THE INTERPLAY OF ALTRUISM AND FINANCIAL INCENTIVES: MAXIMIZING ONLINE REVIEWS THROUGH EFFECTIVE MESSAGING

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ABSTRACT

Online reviews are vital for e-commerce, yet motivating consumers to write them remains challenging. While financial incentives are commonly used, they can crowd out altruistic motives, leading to suboptimal outcomes. Drawing on Social Exchange Theory, this study examines how the beneficiary of altruism (the company vs. other customers) moderates the impact of incentives on review-writing decisions. We test our hypotheses in a quasi-experimental field study in collaboration with a major North American online retailer and a controlled experiment. Our findings show that reinforcing altruism through helping the company negatively interacts with financial incentives compared to helping other customers. We contribute to the literature on altruism, Social Exchange Theory, and eWOM creation and propose a cost-effective and straightforward modification to review solicitation messages to boost review volume.

Keywords: Online product reviews; Altruistic motives; Prosocial behavior; Social Exchange Theory

1. Introduction

Online product reviews are important for retailers because they impact sales, shape consumer beliefs, and impact brand reputation (Z. Li et al., 2025; Liu et al., 2022; Q. Lu et al., 2014). An industry report shows that displaying online reviews increases purchase likelihood by 270% for low-price retailers and up to 400% for high-end gift retailers (Medill Spiegel Research Center, 2021). Online reviews shape consumer beliefs by impacting the perceived affective quality and trust in the product (Benlian et al., 2012) and help customers learn about online products and retailers before making a purchase decision (X. Lu et al., 2014). They also affect the presence of brands in consumers' consideration set (Floyd et al., 2014).

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Consumers mainly produce online reviews voluntarily, which can lead to under-provision (Fradkin & Holtz, 2023). For instance, Jindal and Liu (2008) found that most of Amazon's products have no reviews. This is problematic for retailers, as it has been shown that having a minimum number of reviews for a given product is necessary to convince online shoppers to buy the product (Askalidis & Malthouse, 2016). This under-provision of reviews has led some retailers to utilize reward systems to solicit reviews. These reward systems take various forms. For instance, some firms offer free products, store discounts, or loyalty points in exchange for reviews (Smith, 2021). Yet, the most widely used type of reward is financial incentives (Stephen et al., 2012).

Financial incentives are only one of the many motivations for writing an online review. Hennig-Thurau et al. (2004) propose a typology that includes prosocial motives such as concern for other consumers and helping the company. They also find that consumers can display multiple motives simultaneously. However, combining different motives is not always additive (Frey and Oberholzer-Gee 1997; Gneezy and Rustichini 2000). In the context of online reviews, this can lead to negative spillover effects, where incentivizing reviews undermines a user's altruistic motivation to help others (Qiao et al., 2020; Reimer & Benkenstein, 2016). This presents a critical puzzle for retailers seeking to increase review volume without undermining the prosocial norms that sustain their communities.

This crowding-out phenomenon presents a challenge to the classic tenets of Social Exchange Theory (SET; Homans 1958; Jahan and Kim 2020; Lysenstøen et al. 2021), which would predict that increasing rewards should straightforwardly increase behavior. Our research tackles this theoretical tension. We extend SET by proposing a critical boundary condition that explains when financial incentives complement versus crowd out altruism: the identity of the beneficiary. Following the call for contextualized theory building (Hong et al. 2014), we argue that the framing of the exchange as either social or economic depends on the alignment between the incentive provider and the beneficiary of the prosocial act. When the beneficiary is a third party (other customers), the exchange retains a social frame, and the incentive acts as a complementary reward. In contrast, when the provider is also the beneficiary (the company), the exchange is reframed as a transactional economic exchange, thereby diminishing the effect of altruistic motives.

We operationalize the reinforcement of consumers' altruism by manipulating the message retailers send to solicit reviews. In Study 1, we conducted a one factor between-subjects quasi-experiment using customers from a major online retailer. We show that reinforcing altruism leads to more review decisions than not doing so. In Study 2, we find compared to helping other customers, reinforcing helping the company diminishes the effect of financial incentives.

Our results provide major theoretical contributions. First, we reconcile Social Exchange Theory (Homans, 1958; Honeycutt, 1981) with the crowding-out literature (Deci, 1971, 1975; Frey & Oberholzer-Gee, 1997) by identifying a key boundary condition that dictates the outcome of combining financial and prosocial motives. In doing so, we extend SET by demonstrating how the identity of the beneficiary shifts the interaction from a social to an economic exchange frame. Second, we contribute to the eWOM literature (Babić Rosario et al., 2020) by providing a practical solution to the persistent challenge of incentive backfiring. Finally, we offer a nuanced view of altruistic motives in commerce, showing that an appeal to help the company can be counterproductive when paired with incentives, unlike an appeal to help other consumers.

Based on our findings, managers can increase the review volume on their platforms by pointing out that the reviews can help other customers make better purchase decisions. This simple and cost-efficient modification to the review solicitation message can help retailers increase the conversion rate of their review solicitation message by up to 56%.

2. Theoretical Framework

In this research, we follow Hong et al. (2014) in developing our contextualized theory. We ground our theory on Social Exchange Theory (SET; Homans 1958). Social Exchange Theory (SET) offers a foundational framework for understanding interpersonal interactions as transactions where individuals seek to maximize benefits and minimize costs (Homans, 1958; Blau, 1964). SET is characterized by exchange of value between humans, whereby each individual responds to the behavior of others by providing a proportionate value (Homans, 1958). In marketing, SET provides a valuable theoretical framework for explaining consumer interactions with brands and other customers as reciprocal relationships. In these relationships consumers weigh personal investment against potential value they receive in that relationship (Thibaut & Kelley, 1959; Emerson, 1976).

While SET provides a robust framework for exchange, its classic formulation faces challenges in explaining contexts where financial incentives for prosocial acts backfire. It is a phenomenon known as the "crowding-out effect" (Frey & Oberholzer-Gee, 1997; Gneezy & Rustichini, 2000). A straightforward application of SET would predict that adding rewards should invariably increase participation, yet the opposite is often observed (Gneezy et al., 2011; Gneezy & Rustichini, 2000). To resolve this tension, we extend SET by introducing a critical moderator that governs

tythe nature of the exchange: the identity of the beneficiary of the prosocial act. We argue that this factor determines whether an incentive is integrated into a social exchange frame or transforms it into a purely economic one, thereby modifying the simple cost-benefit calculus of traditional SET. Our framework thus specifies when financial incentives complement prosocial motives versus when they undermine them.

