REWARD-ORIENTED OR TASK-ORIENTED: HOW DOES INFORMATION PRESENTATION FORMAT INFLUENCE REFERRAL INTENTIONS IN THRESHOLD SOCIAL REFERRAL PROGRAMS?

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ABSTRACT

Online social referral programs (SRPs) have emerged as a crucial marketing strategy in social e-commerce, and information presentation format significantly influences referral effectiveness. Online threshold social referral programs (TSRPs) were recently practiced by companies like Pinduoduo, which require the established consumer (referrer) to complete multiple tasks (e.g., inviting a specified number of new consumers to register or place an order) before rewards are cashed and provide no rewards in case of incompletion. This study explored the mechanisms by which information presentation format in TSRPs affect consumers' referral intentions. Based on the heuristic-systematic model, two information presentation formats were identified: reward- and task-oriented. Four experiments were conducted to examine their impact on consumers' referral intention and the mechanism. Reward-oriented information presentation was found to enhance consumer's referral intention, while social distance between referrer and referee moderated the referrer's referral intentions. By anchoring the consumer's attention on the benefits of the referral task, the reward-oriented presentation improved their referral intention, aligning with intuitive analysis in heuristic information processing. In contrast, task-oriented presentation, which draws attention to the cost associated with the referral task, did not significantly decrease referral intention, in accordance with rational analysis in systematic information processing. As social distance increases, consumers were more inclined to consider benefits for others in their decision-making processes, with their attention increasingly focused on the benefits gained from the referral task, which strengthens the enhancement effect of reward-oriented information presentation on referral intentions. This research offers valuable insights for improving information presentation formats to enhance the effectiveness of online social referral programs.

Keywords: Threshold social referral tasks; Information presentation; Social distance

1. Introduction

Online threshold social referral programs (TSRPs) can effectively leverage consumers' social network resources to achieve traffic generation and user expansion at a low cost. They have therefore become a crucial marketing strategy in the socialized e-commerce landscape (Cao, 2020). This strategy requires consumers to complete a specific number of referral tasks–reaching a predefined "threshold"–to receive the promised rewards from the platform. Compared to the linear social referral programs (LSRPs) in which consumers receive rewards for each completed referral task (Lobel et al., 2017), TSRPs demand a higher investment of social resources, cognitive effort, and time from consumers. Such programs also increase the uncertainty associated with completing referral tasks (Wei et al., 2023). Thus, the success of this strategy is heavily dependent on consumers' ability to weigh the costs of participating in referral tasks against the attractiveness of the expected rewards.

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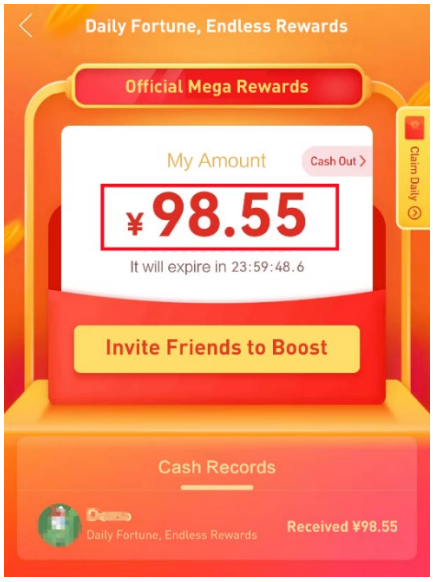
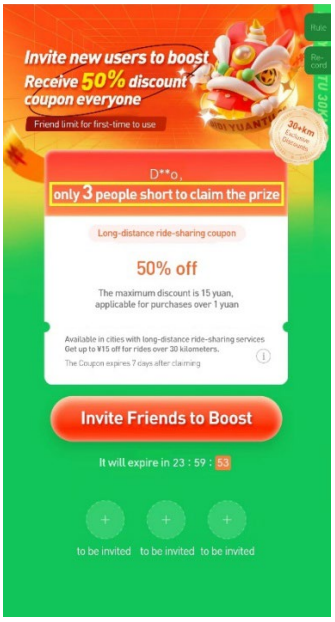
To encourage consumer participation, platform companies often adopt a "multi-task, high-reward" strategy in the referral activity interface (as shown in Figure 1, where texts were originally in Chinese). In such an information-rich environment, consumers must extract the most relevant information related to costs and benefits from the referral interface and carefully weigh the investment required to complete the threshold task against the expected returns to ensure a proper balance between effort and reward (Lee et al., 2000). The visual information presentation format plays a critical role in this process and directly influences consumers' understanding of the referral activity and their subsequent decision-making (Sreejesh et al., 2020). Consumers' decision-making behavior regarding online social referrals is influenced not only by the trade-off between costs and benefits but also by external information conditions. Existing research has suggested that, in complex informational environments, appropriate informational guidance can shape consumers' attention allocation and subsequently influence their final decisions (Jerath et al., 2021). The format in which information is presented in the referral activity interface not only affects consumers' cognitive and evaluative processes (Wei et al., 2023) but may also influence their subsequent sharing and forwarding behaviors (Sreejesh et al., 2020). Optimizing the visual design of referral task interfaces to better incentivize consumer participation has thus become a key focus for platform operations.





(a)Pinduoduo(Reward-oriented information presentation) (b) Didi(Task-oriented information presentation)

Figure 1. Example of a Threshold Social Referral Task

The role of information presentation formats in TSRPs has received increasing attention. Major e-commerce platforms such as Pinduoduo, and Didi have all adopted threshold social referral incentive programs, but there are differences in the strategies used to present information about these programs. For instance, Pinduoduo focuses on highlighting the "reward amount" to incentivize consumers, whereas DiDi emphasizes the rules and requirements for completing the "threshold" tasks. These variations in presentation strategies suggest that different information emphases may guide consumer attention in distinct ways, potentially influencing their intentions to participate in referral activities.

