behavior and the mediating effect of intrinsic motivation attribution. In Experiments 1 and 2, the description order of initiator and reciprocator materials aligned with the sequence of reciprocal initiation and return behaviors, potentially exposing participants to framing effects from brand presentation order and frequency (Tversky & Kahneman, 1981). Therefore, Experiment 3 sought to confirm whether framing effects influenced the main effect of reciprocal roles. Additionally, Experiment 3 used virtual brands from the same industry and identical reciprocal events to further reduce potential experimental interference.

Experiment 3 employed a 2 (brand reciprocal role: initiator vs. reciprocator) × 2 (focal brand presentation order: first vs. last) between-subjects design, using the same data collection method as Experiment 1. We initially excluded 23 questionnaires with incorrect attention checks, obtaining 242 questionnaires. During the experiment, participants were randomly assigned to one of four scenarios. After reading a fictional logistics brand material that manipulated reciprocal role and presentation order, participants completed measures of prosocial behavior, motivation attribution, reciprocal role, brand traits, and perceived obligation, followed by demographic questions.

5.1 Experimental Procedure

(1) **Manipulation of Reciprocal Role and Presentation Order:** This study used two virtual logistics brands "Kuaixin" and "Suxing" as initiator (vs. reciprocator) roles in brand-brand reciprocal relationships, with "Kuaixin" as the focal brand. The Kuaixin as initiator appearing first scenario described: Logistics brand Kuaixin announced the launch of the "Dust-Clearing Plan" against the backdrop of increasingly severe environmental problems, proactively investing and sharing experience to transform low-carbon emission reduction into sustainable investment, attracting cooperative brands like Suxing to participate. As a beneficiary, Suxing obtained clean energy worth 3 million RMB. Suxing subsequently announced a 3 million RMB investment to support the Dust-Clearing Plan, emphasizing resource 回馈 to promote green development in the logistics industry. The Kuaixin as reciprocator appearing last scenario swapped the two brands. The Kuaixin as reciprocator appearing first scenario described: Logistics brand Kuaixin announced a 3 million RMB investment in the Dust-Clearing Plan to promote green development, having obtained clean energy worth 3 million RMB as a beneficiary. The plan was initiated by another logistics brand Suxing, which proactively invested and shared experience. The Kuaixin as initiator appearing last scenario swapped

these two brands. The manipulation check asked participants to select which party initiated benefits first.

(2) **Measurement of Other Variables:** Prosocial behavior was measured by informing participants that brand "Kuaixin" was organizing a "Donate Steps for Green Travel" activity, asking their interest in participating and donation steps between 0-10,000. Intrinsic motivation attribution was measured by having participants evaluate the focal brand: "Truly invests for the better development of nature and society," "Participates in socially responsible initiatives for sustainability purposes," and "Actively participates in activities and projects that promote social welfare" (Du et al., 2007; Ellen et al., 2006). The questionnaire also measured extrinsic motivation attribution: "Committed to social responsibility initiatives aimed at obtaining more investment returns," "Participates in socially responsible activities due to social pressure," and "Hopes to increase profits through socially responsible measures" (Du et al., 2007; Ellen et al., 2006). Perceived brand efficacy included three items: "(Focal brand's) activity quality is very high," "Associated with high-level performance," and "More efficient than most other companies' activities" (Garvey et al., 2015). Perceived sincerity evaluated brands on "sincere," "moral," "emotional," and "society-oriented" dimensions. Participants also rated perceived obligation: "(Focal brand) had no choice but to provide support," "Voluntarily provided support" (reverse-scored), and "Could choose whether to provide support but wanted to" (reverse-scored) (Flynn & Yu, 2021). All items used 1-7 scales. Finally, participants provided demographic information.

5.2 Results and Discussion

(1) **Manipulation Check and Sample Information.** In the initiator condition, 105 participants (89.74%) correctly identified focal brand "Kuaixin" as the party that first benefited the other. In the reciprocator condition, 103 participants (82.4%) answered correctly ($^2(1) = 126.13$, $p < 0.001$). After excluding 34 participants who failed the manipulation check, 208 questionnaires were retained for analysis. Using G*Power software, we calculated that with a significance level of 0.05 and medium effect size ($f = 0.25$), a minimum sample size of 172 was required for 90% statistical power, confirming our sample size was adequate. The sample included 76 males (36.5%), with a mean age of 29.62 years, predominantly bachelor's degree holders (71.6%) and monthly income of 7001-10000 RMB (25%), covering various groups.