Following Hong et al. (2014), we set our context to online review writing. Online reviews are a subset of electronic word-of-mouth (eWOM; Babić Rosario, De Valck, and Sotgiu 2020). Electronic word-of-mouth (eWOM) enables customers to learn about products and to interact socially on retailer platforms (X. Lu et al., 2014) and serve as a medium to signal to others about one's purchase experience (Yoon, 2012). Adapting Hennig-Thurau et al. (2004)'s definition of eWOM, Filieri (2015, p. 1262) defines online customer reviews as "any positive, neutral, or negative online review about a product or service created and published on a CRW [customer review website] by a potential, former, or actual customer". Many retail websites have become, in effect, review platforms that offer customers the opportunity to create online reviews about the products they purchased through star ratings and open-ended text (Mudambi and Schuff , 2010).

Online product reviews are important in consumers' purchase journey. Potential customers of a product rely on online reviews to infer the underlying quality of the product and make purchase decisions based on such inferences (J. Wang et al., 2012). They also increase communication among customers and reduce purchase uncertainty (M. Wang et al., 2015). Despite their importance for consumers to better assess the quality of products and mitigate online purchase risks and for businesses to increase purchase intentions and sales, studies have shown that online reviews suffer from under-provision. On Amazon, for instance, most products have zero reviews (Jindal & Liu, 2008), substantially reducing their conversion rate (Askalidis & Malthouse, 2016).

Based on Social Exchange Theory (SET), review writing is a costly task that takes time and effort. The benefit to the review writers can be understood through review motives. Several prior works have experimentally explored various motives for writing online reviews (Dichter, 1966; Engel et al., 1995; Hennig-Thurau et al., 2004; Sundaram et al., 1998). Given the focus of this work on prosocial behavior and financial incentives, we contextually focus on three main motives from Hennig-Thurau et al. (2004), namely financial incentives, helping the company, and helping other consumers (Hong et al., 2014). These three motives fit well into the Social Exchange Theory framework.

Some retailers reward reviewers financially to increase the volume of online product reviews (Smith, 2021). Financial incentives are one of the primary approaches to soliciting product reviews (Garnefeld et al., 2020). Financial incentives for writing reviews are mostly monetary compensations that firms offer to the reviewers in exchange for their reviews (Stephen et al., 2012). As an important driver of human behavior, financial incentives are considered a manifestation of the firm's appreciation for the reviewer's efforts (Lawler, 1982). Based on Social Exchange Theory, financial incentives can be strong reinforcers of behavior (Homans, 1958). In the context of online review creation, financial incentives are identified as main motives for writing reviews (Hennig-Thurau et al., 2004).

Many economists assume that self-oriented motives are the main motivation of human beings (Fehr & Schmidt, 2006). The principal-agent theory in economics claims that performance is positively correlated with financial incentives (Alchian & Demsetz, 1972; Fama & Jensen, 1983). This theory suggests that introducing financial incentives for participating in a task increases the likelihood of participation. Thus, for online reviews, providing financial incentives for writing reviews increases review decision.

H1: Offering financial incentives increases review decision.

2.1 Altruism

In the context of online review writing, altruism (i.e., concern for other consumers and helping the company) is identified as a main motive for writing reviews (Dichter, 1966; Engel et al., 1993; Hennig-Thurau et al., 2004; Sundaram et al., 1998). Altruism has been defined as unconditional kindness, a favor given that is not a response to a favor received (Andreoni, 1989; Andreoni & Miller, 2002; Charness & Rabin, 2002; Cox, 2007). An altruist is willing to sacrifice their own resources to improve the well-being of others. Theoretically, it has been argued that altruism, in its pure form, may not exist, and most seemingly altruistic acts could be explained by self-centered motives (Berger, 2014). In the context of online reviews, for example, a consumer may claim to write reviews out of concern for other consumers, yet this could be driven by a motivation to reap reciprocal benefits in the future, anticipating that fellow consumers will, in turn, provide helpful reviews.

Consequently, we adopt Andreoni's (1989) definition of altruism as a favor not given in response to a prior favor. This excludes relationships that are framed in a reciprocal way. In Hennig-Thurau et al. (2004)'s categorization of reviewer motives, concern for other consumers and helping the company are classified as altruistic motives. Using Andreoni's (1989) definition of altruism, concern for other consumers is indeed altruistic, because the reviewer is not responding to a favor received by other consumers. Helping the company can be thought of as altruistic when no direct exchange is offered. We acknowledge, however, that this motive is complex and may also be intertwined with

relational norms, such as customer loyalty or a sense of reciprocal obligation towards a firm with which the consumer has a positive relationship. For the purpose of our framework, we classify it as a prosocial motive directed at the firm, which we distinguish from altruism directed at a third party.

2.2 Multiple motives

In their empirical analysis of electronic word of mouth (eWOM) motives, Hennig-Thurau et al. (2004) empirically segmented reviewers based on their motives for writing eWOM. They found that there is a segment of reviewers with multiple simultaneous motives. Theoretically, this is in line with SET because an individual can receive multiple benefits for performing a task. In fact, these multiple benefits should compound and make the task more attractive for the reviewer. For example, a reviewer can be driven to help other consumers with their review and, simultaneously, benefit from the financial incentives that the firm offers them. Multiple-motive reviewers form the most desirable segment of the reviewer population. They produce the highest number of reviews and have the highest platform visits (Hennig-Thurau et al., 2004). Therefore, retailers should reinforce multiple motives in their reviewers. Reinforcing financial incentives is trivially done by offering them. Altruistic motives can be reinforced by reminding reviewers that their review helps other customers or the company.

H2: Compared to offering financial incentives alone (i.e., single motive), supplementing it with a prosocial message that reinforces altruism (i.e., multiple motives) increases review decision.