Existing research on social referral programs has primarily focused on the design of referral reward mechanisms, such as reward schemes, amounts, and distribution methods (Jin et al., 2024; Lobel et al., 2017), as well as the impact of consumer characteristics on their perception of referral benefits and costs (Gershon et al., 2020). Determining how to enhance the effectiveness of word-of-mouth marketing and expand the dissemination of referral information without increasing the cost of the reward program remains an area that requires further exploration. Recent studies have found that the information presentation format plays a crucial role in shaping consumer choices in complex decision-making environments (Hidalgo-Hidalgo et al., 2021; Rey et al., 2020). This effect is particularly significant in online contexts dominated by digital content, where visual information has a profound influence on consumers' decision-making (Starke et al., 2020).

Several studies have also explored the impact of visual cues in information presentation on information processing and decision-making (Sreejesh et al., 2020; Wei et al., 2023). For example, in tiered discount marketing advertisements, the order in which discount information is presented influences consumers' perception of the discount value (Davis et al., 2018). Similarly, in bundled sales, presenting the number of products before the price information is more effective in stimulating purchase intentions (Bagchi et al., 2012). These findings suggest that when consumers are faced with uncertain marketing information, how key elements such as price or quantity are presented can have a significant impact on their decisions. Consumers' attention is influenced by their prior beliefs about their needs and the cognitive effort required for information processing (Jerath et al., 2021).

Online threshold social referral settings present unique challenges, because the sources of information are often not physically present. In the absence of verbal and non-verbal cues, consumers may find it difficult to assess the credibility of information sources effectively (Filieri, 2015). This complexity further increases the decision uncertainty in referral tasks and makes it challenging for consumers to rely solely on their prior experiences to estimate the costs involved and the potential rewards they may obtain accurately. In referral task-based reward programs, referral behavior does not involve specific products but rather depends on consumers completing a certain number of virtual referral tasks (reaching the threshold) to earn rewards. Against this backdrop, whether the visual design of the information presentation format can effectively guide consumers' attention and influence their referral intentions remains an area that requires further investigation.

Based on the consumer attention guidance mechanism, this study complements existing research on this topic. We explored the impact of the visual design for presenting information in online TSRPs on consumers' referral intentions. Previous studies have found that referrers in social referral programs generally tend to send referrals to close friends, and as social distance decreases, referral success rates increase. However, in threshold social referral contexts, because the referral task must meet a specific threshold, referrers may have to extend referrals to distant acquaintances, thus increasing the uncertainty of task completion (Hong et al., 2017; Li et al., 2024a) and even leading to referral anxiety (Li et al., 2024b). Given the constraints of consumers' social resources, a key question emerges: Can the referral activity interface, by presenting key elements such as the threshold requirement and reward amount, effectively guide consumers' attention and enhance their referral intentions?

To address these theoretical and practical issues, this study focused on the context of online threshold social referrals and investigated the mechanisms by which the information presentation format influences consumers' referral intentions. Specifically, the research centered on the following three core questions:

(1) *Is a "task-oriented" or a "reward-oriented" information presentation format more effective in stimulating consumers' referral intentions?*
(2) *How does the information presentation format influence consumers' referral intentions through mediating mechanisms such as perceived benefits and costs?*
(3) *Does the impact of the information presentation format on referral intentions vary significantly under different social distance conditions?*

Given the complexity and reward uncertainty in online threshold social referrals, this study makes three key contributions through theoretical development and empirical analysis. First, it extends research on the impact of the information presentation format on consumers' referral intentions. Grounded in the heuristic-systematic model (HSM) and anchoring effect theory, this study explored how task- and reward-oriented information presentation influence consumers' referral intentions. The findings indicate that emphasizing "reward" information enhances consumers' focus on potential returns and achieving expectations, whereas highlighting "cost" information encourages consumers to carefully weigh their efforts against the anticipated benefits.

Second, this study uncovers the underlying mechanisms of the information presentation format. By identifying the effects of task- and reward-oriented presentation strategies on consumers' attention allocation, this study confirmed the mediating role of perceived benefits and costs in the relationship between the information presentation format and referral intentions. These findings offer new insights for understanding the consumer decision-making process.

Finally, this study clarifies the moderating role of social distance. Through an analysis of the interaction between the information presentation format and social distance, significant differences in consumers' responses to referral tasks were found under varying social distance conditions. The results indicate that a large social distance may increase consumers' uncertainty regarding referral tasks, while an appropriate information presentation format can help alleviate this uncertainty, thereby enhancing referral intentions.

This study not only enriches the theoretical understanding of consumer referral behavior in e-commerce platforms but also provides practical guidance for designing how information is presented in threshold social referral systems. First, platforms should emphasize reward-oriented information to boost referral intentions by highlighting benefits and simplifying task details. Clear, low-complexity presentation can reduce consumers' cognitive burden and referral

anxiety. Moreover, while consumers prefer referring close contacts, effective visual design can motivate referrals across broader social networks, helping platforms expand message diffusion and achieve low-cost traffic generation.

The paper is organized as follows. Section 2 reviews the relevant literature on information presentation, referral intentions, and relationship between information presentation and referral intentions. Section 3 develops the research hypotheses based on theoretical foundations. Section 4 describes the experimental designs and reports the results of four studies. Section 5 presents the general discussion, highlighting the theoretical and practical implications, and concludes the paper and outlines directions for future research.