(2) **Prosocial Behavior:** ANOVA with public welfare participation willingness as the dependent variable revealed that reciprocal role significantly influenced participation willingness (M_{initiator} = 6.16, SD = 0.83 vs. M_{reciprocator} = 5.79, SD = 0.89; F(1, 206) = 9.72, p = 0.002, $^2 = 0.05$). Focal brand presentation order had no significant effect (F(1, 206) = 0.07, p = 0.791), and the interaction between reciprocal role and

presentation order was non-significant (F(1, 206) = 0.12, p = 0.729). The difference in participation willingness between initiator and reciprocator groups was significant (t(206) = 3.14, p = 0.002).

Kruskal-Wallis test examining differences in donated steps across the four groups showed a non-significant overall effect (^{2}(3) = 5.72, p = 0.126). Further analysis indicated that when the focal brand was described as the initiator, participants donated more steps than the reciprocator group (M_{initiator} = 8199.1, SD = 2281.02 vs. M_{reciprocator} = 7532.14, SD = 2494.18; ^{2}(1) = 4576.5, p = 0.043). No significant difference existed between first and last presentation orders (^{2}(1) = 5315.5, p = 0.826). These results demonstrate that the brand's initiator role elicited higher charitable participation willingness and donation amounts than the reciprocator role, while focal brand presentation order did not influence consumer prosocial behavior. The results again support Hypothesis H1 and rule out framing effects from presentation order.

(3) **Mediation Test for Intrinsic Motivation Attribution:** Intrinsic motivation attribution (α = 0.7) was significantly higher in the initiator group than the reciprocator group (M_{initiator} = 6.14, SD = 0.74 vs. M_{reciprocator} = 5.65, SD = 0.72; t(206) = 4.8, p < 0.001). PROCESS Model 4 analysis showed that brand reciprocal role influenced intrinsic motivation attribution (b = 0.49, 95% CI = [0.29, 0.69]), intrinsic motivation attribution influenced participation willingness (b = 0.47, 95% CI = [0.32, 0.62]), the direct effect of brand reciprocal role on participation willingness was non-significant (95% CI = [-0.08, 0.38]), and the indirect effect was significant (95% CI = [0.11, 0.38]), confirming mediation. With donation steps as the dependent variable, results similarly showed that intrinsic motivation attribution influenced donation amount (b = 1124.88, 95% CI = [701.24, 1548.52]), the direct effect of reciprocal role on donation amount was non-significant (95% CI = [-527.92, 769.05]), and the indirect effect was significant (95% CI = [220.15, 970.58]), confirming mediation and supporting Hypothesis H2.

(4) **Ruling Out Alternative Explanations:** We examined potential alternative explanations including extrinsic motivation, perceived obligation, brand efficacy, perceived sincerity, and workability. One-way ANOVA showed that reciprocal role did not affect extrinsic motivation attribution (α = 0.72), perceived obligation (α = 0.67), or workability (Fs < 2.68, ps > 0.103). However, brand efficacy (α = 0.74) and perceived sincerity (α = 0.81) differed significantly between initiator and reciprocator groups (brand efficacy: F(1, 206) = 10.73, p = 0.001, ^{2} = 0.05; perceived sincerity: F(1, 206) = 5.17, p = 0.024, ^{2} = 0.02). We then conducted mediation analysis including these variables alongside intrinsic motivation attribution (Model 4, 5000 samples). No significant mediating effects were found for any alternative variables on participation willingness (extrinsic motivation: 95% CI = [-0.03, 0.07]; perceived obligation: 95% CI = [-0.04, 0.17]; brand efficacy: 95% CI = [-0.09, 0.12]; perceived sincerity:

95% CI = [-0.03, 0.13]; workability: 95% CI = [-0.02, 0.1]) or donation amount (extrinsic motivation: 95% CI = [-182.95, 16.15]; perceived obligation: 95% CI = [-212.75, 30.64]; brand efficacy: 95% CI = [-258.13, 254.71]; perceived sincerity: 95% CI = [-215.12, 157.14]; workability: 95% CI = [-16.1, 259.85]). These results rule out these factors as competing explanations.