As discussed, the interaction between financial incentives and prosocial behavior creates a puzzle for a classic interpretation of SET. While the theory posits that individuals seek to maximize rewards (Homans 1958), suggesting that payment should always increase prosocial acts, a substantial body of research reveals a more complex reality. Titmuss (2018) first articulated the concern that paying blood donors would reduce their willingness to donate

As discussed, the interaction between financial incentives and prosocial behavior creates a puzzle for a classic interpretation of SET. As Social Exchange Theory (SET) posits that individuals seek to maximize their rewards while minimizing their costs (Homans, 1958), one would expect that increasing the reward for a particular behavior, such as offering payment for a prosocial act, would invariably lead to an increase in that behavior. For instance, in the context of blood donation, a straightforward application of SET would suggest that paying donors should lead to an increase in the willingness to donate. However, a substantial body of research, particularly within the domain of experimental economics and social psychology, reveals a far more complex reality regarding financial incentives and prosocial behavior. Titmuss (2018) articulated the concern that paying blood donors would reduce their willingness to donate. Subsequently, Frey and Oberholzer-Gee (1997) explored the "Not In My Backyard" problem, for which an increase in payment in exchange for establishing locally unwanted land uses backfired. People who were offered higher amounts for the siting of unwanted facilities had a lower willingness to accept the facility in their neighbourhood. This backfiring of financial incentives violates the main tenets of Social Exchange Theory.

Gneezy and Rustichini (2000) offered a key experiment that details the crowding-out effect of incentives. They found that not paying led to higher task participation than paying a small amount. However, once payments exceeded a certain threshold, participation increased beyond the no-payment level. From this, Gneezy and Rustichini (2000) show that introducing payment fundamentally alters the task's nature. It shifts the exchange from a social exchange, driven by altruism, to an economic exchange, in which altruistic motives become less influential.

We reconcile Social Exchange Theory with the backfiring of financial incentives in prosocial settings by arguing that the effectiveness of a financial incentive hinges on how it frames the exchange relationship (i.e., a social vs. an economic exchange). A key determinant of this framing is the relationship between the incentive provider and the beneficiary of the altruistic act (Honeycutt, 1981). When the provider of the financial incentive is also the direct beneficiary of the act (e.g., a company paying for a review to help itself), the exchange is reframed as economic exchange. The incentive is perceived as a direct payment for a service.

In contrast, when the incentive provider is distinct from the beneficiary (e.g., a retailer offering an incentive for a review that helps other customers), the social exchange framework is preserved. In fact, the retailer portrays itself as an altruistic actor willing to sacrifice its resources to help other customers. Moreover, the reviewer's primary altruistic motive (i.e., helping a third party) remains salient (Table 1). As a result, financial incentives would be more likely to enhance rather than undermine altruism.

H3: When the beneficiary of altruism is the provider of financial incentives, the increase in review decision due to financial incentives is smaller than when the beneficiary of altruism is a third party.

Table 1. The Beneficiary of Altruism Reinforcement, the Provider of Fnancial Incentives, and the Dominant Motivational Frame

Beneficiary of Altruism Reinforcement	Financial Incentive	Dominant Motivational Frame	Hypothesized Impact on Review Decision
Company	No	Social Exchange (Altruism)	Baseline
	Yes	Economic Exchange (Transactional)	Weak Positive (Dampened Effect)
Other customers	No	Social Exchange (Altruism)	Baseline
	Yes	Social Exchange (Altruism)	Positive

To test this framework, we first performed a quasi-experiment with a major North American online retailer to test H2 (Study 1). Next, we tested H1 and H3 in a controlled experiment (Study 2).

3. Study 1

In this study, our objective is to test, in a real-life consumption environment where financial incentives are provided, whether altruistic reinforcement increases review decisions compared to no altruistic reinforcement (H2).

3.1 Experimental Design

We study the effect of altruistic reinforcement through review solicitation messages in a one factor (Altruistic reinforcement: helping the company vs. helping other customers vs. no altruistic reinforcement) between-subjects field experiment. We partnered with a major North American online retailer. The retailer sells apparel and sports goods from major brands (e.g. North Face, Adidas). The retailer already incentivizes its reviewers by sending them a review solicitation message after each purchase and offers them a $10 store credit after their review is published on the retailer's platform. This "no altruistic reinforcement" group acts as our control group. Since the retailer had already been using the control review solicitation message for years, we refrained from completely changing the retailer's message.

We set the email title for the helping the company group as "Help us and receive $10 credit". The email includes two main sentences for this condition, i.e., "**We** love to hear from you" and "Your review helps **us** improve our business." For the helping other customers group, we set the email title as "Help other customers and receive $10 credit". The email content includes "**Other customers** love to hear from you" and "Your review helps **other customers**, like you, to make better purchase decisions." The choice of the phrase "like you" is informed by Batson, Lishner, and Stocks (2015) who argue that perceived similarity leads to higher altruism. Therefore, we used "like you" to augment altruistic reinforcement.

3.2 Sample and Procedure

Due to technical challenges on the retailer side, sending different review solicitation messages concurrently was impossible. As a result, we sent the review solicitation message for each condition sequentially, hence the quasi-experimental nature of the study (Table 2). Previous field studies have also used different days for different conditions (e.g., Cabral and Li 2015). Note that the number of emails sent each day is based on the number of orders fulfilled on that day. Thus, we could not manipulate daily fluctuations in the number of sent emails.

We collected the review data 91 days after the first review solicitation email was sent, meaning each review solicitation message had at least 88 days and, at most, 91 days to lead to a review decision. It also means that for some cases, a review was due to a reminder email sent after the treatment period and did not include the manipulated review solicitation message. Thus, we excluded those reviews from all groups to compile the set of valid emails (Table 2).

For the "No altruistic reinforcement" group, of the 2160 valid emails sent, 486 reviews were written; for helping the company group, of the 1884 valid emails sent, 603 reviews were written; and for helping other customers group, of the 998 valid emails sent, 350 were written.