2. Literature Review

Information presentation format refers to the way e-commerce platforms convey necessary content to consumers in a specific format. Presenting identical content in different formats can influence the effectiveness of information delivery (Fu et al., 2020; Holbrook & Batra, 1987). In the context of social e-commerce, how information is presented can affect consumers' perceived value (Parasuraman et al., 1988), which in turn influences their decision-making preferences (Chang et al., 2014). The information presentation discussed in this study refers to the visual presentation format of information. Online TSRPs present referral reward program information to consumers in a specific manner to encourage their participation in referral activities. Whether the content of the TSRP and its corresponding presentation format can effectively influence consumers' perceived value and stimulate their intentions to share is thus a critical factor for enhancing the effectiveness of such programs. Existing research has primarily explored three aspects of this issue: the presentation of information in social referral programs, the factors influencing intentions to participate in such programs, and the mechanism by which information presentation format affects intention to participate (Fang et al., 2022; Jung et al., 2020; Shang et al., 2017; Xu et al., 2023).

2.1. Information Presentation in Social Referral Programs

E-commerce platforms employ various methods to present information about social referral activities and display specifics about the programs, referral tasks, and other related information to consumers. These methods help consumers quickly and accurately acquire and comprehend the information, reducing their cognitive load and enhancing perceived value (Wei et al., 2023). They can also be used by the platforms to influence consumers' decision preferences, as platforms manipulate the type and quantity of information provided, thereby guiding consumers' attention to different categories of information (Jerath et al., 2021).

In the field of online word-of-mouth marketing, research on information presentation has primarily focus on the framing effect, which explores how different ways of interpreting information can influence consumer decision-making (Homar et al., 2021; Li et al., 2022; Rahman et al., 2018; Song et al., 2020). With advances in digital media technologies, the visual effects involved in presenting information have increasingly gained attention (Diwanji et al., 2021; Sreejesh et al., 2020). In the context of online social referrals in particular, research has focused on aspects such as the order in which information is presented, anchoring effects (Roy et al., 2021), and visual interface layout optimization (Blanco et al., 2010).

Studies on the order of information presentation are rooted in Tversky's (1974) theory of the anchoring effect, which posits that individuals tend to focus their attention on the initially presented information or information presented in a more explicit, distinctive, or salient manner, while later or less relevant information is often overlooked (Roy et al., 2021). Based on this theory, researchers have primarily explored its underlying mechanisms from the perspective of cognitive biases (Fischer & Greitemeyer, 2010; Jerath et al., 2021). E-commerce platforms leverage the anchoring effect in presenting information to guide consumers' preferences and decision-making behavior (Davis et al., 2018). Further research is needed, however, to explore the mechanisms by which different presentation formats influence consumer attention.

Existing studies have indicated that decision-making in digital environments is heavily reliant on visual information (Starke et al., 2020). The diversity of information presentation on e-commerce platforms stimulates consumers' demand for visual information, enhancing their visual, cognitive, and emotional responses (Martinez et al., 2021). E-commerce platforms can significantly boost consumers' purchase intentions, for example, by using clear and concise formats for presenting information to highlight product advantages (Meyvis & Janiszewski, 2002). In online settings, presenting textual information before visual content is found to be more effective in increasing a consumer's preference for products or services. Displaying images separately rather than in alternating layouts contributes to higher decision quality (Blanco et al., 2010). Visually highlighted options (e.g., through color emphasis) can also enhance consumers' perception of the uniqueness of their choices (Kim et al., 2022).

Despite these findings, existing research has yet to thoroughly explore the distinction between key information such as "rewards" and "tasks" in visual presentation and the impact of interface layout optimization in TSRPs. Our study therefore investigates the mechanisms of different information presentation formats in TSRPs and their effects on consumer cognitive processing and decision-making behavior.

2.2. Factors Influencing Threshold Social Referral Intentions

Social referral intention refers to consumers' expectations or attitudes toward engaging in referral activities, thus representing their psychological inclination before taking referral actions. Existing research on this topic has primarily focused on two categories of influencing factors: intrinsic and extrinsic (Shang et al., 2017). Intrinsic motivation encompasses subjective factors that influence consumers' referral intentions, mainly examining individual characteristics. Several key factors have been widely explored in this area, including gender (Jin et al., 2024), perceived risk level (Song et al., 2020), social competence (Melnyk et al., 2022), domain-specific knowledge (Sun et al., 2021a), and social attachment styles (Kuang et al., 2021). Extrinsic motivation refers to objective factors that influence consumers' referral behaviors, focusing on aspects such as reward mechanisms (Gershon et al., 2020; O'Brien et al., 2020), perceived task difficulty (Davis & Bagchi, 2018), and social network closeness (Ma et al., 2020).

First, reward mechanisms are considered a key factor influencing threshold social referral intentions. It is generally believed that when rewards are sufficiently attractive, consumers are more likely to engage in referral activities to meet the required threshold (O'Brien et al., 2020). Existing research has primarily explored aspects such as reward levels, allocation schemes (Gershon et al., 2020), reward formats (Kuang et al., 2021), and reward amounts and payment strategies (Orsingher & Wirtz, 2018; Wang et al., 2018a). Notably, Lobel et al. (2017) conducted a comparative analysis of linear reward mechanisms and threshold reward payment mechanisms, considering the "one-to-many" nature of online social recommendations. Their findings suggest that while linear rewards may lead to excessive platform expenditures, threshold rewards may fail to compensate consumers adequately for referral costs, potentially reducing their willingness to participate.