Experiment 3, using virtual brands and events as stimuli, again supported Hypotheses H1 and H2, ruled out framing effects from focal brand presentation order, and excluded alternative explanations including extrinsic motivation attribution, brand traits, and perceived obligation. The brand initiator's reciprocal role elicited stronger consumer prosocial responses than the reciprocator role, with intrinsic motivation attribution serving as the mediator. The results also indicate that the reciprocal role effect operates similarly across monetary and non-monetary prosocial behaviors.

Experiment 4

Experiment 4 aimed to test the interactive effect of brand role and brand group label on consumer prosocial behavior. Under brand initiator (vs. reciprocator) positioning, brands with membership group (vs. dissociative out-group) labels more strongly motivate consumers to engage in related prosocial behaviors. This experiment tested Hypothesis H3.

Experiment 4 employed a 2 (brand reciprocal role: initiator vs. reciprocator) × 2 (brand group label: membership vs. dissociative out-group) between-subjects design, using the same data collection method as Experiment 1. We initially excluded 17 questionnaires with incorrect attention checks or missing values, obtaining 318 questionnaires. Participants were randomly assigned to one of four scenarios: initiator/membership group, initiator/dissociative out-group, reciprocator/membership group, or reciprocator/dissociative out-group. After reading a brand's text and image introduction manipulating its role in reciprocal relationships with other members, participants completed measures of prosocial behavior, brand intrinsic motivation, group fit, and dissociative attitude, followed by demographic questions.

6.1 Experimental Procedure

(1) **Manipulation of Brand Reciprocal Role:** To distinguish the focal brand's initiator (vs. reciprocator) role, headlines read "Leading (vs. Maintaining) Information Security, We Strive to be Benefit Creators (vs. Reciprocators)." The content described brand "Lianpu" announcing cooperation with social organization "Innovators Alliance," proactively providing funding and technical support to lead social development and create benefits for social welfare first (vs. receiving open-source software and technical assistance that reduced R&D costs and increased market profits), subsequently enhancing market profitability and technical R&D levels (vs. mak-

ing investments to provide funding and technical support to reciprocate "Innovators Alliance's" help, expressing gratitude and giving back to society). Participants then selected which party first benefited the other.

(2) **Manipulation of Brand Group Label:** Research shows that brands targeting specific user types rather than the general population can effectively manipulate group labels (Escalas & Bettman, 2003). Therefore, the experiment distinguished membership and dissociative out-group brands by stating core business focuses: membership brands introduced themselves as technology companies specializing in public health, while dissociative out-group brands introduced themselves as technology companies specializing in disease diagnosis and treatment.

(3) **Measurement of Other Variables:** The dependent variable, prosocial behavior, was measured by asking participants' interest in participating in the brand's public welfare platform activity "Information Education for Earthquake-Affected Areas" and donation amount between 0-100 RMB. Brand intrinsic motivation for green behavior was measured using six adapted items (Story & Neves, 2015) such as "Participates in activities aimed at creating welfare for other social members" and "Invests for the better development of other social members," rated on 1-7 scales. Manipulation checks included membership group fit and group dissociative attitude. Membership group fit was measured with three items: "I fit this group," "I belong to this group," and "I see myself as this type of person" (Escalas & Bettman, 2003). Group dissociative attitude was measured with four items: "I don't want to be associated with this group," "I want to avoid connection with this group," "I avoid resonating with this group," and "I strongly identify with this group" (reverse-scored) (White et al., 2014).

6.2 Results and Discussion

(1) **Manipulation Check and Sample Information.** When the focal brand was positioned as initiator, 90.91% (n = 140) of participants correctly identified it as the first party to create benefits. When positioned as reciprocator, 85.37% (n = 140) correctly identified nature as the first party ($^2(1) = 185$, $p < 0.001$). After excluding 38 participants who failed manipulation checks, 280 questionnaires were retained for analysis. Using G*Power software, we calculated that with a significance level of 0.05 and medium effect size (f = 0.25), a minimum sample size of 172 was required for 90% statistical power, confirming our sample size was adequate. The sample included 106 males (37.9%), with a mean age of 29.81 years, predominantly bachelor's degree holders (69.3%) and monthly income under 3000 RMB (26.4%), covering various groups.