Table 2. Review Solicitation Messages for Study 1

Altruistic reinforcement	Email title	Email content	Date	Emails sent	Valid emails[1]	Reviews written
No altruistic reinforcement	Review your purchase and receive $10 credit	Hello {customerName}, **You can receive a $10 credit, valid on your next purchase, by reviewing {productName}.** Once published, you will receive an email confirming this fact, and the $10 credit will be added directly to your account. Please note, the credit will expire in 90 days from the date of the confirmation email.	2022.10.24	2783	2160	486
Help the company	Help us and receive $10 credit	Hello {customerName}, **We** love to hear from you. Could you please take some time to write a review about {productName}? Your review helps **us** improve our business. You can receive a **$10 credit** after your review of {productName} is published. Once published, you will receive an email confirming this fact, and the credit will be added directly to your account. Please note, the credit will expire in 90 days from the date of the confirmation email.	2022.10.25	2793	1884	603
Help other customers	Help other customers and receive $10 credit	Hello {customerName}, **Other customers** love to hear from you. Could you please take some time to write a review about {productName}? Your review helps **other customers**, like you, make better purchase decisions. You can receive a **$10 credit** after your review of {productName} is published. Once published, you will receive an email confirming this fact, and the credit will be added directly to your account. Please note, the credit will expire in 90 days from the date of the confirmation email.	2022.10.27	1726	998	350
Total				7302	5042	1439

Notes: [1] Excluding reviews generated from unrelated emails.

3.3 Measures

The dependent variable in Study 1 is review decision. It is a binary variable that takes the value one (zero) when the customer receives a review solicitation message and writes (does not write) a review on that email. We also calculated a series of reviewer-level control variables that measure historical behavior of a given reviewer. *Average historical emails per order* measures how many review solicitation emails, on average, the retailer sent for each previous order that a given customer made. *Historical review count* measures how many reviews a given customer had already written before the experiment began. *Historical total emails* measures the total number of review solicitation emails that the retailer had sent to the customer before the experiment began. *Reviewer age* aims to approximate the age of the reviewer on the platform by measuring the difference between the date of data collection and the date when a given customer received their first review solicitation message, in days.

3.4 Results

In the "No altruistic reinforcement" group, there are 2160 customers 22.50% (SD = 41.77) of whom decided to write a review. We have 1884 customers in the "helping the company" group, with 32.01% (SD = 46.66) writing a review. Finally, 998 customers are in the "helping other customers" group with 35.07% (47.74) review decision on average (Table 3. Descriptive Statistics for Review Decision by Altruistic Reinforcement3).

Table 3. Descriptive Statistics for Review Decision by Altruistic Reinforcement

Altruistic reinforcement	n	M	SD
No	2160	22.50%	41.77%
Helping the company	1884	32.01%	46.66%
Helping other customers	998	35.07%	47.74%

Notes: n, M and SD represent sample size, mean, and standard deviation, respectively.

Pearson correlation of the reviewer-level variables (Table 4) shows high correlation for *historical total emails* and *historical review count* (0.79) and *historical total emails* and *reviewer age* (0.70), which could lead to multicollinearity in regression analyses. We use Variance Inflation Factor to identify and discard variables with high multicollinearity.

Table 4. Descriptives for Reviewer-level Variables

Variable	*M*	*SD*	1	2	3
1. Reviewer age	348.73	236.19	—	—	—
2. Historical review count	4.20	8.75	0.48** [0.46, 0.50]	—	—
3. Historical total emails	9.09	11.69	0.70** [0.69, 0.71]	0.79** [0.78, 0.80]	—
4. Average historical emails per order	1.32	0.64	0.55** [0.54, 0.57]	0.28** [0.26, 0.30]	0.42** [0.40, 0.44]

** $p < .01$.

Notes: M and *SD* are used to represent mean and standard deviation, respectively. Values in square brackets indicate the 95% confidence interval for each correlation. The confidence interval is a plausible range of population correlations that could have caused the sample correlation.

We use logistic regression to model review decision because the review decision is a binary variable. Altruistic reinforcement is the independent variable, with historical review count, historical total emails, average historical emails per order, and the base-10 logarithm of reviewer age (reviewer $age_{min} = 87$, review $age_{max} = 716$, $log(review\ age)_{min} = 1.94$, $log(review\ age)_{max} = 2.85$) as control variables.

In Model 1, the logistic regression shows high Variance Inflation Factor (VIF) for historical review count (4.020) and historical total emails (5.280), which suggests multicollinearity, so we remove these two covariates and re-run the test (Model 2). Model 2 shows that *average historical emails per order* has a significant positive effect on review decision (B = 0.878, Wald(1) = 109.996, p<0.001) such that for a unit increase in *average historical emails per order*, the odds of review decision increases by 140.7%. It also shows that the base-10 logarithm of *review age* has a significant positive effect on review decision (B = 1.509, Wald(1) = 162.970, p<0.001). Controlling for review age and average historical emails per order, altruistic reinforcement, specifically reinforcing helping the company motive (B = 0.47, Wald(1) = 37.79, p < 0.001, odds ratio = 1.60; Table 4, Model 2) and helping other customers motive (B =

0.81, Wald(1) = 77.78, $p < 0.001$, odds ratio = 2.24; Table 4, Model 2; Figure 1) significantly increases the odds of review decision compared to no altruistic reinforcement (i.e., offering financial incentives alone), which supports H2.