Second, perceived task difficulty has a significant impact on consumers' intentions to engage in TSRPs. If consumers perceive the referral tasks to be too challenging - such as requiring referrals to a large number of specific individuals or completing complex promotional activities - their intentions to participate will decrease (Ma et al., 2024). Research has also indicated that when making decision for themselves, online consumers tend to follow habitual information processing patterns and are less influenced by task information. However, when making decisions on behalf of others, individuals must consider others' behavioral patterns and risk attitudes, thus making perceived task difficulty a more influential factor (Jepma & López-Solà, 2014). When task information is presented in a way that allows consumers to perceive their progress toward achieving goals clearly and when their personal skills align with the task difficulty, they are more likely to develop a strong motivation to share (Ha & Im, 2020). Conversely, complex and uncertain tasks can increase cognitive load, which can lead to frustration or even referral anxiety, thereby reducing consumers' intentions regarding and efficiency in completing referral tasks (Li et al., 2024b; Wang et al., 2018b).

Finally, the closeness of social networks also influences consumers' threshold social referral intentions. Researchers examining social relationships have suggested that the introduction of the social distance variable can lead to changes in decision-makers' risk preferences (Montinari & Rancan, 2018). Studies have suggested that under a gain-framed scenario, consumers exhibit higher risk-seeking tendencies when making decisions for friends or strangers, whereas under a loss-framed scenario, their behavior reverses (Sun et al., 2021b). It is widely acknowledged that the perceived social risk is lower in close social networks, and interpersonal relationships are also more stable, which fosters a higher willingness to participate in threshold social referral activities (Ma et al., 2020). Consumers are also more inclined to engage in referrals to achieve the task objectives for mutual benefit (Jin et al., 2024; Li et al., 2024a; Song et al., 2020). However, studies have also shown that consumers experience social anxiety when making referrals within large social networks (Li et al., 2024b).

Despite the extensive research conducted, further exploration is needed to better understand the interaction between intrinsic and extrinsic motivational factors and how they jointly influence threshold social referral behavior. The role of how information is presented enhances perceived value and reduces cognitive effort remains a crucial area for future research.

2.3. Relationship Between Information Presentation and Referral Intentions

Information presentation is a crucial factor influencing consumers' referral intentions (Starke et al., 2020; Xu et al., 2023). HSM is a key theoretical model for explaining the underlying mechanism of this influence; it posits that consumers process information through two distinct yet interacting pathways: heuristic and systematic processing (Chaiken, 1980; Evans et al., 2005; Fu et al., 2020). These pathways have three key characteristics. First, information presentation facilitates consumers' adoption of the heuristic processing mode, thereby influencing their decision preferences. This pathway emphasizes consumer reliance on intuitive perceptions of information attributes during the processing stage. It is highly susceptible to factors such as prior experience and emotions, which often lead to quick judgments based on readily available information and simple decision rules (Jerath & Ren, 2021). E-commerce platforms can leverage heuristic cues that align or conflict with consumers' prior beliefs to influence their decision preferences (Fu et al., 2020; Kahneman, 2003; Wu et al., 2019). For example, platforms can influence consumer decision-making by prominently displaying heuristic cues such as "bestselling products," "celebrity endorsements," and "store reputation" (Forman et al., 2008; Sundar et al., 2009).

Second, information presentation guides consumers to reduce cognitive resource investment in systematic processing, thus enhancing decision satisfaction. Systematic processing occurs when consumers are unable to rely on heuristic cues, which prompts them to engage in a thorough evaluation of externally provided information to make optimal, rational decisions based on facts and logic (Fernández-Loría et al., 2023; Wu et al., 2019). To minimize cognitive effort, consumers tend to select information that aligns with their existing knowledge, motivations, and values, while disregarding conflicting information, thus leading to confirmatory information processing (Shah & Oppenheimer, 2008). Effective information presentation design by e-commerce platforms can reduce cognitive load as well as mitigate biases in confirmatory processing, ultimately improving decision satisfaction (Fu et al., 2020; Kahneman, 2003; Wu et al., 2019). For example, providing detailed product descriptions, feature comparisons, and user reviews can encourage consumers to conduct in-depth analysis and comprehensive evaluation (Wells et al., 2011).

Finally, the presentation of decision-making context information influences consumers' choice of information processing mode, thereby affecting their referral intentions. The processing mode that consumers adopt is influenced by various contextual factors, including problem involvement (Watson et al., 2022), information processing ability (Evans et al., 2005), motivation strength (Fu et al., 2020), self-relevance cognition (Meyers-Levy & Maheswaran, 2004), decision time pressure, and task importance (Martín & Valiña, 2023). When task importance is a contextual variable, consumers are more likely to adopt the systematic processing mode, which demands greater cognitive resources but leads to higher decision accuracy if the task is highly important and closely related to themselves. Conversely, when the task is of lower importance and less personally relevant, consumers tend to prefer the heuristic processing mode, which conserves cognitive resources (Kobayashi, 2022).

Existing research findings have primarily been conducted in uncertain and complex information processing contexts. In the context of online TSRPs, factors such as the establishment of threshold tasks and the expansion of the referral target scope increase the uncertainty and complexity of completing these tasks. We therefore used HSM (Chaiken, 1980) to explore how the visual design of the information presentation format can guide consumers in selecting an appropriate information processing mode, thereby reducing the impact of social distance on the scope of referrals (see Figure 2). Further research is conducted to examine the impact of different information presentation formats on consumers' social referral intentions.