Group fit and dissociative attitude scales showed good reliability ($\alpha = 0.85$ and 0.83, respectively). A 2 × 2 ANOVA showed that membership brand

ads elicited higher perceived group fit than dissociative out-group brand ads (M_{membership} = 5.32, SD = 0.1 vs. M_{dissociative} = 4.77, SD = 1.31; F(1, 278) = 15.71, p < 0.001, ^{2} = 0.05). Dissociative out-group brand ads elicited higher dissociative attitudes than membership brand ads (M_{membership} = 2.51, SD = 1.11 vs. M_{dissociative} = 2.8, SD = 1.29; F(1, 278) = 4.03, p = 0.046, ^{2} = 0.01), confirming successful group label manipulation. The interaction between brand reciprocal role and group label did not significantly affect perceived group fit or dissociative attitude (Fs < 0.14, p > 0.05).

(2) **Prosocial Behavior:** ANOVA with public welfare participation willingness as the dependent variable revealed a significant interaction between reciprocal role and brand group label (F(1, 278) = 10.63, p = 0.001, ^{2} = 0.04). Neither reciprocal role (F(1, 278) = 0.001, p = 0.977) nor brand label (F(1, 278) = 0.65, p = 0.419) had significant main effects. Estimated marginal means analysis showed that for membership brands, initiator group participation willingness was significantly higher than reciprocator group (M_{initiator} = 5.87, SD = 0.11 vs. M_{reciprocator} = 5.51, SD = 0.11; F(1, 137) = 4.61, p = 0.034). For dissociative out-group brands, initiator group participation willingness was significantly lower than reciprocator group (M_{initiator} = 5.6, SD = 0.1 vs. M_{reciprocator} = 5.96, SD = 0.1; F(1, 139) = 6.29, p = 0.013).

Kruskal-Wallis test examining differences in donation amounts across the four groups showed a significant overall effect (^{2}(3) = 8.71, p = 0.033). For membership brands, initiator group donation amounts were higher than reciprocator group (M_{initiator} = 60.54, SD = 31.3 vs. M_{reciprocator} = 49.86, SD = 23.48; ^{2}(1) = 2.02, p = 0.044). For dissociative out-group brands, initiator group donation amounts were lower than reciprocator group (M_{initiator} = 51.3, SD = 26.7 vs. M_{reciprocator} = 61.34, SD = 30.26; ^{2}(1) = -2.04, p = 0.044). These results support Hypothesis H3.

Figure 2 [Figure 2: see original paper] illustrates the effects of brand reciprocal role and group label on consumer (a) participation willingness (EM means) and (b) donation amount.

(3) **Mediation Test for Intrinsic Motivation Attribution:** ANOVA with intrinsic motivation attribution (α = 0.82) as the dependent variable revealed a significant interaction between reciprocal role and brand group label (F(1, 278) = 7.34, p = 0.007, ^{2} = 0.03). Reciprocal role had a significant main effect (F(1, 278) = 4.32, p = 0.039, ^{2} = 0.02), while brand label did not (F(1, 278) = 1.31, p = 0.253). Planned contrasts showed that for membership brands, initiator group intrinsic motivation attribution was significantly higher than reciprocator group (M_{initiator} = 5.94, SD = 0.09 vs. M_{reciprocator} = 5.54, SD = 0.09; F(1, 137) = 10.52, p = 0.001). For dissociative out-group brands, no significant difference existed between initiator and reciprocator groups (M_{initiator} = 5.61, SD = 0.08 vs. M_{reciprocator} = 5.67, SD = 0.08; F(1, 139) =

0.22, p = 0.641).