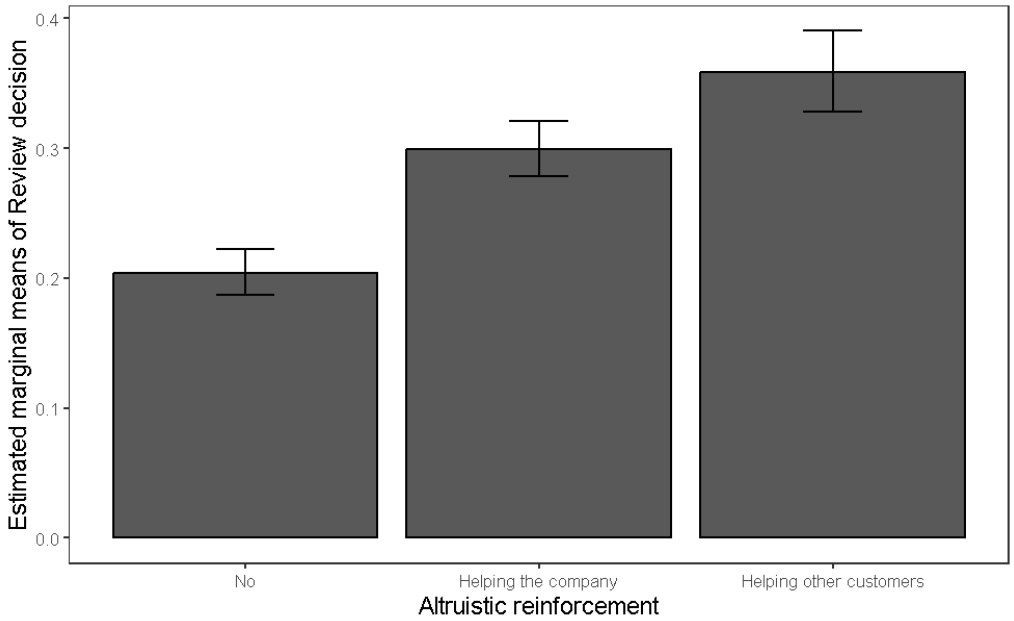
One criticism of Model 2 could be potential for omitted variable bias. To verify whether this is the case, we run a ridge regression using all covariates. We tuned the regularization parameter λ via cross-validation, yielding λ_{min} = 0.023. The ridge regression coefficients (Table 5, Model 3) are directionally consistent to Models 1 and 2, hence our interpretation of the results remain the same.[2]

[2] We thank an anonymous reviewer for bringing this potential bias and the ridge method to our attention.

Table 5. Prosocial Reinforcement with Reviewer-level Covariates on Review Decision - Logistic Regression

	Model 1							Model 2							Model 3 (Ridge)
Source	B	SE	Wald	df	p	Odds ratio	VIF	B	SE	Wald	df	p	Odds ratio	VIF	B
Altruistic reinforcement=No	—	—	26.44	2	<0.001	—	1.01	—	—	84.67	2	<0.001	—	1.014	—
Altruistic reinforcement=Helping the company	0.38***	0.09	16.05	1	<0.001	1.46		0.47***	0.08	37.79	1	<0.001	1.60		0.36
Altruistic reinforcement=Helping other customers	0.52***	0.11	21.46	1	<0.001	1.68		0.81***	0.09	77.78	1	<0.001	2.24		0.48
Average historical emails per order	1.15***	0.12	97.59	1	<0.001	3.17	1.21	0.88***	0.08	110.00	1	<0.001	2.41	1.193	0.27
log(Reviewer age)	1.26***	0.17	56.34	1	<0.001	3.51	1.93	1.51***	0.12	162.97	1	<0.001	4.52	1.195	0.20
Historical review count	0.38	0.01	617.78	1	<0.001	1.47	4.02[1]	—	—	—	—	—	—	—	0.16
Historical total emails	-0.20	0.01	271.06	1	<0.001	0.82	5.28[1]	—	—	—	—	—	—	—	-0.04
Constant	-5.96***	0.38	247.92	1	<0.001	<0.01	—	-6.41***	0.29	486.64	1	<0.001	<0.01	—	-3.07

Note. [1]. Variance Inflation Factor (VIF) is high, suggesting multicollinearity.
*** $p < 0.001$



Notes: Error bars: 95% CI

Figure 1. The Effect of Prosocial Reinforcement on Review Decision

3.5 Discussion

Study 1 provides strong, real-world evidence that supplementing a financial incentive with a prosocial, altruistic message significantly increases review submission rates. This finding supports H2 and aligns with the foundational premise of Social Exchange Theory (SET) that multiple benefits (i.e., both economic and altruistic) can compound to increase the perceived value of an activity and encourage participation. From a practical standpoint, this result is highly valuable, demonstrating that a simple, low-cost modification to a review solicitation message can yield a significant uplift in user-generated content in a natural retail setting.

While the ecological validity of this field study is a key strength, it has several limitations that warrant a more controlled investigation. First, the quasi-experimental design means group assignment was based on purchase date, which could introduce temporal confounds. Second, the heterogeneity in product prices across conditions could obscure or interact with the effects of the messaging. Third, and importantly, the altruistic reinforcement messages were inherently longer than the control message. It is therefore possible that the increased engagement was due to message length or increased salience rather than the prosocial content itself.

Most critically, Study 1 was not designed to test our core theoretical extension regarding the identity of the beneficiary (H3). To address these limitations and, more specifically, to isolate the causal mechanism proposed in H3, we designed a controlled laboratory experiment for Study 2. This approach allows for true random assignment, holds product and pricing constant, and enables a direct comparison between the two types of altruistic appeals: helping the company versus helping other customers.

4. Study 2

4.1 Experiment Design

Study 2 is a controlled experiment designed to achieve two goals. First, it formally tests the main effect of financial incentives on review intention (H1) and addresses the methodological limitations of Study 1 (e.g., non-random assignment, price heterogeneity). More importantly, it is designed to isolate and test the core causal mechanism of our theoretical extension of Social Exchange Theory: that the identity of the altruistic beneficiary moderates the effect of financial incentives (H3). By manipulating both the presence of an incentive and whether the beneficiary is the company or other customers, we can directly observe whether aligning the incentive provider with the beneficiary transforms the exchange from a social to an economic one, thereby dampening the incentive's effectiveness.

We carry out a 2 (Altruistic reinforcement: helping the company vs. helping other customers) x 2 (Financial incentive: Yes vs. No) between-subjects experiment. For the altruistic reinforcement, we use the same treatment as Study 1 (Table 6).

Table 6. Review Solicitation Messages for Study 2

Altruistic reinforcement	Financial incentives	Message
Helping other customers	No	Other customers would love to hear from you. Could you please take some time to write a review for the product you purchased? Your review helps other customers, like you, make better purchase decisions.
	Yes	Other customers would love to hear from you. Could you please take some time to write a review for the product you purchased? Your review helps other customers, like you, make better purchase decisions. You will receive a $10 credit for your effort after you submit your review.
Helping the company	No	We would love to hear from you. Could you please take some time to write a review for the product you purchased? Your review helps us improve our business.
	Yes	We would love to hear from you. Could you please take some time to write a review for the product you purchased? Your review helps us improve our business. You will receive a $10 credit for your effort after you submit your review.