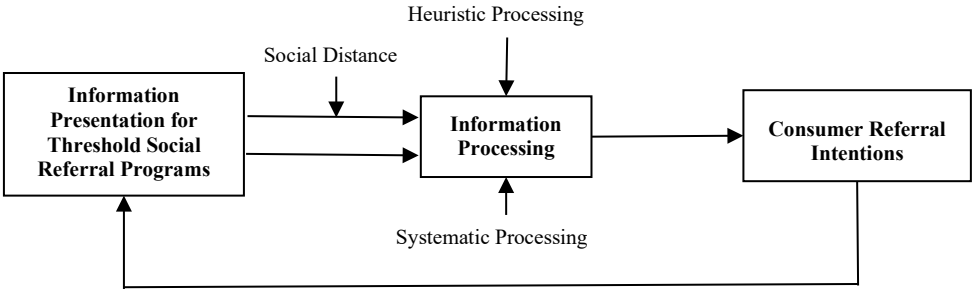


Figure 2: Heuristic-Systematic Model of the Threshold Social Referral Program

3. Hypothesis Development

3.1. Information Presentation and Referral Intention

According to social exchange theory (SET), consumers evaluate the costs and benefits associated with social resources during the decision-making process (Bordia et al., 2007). Only when consumers perceive that the benefits outweigh the costs are they likely to pursue in referral activities. However, the psychological gains and losses that influence decision-making outcomes are not determined by actual values and losses, but rather by the prospect value derived from "reference points" that individuals establish based on available information. In other words, these reference points are cognitive benchmarks that people form to guide their perception of gains and losses (Kahneman et al., 1979). For online social referral programs, platforms set referral tasks to guide consumers in using their social and cognitive resources to complete referrals in exchange for rewards. A consumer's referral decision fundamentally represents a trade-off between the anticipated rewards and the associated costs of completing the referral task. Information related to the task's rewards and costs is a critical factor in determining whether consumers participate in referrals. The clearer and more prominently the task and reward information is presented, the stronger its explanatory power in influencing consumer decision-making (Starke et al., 2020).

The influence of information presentation on consumers' referral decisions is further amplified in the context of threshold social referrals. Compared to LSRPs, consumers in TSRPs face higher information acquisition costs. Moreover, as the number of tasks and their associated rewards increase, task complexity also escalates, thereby intensifying the uncertainty consumers face in completing them.

The complexity of platform online interface design has also increased significantly in recent years, thereby increasing the difficulty for consumers to acquire information. Prospect theory (Tversky and Kahneman, 1981) posits that individuals' decisions and preferences can vary based on different presentations of the same information. In decision-making scenarios involving multiple information processing tasks, individuals tend to anchor their attention on information that appears first or is presented more explicitly, distinctively, or prominently. This anchoring effect not only influences how information is processed and absorbed but also directly determines the information processing modes adopted by individuals, thereby significantly affecting decision-makers' preferences and choices (Bagchi et al., 2012).

In the complex scenario of TSRPs, the information presentation format provided by the platform can guide consumers' attention, facilitate their identification of benefit or cost signals, and influence their cognitive processing and behavioral intentions. Online TSRPs typically employ two types of information presentation formats to emphasize or highlight costs and benefits: reward- and task-oriented formats.

The reward-oriented format emphasizes the referral reward information displayed within the platform system while relatively de-emphasizing the information associated with task cost. In this format, consumers' attention is drawn primarily to information about rewards, thereby reducing their focus on the costs of completing the task. Consumers rely on simple cues, such as reward amounts, to form rapid judgments and employ a heuristic information processing mode. This results in lower cognitive costs (Chaiken & Ledgerwood, 2011), because by focusing on the presented information cues, consumers can quickly perceive the promised benefits, as well as potential hidden social benefits, such as gaining others' attention, which in turn diminishes their attention to the costs. The reward-oriented format thus enhances consumers' intentions to participate in social referral activities.

The task-oriented format for presenting information emphasizes the number of threshold tasks and requirements that referrers must complete, while de-emphasizing the rewards information available to those who complete the tasks. In contrast to the reward-oriented format, this approach presents the task cost information more clearly and specifically, anchoring consumers' attention on task-related details. The prominence of cost information stimulates consumers to conduct a more detailed analysis of task requirements and potential risks, which leads them to adopt an analytical decision-making process (Kahlor et al., 2003). Consumers need to evaluate the social, time, and learning costs associated with the referral process carefully and make decisions after weighing these costs against potential benefits. If the expected loss from completing the task exceeds expectations, it reduces their intentions to initiate the referral activity (Gershon et al., 2020). Conversely, if the perceived rewards align with the expected costs, their referral intentions remain unaffected.

In short, the reward-oriented information presentation format emphasizes the direct benefits of successful referrals, thereby reducing consumers' attention to task complexity and costs, and consequently increasing their intentions to refer (Starke et al., 2020). This approach minimizes the time and cognitive resources required for consumers to process information. In contrast, the task-oriented information presentation format provides detailed descriptions of task completion requirements, guiding consumers to conduct in-depth analyses of associated costs. While this reduces uncertainty during task completion, it may also diminish consumers' intentions to participate by highlighting cost factors (Bagchi et al., 2012). Based on this theoretical analysis, the following research hypothesis is proposed:

H1: Compared with the task-oriented format, the reward-oriented format leads to higher referral intention.