PROCESS Model 8 analysis showed that the interaction between brand reciprocal role and group label influenced intrinsic motivation attribution (b = 0.45, 95% CI = [0.12, 0.78]) and participation willingness (b = 0.43, 95% CI = [0.05, 0.82]), with intrinsic motivation attribution influencing participation willingness (b = 0.64, 95% CI = [0.5, 0.77]). The indirect effect was significant (95% CI = [0.08, 0.54]). Specifically, for membership brands, the mediating effect of intrinsic motivation attribution was significant (95% CI = [0.1, 0.44]), while for dissociative out-group brands, it was non-significant (95% CI = [-0.19, 0.11]). With donation amount as the dependent variable, results similarly showed that the interaction influenced donation amount (b = 17.27, 95% CI = [4.08, 30.46]), intrinsic motivation attribution influenced donation amount (b = 7.64, 95% CI = [2.95, 12.34]), and the indirect effect was significant (95% CI = [0.78, 7.84]). Specifically, for membership brands, the mediating effect was significant (95% CI = [1.04, 6.1]), while for dissociative out-group brands, it was non-significant (95% CI = [-2.69, 1.08]).

Experiment 4 thus tested brand group labels as boundary conditions for the effect of brand reciprocal roles on consumer prosocial behavior. The results support Hypothesis H3a, showing that the effect of brand initiator (vs. reciprocator) positioning on consumer prosociality holds for membership brands, with intrinsic motivation attribution mediating this process. Experiment 4 also supports H3b, demonstrating that the initiator effect only exists when dissociative out-group brand labels are not activated. When consumers perceive a brand as having a dissociative out-group identity, reciprocator positioning more strongly motivates positive prosocial behavior than initiator positioning.

General Discussion

7.1 Research Conclusions

This study focuses on consumers as observers outside reciprocal relationships and brands as focal participants, examining how brand positioning as initiators versus reciprocators influences consumer prosocial behavior, thereby answering the question of "how brands can enhance reciprocal relationship influence." Through five studies of focal brands building reciprocal relationships with multiple parties, we find that when consumers observe reciprocal relationships between brands and other social members, brand initiator positioning more strongly motivates consumer prosocial behavior than reciprocator positioning, while brand group labels (membership vs. dissociative out-group) moderate this asymmetric effect. Specifically, the motivating effect of brand initiator (vs. reciprocator) on consumer prosociality exists when the brand holds a membership group identity. However, when consumers perceive the brand as having a dissociative out-group identity, this relationship reverses: the brand's reciprocator role more strongly motivates consumer prosocial behavior than the initiator role. These conclusions have important theoretical implications for reciprocal

relationship research.

7.2 Theoretical Contributions

This study's theoretical contributions are manifested in several aspects. First, it examines the impact of brand reciprocal roles on consumer behavior, confirming that exchange sequence can cause consumer behavioral response bias. The research enriches antecedents of individual prosocial behavior and establishes positive connections between reciprocal relationships and various behavioral outcomes. Current literature primarily focuses on micro-level interpersonal influences (e.g., Cakanlar et al., 2023; Flynn & Yu, 2021; Zhao et al., 2022; Zhang et al., 2023). This study focuses on macro-level exchanges between brands and other social groups, 完善 ing the theoretical system of reciprocal relationships across micro and macro social structures. The research further supports the asymmetry triggered by reciprocal roles. While Flynn and Yu (2021) found that reciprocal exchange causes unfairness in symbolic resources (social status), this study finds that reciprocal exchange also causes asymmetry in actual resources like prosocial support. Importantly, previous research has primarily focused on static social relationships from one-to-one dyadic exchange perspectives (Dungan et al., 2022; Flynn & Yu, 2021), whereas this study examines third-party observers' differential participation in new interpersonal interactions based on reciprocal roles, supplementing current research on asymmetric effects triggered by reciprocal roles from a pluralistic, dynamic perspective. It provides direct evidence for the specific manifestations and mechanisms of reciprocity transitivity, showing that observing others' reciprocal relationships may influence individuals' cognitions and subsequently trigger behaviors that benefit social welfare. This finding enriches transmission models of prosocial behavior driven by reciprocal altruism (Desteno et al., 2010) and supports evolutionary consumption with reciprocal altruism as its main content (Saad, 2013).