4.2 Sample and Procedure

We initially recruited 300 U.S. participants (75 per condition) from Prolific, but after excluding those who took the survey more than once (i.e., had duplicate Prolific IDs), we were left with 258 participants. A power analysis was conducted using the pwr package in R to determine the minimum required sample size for detecting medium-sized effects (f = 0.25;(Cohen, 2016)) with a power of 0.80 and an alpha level of 0.05. The analysis indicated that approximately 45 participants per cell (180 total) would be needed for sufficient statistical power in a 2×2 factorial ANOVA with four groups. Our final sample of 300 participants (75 per cell) thus exceeded this requirement, ensuring adequate power to detect not only main effects but also interaction effects of medium or smaller size.

The participants received USD 1.50 for participating in the study. During the experiment, we used an attention check that explicitly asked the participants to answer "Strongly disagree" for one item. After excluding participants who did not finish the experiment, withdrew their consent, or failed the attention check, we were left with 236 valid participants (M_{age} = 32.94, SD_{age} = 10.98; 47.0% female).

Participants were asked to imagine an online retailer from which they had previously bought products. Next, they were shown the following scenario: "You order the product below [a pair of gloves] from their website. After your order is delivered, you receive the following email from the online retailer." They were randomly assigned to one of the 4 groups in Table 6 and saw their corresponding message. After reading the message, the participants expressed their review intention.

4.3 Stimulus Development

We ran a pretest to find a gender-neutral product. We chose this criterion to ensure that the product in the scenarios appeals to participants regardless of their gender orientation. We pretested 9 products from an online retailer's catalog on gender orientation using 73 participants from Amazon Mechanical Turk. Forty-eight participants (25% female) passed the attention check. We selected the gloves (Figure 3), which scored high on gender neutrality in our pretest.

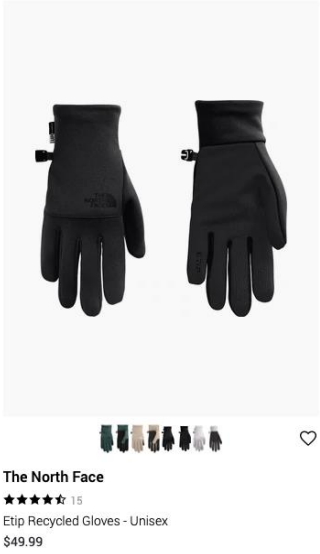


Figure 2. Product Shown in the Scenario in Study 2.

4.4 Measures

For the main experiment, after seeing the review solicitation email, participants were asked their review intention ("Would you accept to write a review?") on a 5-point Likert scale (1= definitely not, 5 = definitely yes). Although the literature has various validated scales to measure review intention (Beldad & Voutsas, 2018; Rasool & Pathania, 2025; Tata et al., 2021), their conceptualization of review intention involves intention to write reviews in a relatively distant future (e.g., in the coming weeks; Beldad and Voutsas 2018), which is different from our conceptualization involving immediate decision to write a review.

4.5 Results

We performed manipulation checks to see whether the helping the company, other cutomers, and financial incentives motives have been successfully manipulated. The results show successful manipulation of our experimental groups (details in Appendix).Without financial incentives, the participants in the helping other customers group have an average review intention of 2.75 (SD = 0.97), whereas in the helping the company group, the average review intention is 2.95 (SD = 0.93). With financial incentives, the participants in the helping other customers group have an average review intention of 4.32 (SD = 0.72), whereas in the helping the company group, the average review intention is 3.95 (SD = 1.09; Table 7).

Table 7. Means and Standard Deviations for Review Intention.

	Financial incentive			
	No		Yes	
Altruistic reinforcement	M	SD	M	SD
Helping other customers	2.75	0.97	4.32	0.72
Helping the company	2.95	0.93	3.95	1.09

Note: M and *SD* represent mean and standard deviation, respectively.

A two-way ANOVA does not show any significant main effect of helping the company (vs. helping other customers) message on review intention (F(1, 232) = 0.486, p = 0.487, partial η^2_p = 0.002; Table 8) but shows significant positive main effect of financial incentives on review intention (B = 1.28, SE = 0.12, F(1, 232) = 110.654,

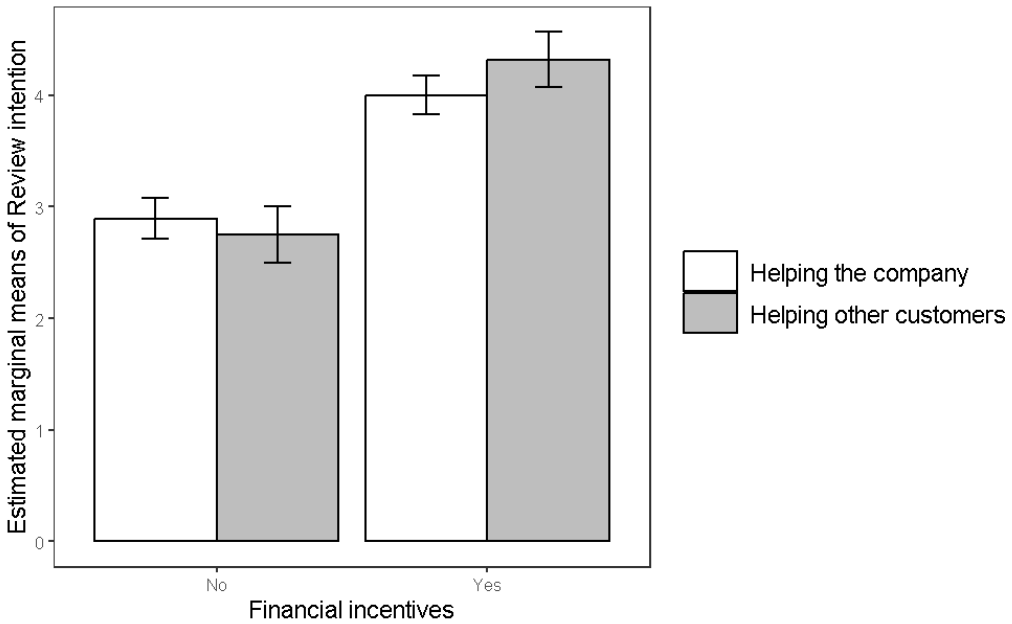
p<0.001, partial η^2_p = 0.323; Table 8; H1 supported). It also shows a significant interaction between altruistic reinforcement and financial incentives (F(1, 232) = 5.352, p = 0.022, partial η^2_p = 0.023; Table 8).