3.2. The Mediating Role of Perceived Benefits and Perceived Costs

Forming the intention to engage in online referrals is a complex decision-making process that is influenced by both objective (e.g., information presentation format and environment) and subjective factors, including the personality traits of promoters, sharing motives, and emotions (Shang et al., 2017). According to SET, this decision-making process can be viewed as a form of social exchange behavior in which mutual benefits are pursued through the exchange of valuable resources. In this context, the resources exchanged are not limited to tangible material rewards but also encompass intangible psychological rewards, such as trust and support (Chia et al., 2021; Meira et al., 2021). In this process, consumers weigh the costs involved against the potential benefits. When consumers perceive that the anticipated benefits outweigh the associated costs, they are more likely to develop an intention to share (Cloarec et al., 2022).

In the context of online TSRPs, the social referral tasks released by the platform guide consumers to exchange their social, cognitive, and action resources for referral rewards. The perceived benefits encompass not only the economic benefits associated with the reward amount but also intangible benefits (Li et al., 2024b). The perceived costs include the action costs incurred from investing cognitive and ability resources, as well as time, to complete the referral task (Mirzaei et al., 2021), along with the social costs resulting from utilitarian sharing (Song et al., 2020) and the associated risks such as the potential loss of private information (Youn et al., 2009).

Increases in the number of tasks within the threshold social referral program intensify the perceived uncertainty of task completion. When processing information, consumers aim to maximize benefits while minimizing effort costs, thereby balancing costs and benefits (Homburg et al., 2014). In this decision-making process, the psychological perceived benefit exerts a greater influence on the final choice than the actual realized benefit (Tversky et al., 1981). Consumers' judgments are influenced by information presentation because it affects how they perceive and evaluate that information. In the context of a threshold social referral program, the increasing number of tasks and the cumulative rewards make it more challenging for consumers to calculate the benefits of individual tasks. The uncertainty of cost-related information further complicates the trade-off between perceived benefits and perceived costs, thus making consumers' decision-making processes more susceptible to the influence of how information is presented.

With a task-oriented information presentation format, the emphasis on the number of tasks amplifies the perceived costs associated with completing them, thus highlighting the effort required from consumers. This results in a negative information effect, which heightens consumers' sensitivity to perceived losses and stimulates an analytical decision-making approach. Consequently, consumers are more likely to engage in careful evaluation, which ultimately reduces their referral intentions. With a reward-oriented information presentation format, the focus on the potential rewards for completing referral tasks enhances consumers' perception of possible gains, thus creating a positive information effect. This encourages consumers to focus on attainable benefits and adopt a heuristic decision-making approach, which makes them more inclined to take risks and increasing their referral intentions (Bunčić et al., 2021). The following research hypotheses are therefore proposed:

H2: The format in which information is presented influences referral intentions by affecting consumers' perception of costs and benefits.

H2a: The impact of information presentation format on referral intention is mediated by perceived benefits.

H2b: The impact of information presentation format on referral intention is mediated by perceived costs.

3.3. The Moderating Effect of Social Distance

Word-of-mouth communication is the essence of social referral and involves not just the actions of consumers but also the interactions between two parties: the referrer and the referee. The social relationship between these two parties provides the foundation for disseminating business information and marketing promotions through social referrals. The closeness or distance of their social relationship can be quantified by the emotional social distance. A small social distance indicates close social ties, while a large social distance signifies distant social ties (Bzdok et al., 2020). The social distance between the referrer and the referee influences referral behavior patterns, which is a critical factor affecting the effectiveness of word-of-mouth communication (Wang et al., 2018a). The establishment of threshold targets in TSRPs further increases the difficulty of obtaining referral rewards for the referrer. Referral tasks not only involve strong-tie referrals within a small social distance but may also extend to weak-tie referrals across a large social distance. The referrer may have to initiate referrals to friends at a greater social distance, thereby increasing the uncertainty of task completion (Li et al., 2024a; Hong et al., 2017).

Social distance is a manifestation of psychological distance and is closely linked to the degree of empathy one person has for another (Moran et al., 2022). Even within the same marketing context, consumers exhibit markedly different behavioral tendencies when interacting with individuals at varying social distances. When the referrer and the referee are family members or close friends who know each other well, care for each other, and interact frequently, the intimate relationship built on mutual trust and understanding allows the referrer to extend referral invitations without excessive concern about any potential negative impacts on the relationship. This, in turn, reduces the perceived moral risk associated with the referral process (De Bruyn et al., 2008; Kuang et al., 2021). The established relationship of trust makes the referrer more likely to send referral requests to referees with small social distance (Hong et al., 2017). In contrast, when the referrer and the referee have a relationship in which there is a large social distance, such as online acquaintances or neighbors, the referrer is more likely to act cautiously due to the lack of in-depth understanding and interaction. The referrer may fear that referral behavior could cause inconvenience or discomfort to the other party (Naeem, 2021). In this context, the referrer is likely to consider social norms more carefully to avoid deviating from societal expectations or standards due to the referral activity.

Studies have shown that in scenarios involving small social distance, the referrer is more willing to make referral requests, given the trust and understanding between the parties (Jin et al., 2024; Hong et al., 2017). Specifically, in a reward-oriented information presentation format, the referrer is more motivated to refer because these formats enhance the perceived rewards and reduce concerns about potential negative impacts of the referral behavior. Additionally, even in task-oriented information presentation formats, the referrer's intentions to refer increases due to the closeness of the relationship and lower perceived risk.