Second, this study reveals the cognitive process individuals undergo when observing reciprocal relationships from the perspective of intrinsic motivation attribution, finding that brand reciprocal roles cause differences in intrinsic motivation attribution. Much prosocial research focuses on donors' intrinsic self-motivation factors, while this study finds that when individuals as observers perceive brands' intrinsic satisfaction and enjoyment from their roles, intrinsic motivation attribution toward others' behavior can also positively influence interpersonal interactions. This expands intrinsic motivation research at the attribution object level. Additionally, although traditional research considers intrinsic motivation more effective than extrinsic motivation, recent studies find equivalent effects or even situations where extrinsic motivation's impact exceeds intrinsic motivation's (Delmas & Kohli, 2020; Ginder et al., 2021; Khodakarami et al., 2015). To more accurately assess intrinsic motivation's impact, research suggests motivational effectiveness varies depending on the donation relationship stage (Khodakarami et al., 2015). This study's findings support this view, showing that in a reciprocal relationship, the initiator's elicited intrinsic mo-

tivation attribution can explain individual prosocial behavior bias, confirming that intrinsic motivation attribution can influence cross-situational donation and nonprofit relationships.

Third, this study clarifies the connection between brands' reciprocal roles and consumer prosocial behavior, proposing brand group labels (membership vs. dissociative out-group) as boundary conditions that further distinguish the influencing conditions of reciprocal relationships. This research not only combines brands' multiple attributes, extending research on how corporate multiple identities influence consumer decisions, but also echoes the view that identity association strategy effectiveness depends on contextual factors (White et al., 2012; White et al., 2014). Specifically, previous identity association effectiveness mostly stemmed from membership group influences (White et al., 2012), while this study addresses how dissociative reference groups can guide consumers to follow general social norms. Finally, this study enriches co-branding research. Previous studies often focused on how brand alliances with consistency or similarity influence customer evaluations of co-branded products (Kumar, 2005), whereas this study expands the scope of brand alliance discussions from a broader social connection perspective.

7.3 Research Limitations and Future Directions

This study has certain limitations but also points to future research directions. First, this study focuses on exchange roles, exploring the effects of initiators and reciprocators on consumer prosocial behavior from an exchange sequence perspective. However, exchange structure is also an important component affecting individual behavioral responses. Factors such as cooperation partners' status and interdependence basis may cause asymmetric dependence, leading individuals to differ in partner selection (Balliet et al., 2017). Future research could further explore factors influencing individual prosocial behavior from the structural perspective of reciprocal relationships, or combine exchange sequence with exchange structure to examine how they interrelate and jointly affect consumer prosocial behavior. Second, when communicating brands' reciprocal connections with social members, disclosure sources and formats vary—for example, disclosers could be enterprises themselves or third parties like media, with monitored vs. unmonitored disclosures. This study did not specify disclosure sources in experiments. Future research could examine the moderating role of information sources between reciprocal relationships and prosocial behavior. Finally, dissociative out-group research suggests group image is an internal mechanism triggering positive behavioral responses (White et al., 2014). Future research could further explore other mediating elements that trigger prosocial behavior based on dissociative out-groups.

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Appendix: Experimental Materials

(1) **Experiment 1**
Scenario 1: Li-Ning as initiator
Scenario 2: Li-Ning as reciprocator
Scenario 3: Control group

(2) **Experiment 2**
Scenario 1 - Brand Tingting as initiator: The digital transformation that might have taken three to five years was accelerated by the pandemic. To help Jia'an City accelerate industrial digitalization and digital industrialization, and to solve urgent problems like epidemic prevention, as a voice-over-IP service and software application, Tingting integrated business investment and group collaboration, proactively incorporating Jia'an

City's digital tasks into its brand development process, leading Jia'an's digital construction with funding, technology, and platforms. Tingting established a fund exceeding 1 million RMB for social digitalization projects, continuously improving Jia'an's "Jinfu Cloud" platform functions and ecosystem construction, promoting data valueization. Simultaneously, using technology, it provided a customized low-bandwidth version of popular video chat software free to anti-epidemom personnel. To help fund this effort, Tingting set up a donation button allowing any consumer to donate money to provide social support for millions of ongoing anti-epidemic workers. At Jia'an City's 7th Brand Forum, Tingting won triple awards including "Jia'an City Corporate Social Responsibility Case Award," highly affirming its pandemic assistance and digital transformation practices. Jia'an City became an excellent testing ground for Tingting's positive interaction with the digital government system, not only solving Tingting's market expansion problems but also accumulating experience for application promotion and building brand reputation. Tingting further leveraged Jia'an City's rich resources and government governance experience, combined with its own platform and technology, to become the province's leading government service platform.