Table 8. Fixed-Effects ANOVA Results using Intention to Write a Review as the Dependent Variable.

Predictor	SS	df	Mean Square	F	p	partial η^2
Corrected Model	103.073[a]	3	34.358	39.088	<0.001	0.336
Intercept	2874.556	1	2874.556	3270.339	<0.001	0.934
Altruistic reinforcement	0.427	1	0.427	0.486	0.487	0.002
Financial incentive	97.262	1	97.262	110.654	<0.001	0.323
Altruistic reinforcement x Financial incentive	4.705	1	4.705	5.352	0.022	0.023
Error	203.923	232	0.879			
Total	3191.000	236				
Corrected Total	306.996	235				

Notes: [a] R Squared = 0.336 (Adjusted R Squared = 0.327);

Figure 3 illustrates that under financial incentives, reinforcing helping the company leads to lower intentions to write reviews than helping other customers. A simple contrast test shows that the increase due to financial incentives is significantly larger when helping other customers is reinforced compared to when helping the company is (Mean difference = 0.37, SE = 0.17, t = 2.14, p = 0.05). This supports H3. Additionally, this difference appears to diminish greatly in the no-incentive conditions. The contrast test shows that the difference between reinforcing helping the company versus other customers is not significant when no incentive is offered (Mean difference = -0.20, SE = 0.17, t = -1.14, p = 0.26). The significant interaction and the contrast tests corroborate H3.



Notes: Error bars: 95% CI

Figure 3. Interaction between Altruistic Reinforcement and Financial Incentives on Review Intention.

4.6 Discussion

The results of Study 2 provide strong support for our theoretical framework. We find a significant positive main effect of financial incentives, supporting H1. More critically, the significant interaction between the incentive and the altruistic message provides direct evidence for H3 and our proposed extension of Social Exchange Theory. The finding that the financial incentive was significantly less effective when paired with a "help the company" appeal versus a "help other customers" appeal demonstrates that the identity of the beneficiary is a key moderator. This supports our central argument: when the incentive provider is also the beneficiary, the request is framed as a transactional economic exchange, which dampens the prosocial motive. Conversely, when the beneficiary is a third party, the social exchange frame is preserved, and the incentive acts as a complementary, rather than a conflicting, reward.

An equally insightful finding is the lack of a significant difference between the two altruistic appeals in the absence of financial incentives. This suggests that, on its own, an appeal to help the company can be as effective as an appeal to help other customers. This aligns with our earlier conceptualization that "helping the company" may tap into altruistic motives. It is only when a financial payment is introduced that this relational appeal is re-contextualized as a transactional exchange.

This study has several limitations. First, as a controlled experiment, we measured review intention rather than actual review-writing behavior, which limits the external validity of our findings. Second, while we controlled for product and price, the difference in message length between the incentive and no-incentive conditions remains a potential confound. Third, our research focuses on review quantity (i.e., the decision to write a review). A critical next step would be to analyze review quality, such as length, sentiment, and perceived helpfulness, to see if the motivational framing also impacts the content of the reviews submitted. Finally, our participants were from a single cultural context (i.e., US participants). Future research could explore whether these effects hold in more collectivist cultures where the norms of helping the community or a company may differ.

5. General Discussion

This research finds that altruistic reinforcement through review solicitation messages strongly impacts the decision to write reviews. We show that altruistic reinforcement can be an effective tool to increase review decisions, particularly in conjunction with financial incentives (Study 1). Importantly, we deal with a persistent challenge that retailers face. While financial incentives can boost the quantity of online reviews, they risk undermining the very prosocial motives that sustain a healthy review ecosystem. This research resolves this practical and theoretical paradox. Across a large-scale field study and a controlled experiment, we demonstrate that the effectiveness of combining financial and altruistic motives hinges on a simple but powerful factor: the identity of the beneficiary. We show that when an incentive is paired with an appeal to help a third party (other customers), it significantly increases the decision to write reviews. However, when paired with an appeal to help the incentive provider (the company), its positive effect is significantly dampened (Study 2).

5.1 Theoretical Contributions

This research makes several theoretical contributions to the literature on prosocial behavior, electronic word-of-mouth (eWOM), and Social Exchange Theory (SET).

First, and most importantly, we extend Social Exchange Theory (SET) to better explain the crowding-out phenomenon. A classic SET perspective (Homans, 1958) struggles to account for why a financial reward would decrease, rather than increase, participation in a prosocial task. We resolve this tension by introducing the identity of the beneficiary as a key boundary condition. Our findings demonstrate that when the incentive provider is also the beneficiary of the prosocial act (the company), the interaction is reframed as a transactional economic exchange, diminishing the effect of altruistic norms. However, when the beneficiary is a third party (other customers), the social exchange frame is preserved, allowing the financial incentive to act as a complementary reward. This contribution refines SET by proposing a specific mechanism that governs the transition between social and economic exchange paradigms in mixed-motive contexts.

Second, we offer a more nuanced understanding of altruistic motives in eWOM. Prior research has often grouped motives like "helping the company" and "helping other consumers" under the general umbrella of altruism (e.g., Hennig-Thurau et al., 2004). Our results challenge this view, demonstrating that these motives function differently in the presence of incentives. We argue that "helping the company" can be rooted in relational norms like loyalty, which are vulnerable to being reinterpreted as transactional obligations when payment is introduced. In contrast, "helping other consumers" represents a form of third-party altruism that is more robust to the introduction of economic incentives.

Finally, we contribute to the eWOM literature by offering a theoretical and practical solution to the incentive crowding-out problem (Babić Rosario, De Valck, & Sotgiu, 2020). While many studies have identified the risks of incentivizing reviews (e.g., Qiao et al., 2020), our work is among the first to empirically demonstrate a framing

strategy that systematically mitigates these risks, allowing firms to leverage incentives without undermining the community-oriented goodwill that is crucial for long-term platform health.