Conversely, in scenarios involving a large social distance, the referrer is more likely to rely on rational analytical decision-making (Li et al., 2024a; Naeem, 2021). In task-oriented information presentation formats, the uncertainty surrounding the completion of the referral task makes it difficult for the referrer to perceive sufficient attraction, which often leads them to refuse the referral (Wang et al., 2018b). In reward-oriented information presentation formats, however, the prominence of the reward information more easily captures the referrer's attention, thus reducing cognitive resource consumption and mitigating perceived risk. This stimulates a heuristic decision-making process that results in higher referral intentions in scenarios of large social distance. This suggests the following hypothesis:

H3: Social distance moderates the impact of different information presentation formats of TSRP on consumers' referral intentions. Specifically, in the context of large social distance, a reward-oriented information presentation format significantly increases consumers' referral intentions compared to a task-oriented format.

The research model is shown in Figure 3.

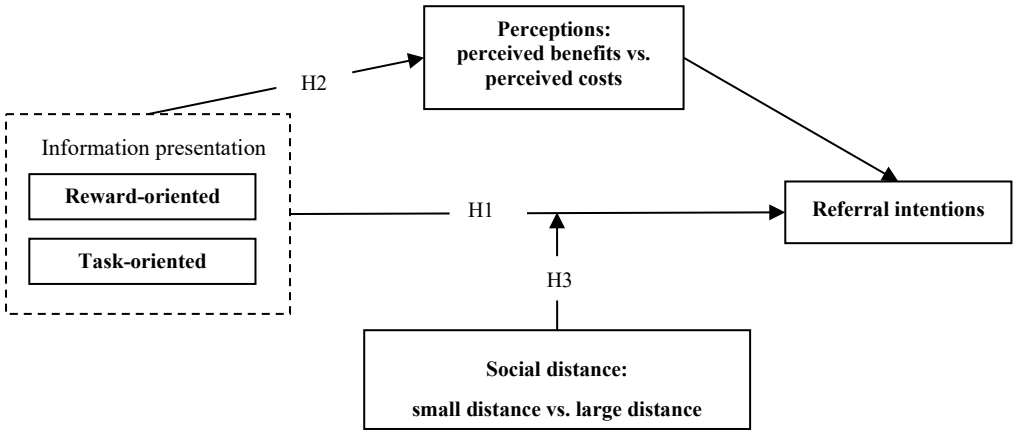


Figure 3: Research Model

4. Experiment Design and Results

We conducted a series of simulated scenario-based online experiments to test our hypotheses. The design features of the four studies are as follows: Study 1 is a pilot experiment on a linear social referral activity. This study aims to provide baseline insights into the effect of information presentation on linear social referral programs (LSRPs). Study 2 involves a threshold social referral activity, which provides baseline insights into the differences in the effects of information presentation between LSRPs and TSRPs. Study 3 serves as a robustness check for Study 2 and examines dual mediating mechanisms (consumers' perceived benefits and costs). In Study 4, we assess the moderating effect of social distance on the relationship between information presentation and social referral intentions.

4.1. Study 1

In study 1, we used the LSRPs scenario of an "invite new consumers to download and sign up" activity. Study 1 serves as a baseline test to examine whether information presentation influences referral intention in LSRPs. This study provides an initial reference point by testing the effect of information presentation formats (task-oriented vs. reward-oriented) in a context with low task complexity and certainty, where consumers can receive rewards after each successful referral. The results help determine whether information presentation has an effect in simple referral contexts, thus laying the groundwork for the more complex TSRP scenarios explored in subsequent studies.

4.1.1. Design and Procedure

The experimental activity scenarios were modeled after friend-assist campaigns on e-commerce platforms. In the task-oriented information presentation format, the number of people required for assistance was visually emphasized, while the monetary reward for task completion was not enhanced. To ensure participants fully understood the referral task process, detailed instructions for task completion were displayed at the bottom of the activity page. Conversely, in the reward-oriented information presentation format, the monetary reward was prominently highlighted, whereas the number of required invites received no emphasis. In the control group, neither cost nor reward information was visually emphasized, and both were presented in the same manner. Study 1 employed a between-subjects experimental design with three conditions (information presentation: task-oriented, reward-oriented, and control group) in the context of platform discount social referral activity, presented to participants, as shown in Figure 4, where texts were originally in Chinese. We used these tasks in the study for the following reasons: (1) It is the most prevalent practice among social referral scenarios on e-commerce platforms, and recommending friends for discounts serves as a key promotional marketing channel for e-commerce. (2) It effectively integrated both task-oriented information (the

number of friends consumers are required to refer) and reward-oriented information (how much discount the referrer ultimately receives), making it suitable for our research objectives. (3) The pretest survey (*N*=56) revealed that 85.7% of participants had prior experience participating in reward-based social referral activities. In the pretest survey, we also asked the participants (*N*=56) to evaluate the appropriateness of the rewards, task quantity, familiarity, and attractiveness for our experimental scenarios. Based on the participants' responses, we selected a reward of RMB 3.8 and a task of inviting 1 friend as the scenario settings for the social referral activity in our experiment.

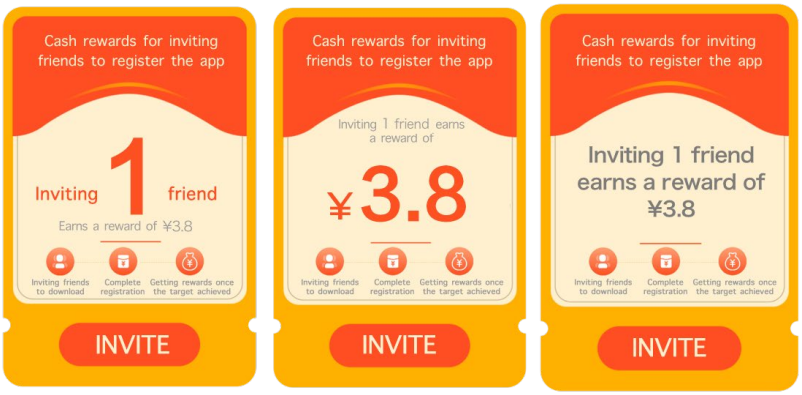


Figure 4: Three treatment conditions (Study 1)

93 participants from wjx.com were recruited for financial compensation. Participants who failed the attention check or lacked referral experience were excluded, as they might not have adequately understood the instructions. Finally, 91 valid participants (37 males, 54 females) remained, all between 18 and 60 years of age.