Scenario 2 - Brand Tingting as reciprocator: The uncertainty of COVID-19 disrupted normal operations of SMEs and depressed asset prices. Most companies experienced difficult times. As a voice-over-IP service and software application, like many peers, Tingting faced financial challenges and cash flow problems. To solve operational difficulties, Jia'an local government announced special enterprise rescue policies, such as ensuring credit loan balances for small and micro enterprises remained unchanged, reducing financing costs for small and micro companies, reducing taxes and fees, and advocating rent reductions for business premises, helping Tingting survive the crisis. The digital transformation that might have taken three to five years was accelerated by the pandemic, increasing urgency for Jia'an City's digitalization. Remembering the source of its success, to help Jia'an City overcome difficulties in accelerating industrial digitalization and digital industrialization, and to build "the number one city for digital applications," Tingting integrated business investment and group collaboration, giving back to society from funding, technology, and platforms. Tingting established a fund exceeding 1 million RMB for social digitalization projects, continuously improving Jia'an's "Jinfu Cloud" platform functions and ecosystem construction, promoting data valueization. Simultaneously, using technology, it provided a customized low-bandwidth version of popular video chat software free to anti-epidemic personnel. To help fund this effort, Tingting set up a donation button allowing any consumer to donate money to provide social support for millions of ongoing anti-epidemic workers.

(3) **Experiment 3**

Scenario 1 - Focal brand "Kuaixin" as initiator + first: Today, the logistics industry faces major challenges from environmental problems, with logistics transportation causing huge greenhouse gas emissions that threaten

ecological environment and social welfare. In this context, logistics brand Kuaixin announced it would undertake social responsibility, launching the industry's first social responsibility project focusing on environmental protection—the Dust-Clearing Plan—in December 2022. Kuaixin took the lead in investing in this project and actively shared experience in carbon dioxide removal and new energy usage. The Dust-Clearing Plan's uniqueness lies in transforming low-carbon emission reduction work from simple cost expenditure into sustainable investment. In this plan, logistics brand Suxing became one of the beneficiaries. As a brand with strength comparable to Kuaixin, Suxing achieved financial revenue growth through environmentally friendly investment based on Kuaixin's collaboration. In December 2023, Suxing announced a 3 million RMB investment to support the Dust-Clearing Plan. Suxing emphasized that as a beneficiary of the plan, it had obtained clean energy worth 3 million RMB. To continuously promote green development in the logistics industry, brand Suxing upholds the belief of reciprocation and gratitude, returning obtained benefits to environmental protection, creating positive resource 回馈.

Scenario 2 - Focal brand "Kuaixin" as reciprocator + last: Swap the two brands in Scenario 1.
Scenario 3 - Focal brand "Kuaixin" as initiator + last: In December 2023, logistics brand Suxing announced a 3 million RMB investment to reciprocate the Dust-Clearing Plan, a social responsibility project focusing on environmental protection. To continuously promote green development in the logistics industry, Suxing upholds the belief of reciprocation and gratitude, creating positive resource 回馈. The Dust-Clearing Plan's uniqueness lies in transforming low-carbon emission reduction work from simple cost expenditure into sustainable investment. Kuaixin achieved financial revenue growth through environmentally friendly investment based on peer collaboration. As a beneficiary of the Dust-Clearing Plan, Suxing obtained clean energy worth 3 million RMB. The Dust-Clearing Plan was initiated by another logistics brand Kuaixin in December 2022, the industry's first social responsibility project focusing on environmental protection. As a brand with strength comparable to Suxing, Kuaixin took the lead in investing in the Dust-Clearing Plan, actively sharing experience in carbon dioxide removal and new energy usage, proactively undertaking social responsibility.

Scenario 4 - Focal brand "Kuaixin" as reciprocator + first: Swap the two brands in Scenario 3.

(4) **Experiment 4**
Scenario 1: Initiator + membership group
Scenario 4: Reciprocator + dissociative out-group

Note: Figure translations are in progress. See original paper for figures.