5.2 Managerial Implications

Our findings provide clear, actionable, and low-cost strategies for managers seeking to increase the volume of user-generated content.

We find a straightforward primary directive. When offering a financial incentive, managers should frame the review solicitation message around helping other customers, not the company. The common appeal to "help us improve our business" is suboptimal and significantly dampens the effect of the incentive. As shown in our field study, emphasizing how a review helps other similar customers in making better decisions can increase review rates by more than 46% compared to a neutral request. Quantitatively, reminding customers that their review helps the company improve its business raises the odds of review submission by 60.1% (Table 4, Model 2). In contrast, highlighting benefits to other consumers boosts the odds by 124.5% (Table 4, Model 2). This stark difference underscores the power of altruistic framing as a cost-free means for increasing review rates. We recommend that companies reinforce altruism and ensure the beneficiary of altruism is a third party (e.g., other customers) in their business strategy. This helps maintain the customer-company relationship within the social exchange paradigm and improves the effect of financial incentives.

To design more effective review solicitation strategies, managers should consider when to prioritize financial incentives versus altruistic reinforcement. For low-stakes or budget-constrained campaigns, reinforcing altruistic motives alone (particularly toward third parties) can drive reviews without the costs or potential crowding-out risks of incentives. In contrast, financial incentives may be more suitable for high-value transactions (Suryawan et al., 2023), but only when paired with other-focused altruism to preserve social exchange dynamics and mitigate backlash.

Firms need to be extremely careful in crafting the altruistic message, as a wrong message (e.g., framing it as helping the company) can significantly reduce the value of financial incentives paid.This choice can vary by consumer and product category (K. Li et al., 2020; Weathers et al., 2015). For loyal or repeat customers, who often have stronger relational ties (X. Li et al., 2011; Zhang et al., 2021), company-focused altruism (e.g., "Help us improve") might suffice without incentives, leveraging existing trust. New or one-time buyers, however, respond better to third-party framing (e.g., "Assist fellow shoppers"), as it fosters a sense of community and reduces perceptions of economic manipulation.

For experience goods like services or apparel, where personal insights are highly valued (Hao et al., 2010; Mudambi & Schuff, 2010; Zhu & Zhang, 2006), altruistic appeals toward others can enhance authenticity and volume. For search goods like electronics, where factual details matter more (Hao et al. 2010), combining incentives with neutral or company-focused messaging may yield quicker results, though testing is advised to avoid diminishing prosocial motives. Ultimately, we encourage A/B testing of these framings in email campaigns or app notifications, monitoring not just review volume but also quality and sentiment, to tailor strategies to specific contexts.

5.3 Limitations and Future Research

This research has limitations that present valuable opportunities for future inquiry. Our research focused on the effect of reinforcing altruism and the beneficiary of altruism on consumers' decisions. The scope of this research was in a specific context (i.e., product review solicitation message) using a particular product category (i.e., apparel). To further test the external validity of our findings, future work should investigate the effect of beneficiary of altruism in other contexts and for other product or service categories. Influencer marketing is a context that could benefit from altruism reinforcement since influencers are mostly incentivized, and their reviews are often perceived as biased (Gerrath & Usrey, 2021). Future research should investigate how reinforcing altruistic motives in influencers could help mitigate such biases.

One potential limitation of our single retailer experimental setup is that these effects might be industry dependent or might vary in other cultures, as we tested the North American population. Future research should explore the differential effects of beneficiary of altruism in other cultural contexts, including cross-cultural settings. Moreover, incentive based reviews could also suffer from low effort or low quality (Khern-am-nuai et al., 2018), prompting future research could explore the effect of altruistic reinforcement and beneficiary of altruism on review length, valence, and helpfulness.

Another context for the study of altruism reinforcement is donations in the health sector. It has been shown that most blood donors have altruistic motives (Kasraian & Maghsudlu, 2012), and incentives could crowd out their prosocial motives and reduce their contributions (Goette et al., 2010). Future research can incorporate reinforcing altruism where the beneficiary is a third party (e.g., patients) into incentivized donations to mitigate the negative impact of incentives.

Finally, the rise of agentic AI and Large Language Models (LLMs) presents a novel methodological frontier for exploring behavioral dynamics in consumer behavior (Cillo & Rubera, 2025). Exploring LLMs as surrogate

consumers and how these new consumers respond to altruistic messaging is of theoretical and practical interest (Sarstedt et al., 2024). Current literature has already shown that Large Language Models can display behavior similar to humans in consumption settings and has provided statistically grounded frameworks for evaluating the behavior of LLMs (Wadi & Fredette, 2025). Future research can explore how altruistically motivated LLMs are and how altruistic reinforcement combined with financial incentives can alter their behavior.

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APPENDIX

Study 2 Manipulation Checks

In Study 2, to assess the effectiveness of the experimental manipulations, we included three items adapted from Hennig-Thurau et al. (2004) designed to measure participants' perceptions of the motives communicated in the review solicitation message. Participants responded to each item using a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree). They were asked to indicate the extent to which they agreed with the following statements about the retailer's email message.

Review motive	Manipulation check item
Helping the company	I am so satisfied with the company and its product that I want to help the company to be successful.
Helping other customers	I can help others buy the right product.
Financial incentives	I can receive a reward for writing the review.

We performed a series of Welch Two Sample t-tests to see whether the manipulation of financial incentives, helping the company and other customers was successful. Participants in the financial incentive group ($M = 4.59$, $SD = 0.81$) reported significantly greater financial incentives motive than those in the no incentive group ($M = 1.99$, $SD = 1.28$), $t(195) = -18.65$, $p < .001$, $d = -2.44$. Those in the helping the company group ($M = 2.78$, $SD = 1.35$) reported significantly greater helping the company motive than those in the helping other customers group ($M = 3.35$, $SD = 1.01$), $t(220) = 3.69$, $p < .001$, $d = 0.48$. Finally, the participants in the helping other customers group ($M = 4.23$, $SD = 0.81$) reported significantly greater helping other customers motive than those in the helping the company group ($M = 3.19$, $SD = 1.22$), $t(198) = -7.71$, $p < .001$, $d = -1.01$. These results confirm successful manipulation of our experimental groups.