After reading the instructions, participants were asked to imagine browsing a social referral program on an e-commerce shopping platform app on their mobile phones. They were randomly assigned to the three treatment conditions of information presentation (i.e., task-oriented, reward-oriented, and control group) as shown in Figure 4. Then, participants were asked to complete scales measuring referral intentions and manipulation check item: "Which type of information did you focus on most when browsing the activity page?" (0 = "Task quantity," 7 = "Reward amount"), followed by providing their demographic information. Finally, participants were debriefed, thanked, and dismissed. After the experiment, all valid participants who completed the task received an RMB 3 (approximately US $0.5) as compensation. This payment was provided solely as a gesture of appreciation for their participation and was unrelated to the incentives offered for completing referral tasks during the experiment.

4.1.2. Measures and Results

Manipulation checks: T-test results showed a significant difference between three groups, regarding their focus on rewards and tasks ($p < 0.001$). Thus, our manipulation on information presentation was effective.

Hypothesis testing: Referral intentions was measured by a 5-item scale developed by Carroll (2006). The Cronbach's α coefficients for the referral intention was 0.891, indicating a high level of reliability. Existing literatures have suggested that consumers' gender, age, and income may influence their referral intention (Jin et al., 2024). Therefore, we also include these variables as covariates in our analysis.

We conducted an ANOVA with referral intentions as the dependent variable and information presentation as the independent variable (see Table 1). The results showed that in LSRP scenario, the effect of information presentation on referral intentions was not significant (F (2) = 1.384, p = 0.256). Post-hoc multiple comparison results between the reward-oriented group, task-oriented group, and the control group were also not significant ($p > 0.1$).

Table 1: ANOVA Test Results (Study 1)

Variables		**Task-oriented**	**Reward-oriented**	**Control group**
Referral intentions	Sample size	*n*=30	*n*=31	*n*=30
	Mean	4.63	4.68	5.27
	SD	1.63	1.82	1.48
F-value	1.384			
P	0.256			
Note: ***p<0.001,**p<0.01, *p<0.05				

Table 2: Post-Hoc Multiple Comparison Test Results (Study 1)

Groups	Groups	Mean difference	*P*
Task	Reward	-0.044	0.917
Task	Control	-0.633	0.141
Reward	Control	-0.589	0.167

Note: ***p<0.001,**p<0.01, *p<0.05

4.1.3. Discussions

Study 1 aimed to establish baseline insights into the effect of information presentation within LSRPs. The findings suggest that in LSRPs, where users can easily comprehend the referral process and the associated cost-benefit calculations are straightforward, the impact of information presentation on referral intention is minimal. This result indicates that when cognitive effort required for decision-making is low, users may rely on their intrinsic understanding of the referral system rather than external information cues. Additionally, it suggests that the simplicity of the referral structure may limit the role of information presentation in influencing user behavioral intention, as users might not perceive a strong need for additional information to make their decisions.

However, TSRPs introduce a more complex decision-making environment, characterized by threshold requirements and a higher degree of uncertainty regarding potential rewards. Recognizing this increased complexity, Study 2 was designed to further investigate the role of information presentation in such settings and to test Hypothesis 1. Specifically, Study 2 aims to explore whether different information presentation formats can help users navigate the complexities of TSRPs, reduce perceived uncertainty, and ultimately enhance their referral engagement.

4.2. Study 2

Study 1 provided initial evidence that information presentation did not significantly impact referrers' intentions in LSRPs. Building on the baseline findings of Study 1, Study 2 shifts to a TSRP scenario to examine whether the complexity and uncertainty inherent in TSRPs alter the influence of information presentation on consumers' referral intentions. By applying the same information presentation formats manipulation to a TSRP context, this study investigates whether information presentations are more effective than LSRP ones when consumers must complete multiple tasks to receive a reward. The comparison between Study 1 and Study 2 helps clarify how the threshold-based referral context shapes the effect of information presentation formats on referral intentions.

4.2.1. Design and Procedure

The design and procedures in Study 2 were consistent with those in Study 1. Study 2 also chose the platform's referral activity for acquiring new users as the experimental setting. Similar to Study 1, in the scenario of task-oriented information presentation format, the number of people required for assistance was visually emphasized. In the scenario of reward-oriented information presentation format, the monetary reward was prominently highlighted. In the control group, neither cost nor reward information was visually emphasized, and both were presented in the same manner. We conducted a pretest with 73 participants to assess the appropriateness of this setting and to determine realistic task quantities and reward configurations. Based on participants' responses, we assigned a reward of RMB 18.8 and a task requirement of inviting 5 new users as the scenario setup for the referral activity in Study 2, as is shown in Figure 5, where texts were originally in Chinese.

After reading the instructions, participants were asked to imagine browsing a social referral program on an e-commerce shopping platform app on their mobile phones. They were randomly assigned to the three treatment conditions of information presentation as shown in Figure 5. The procedures were similar to those of Study 1.

A total of 240 participants were recruited from wjx.com for financial compensation. Participants who failed the attention check or lacked referral experience were excluded, as they might not have adequately understood the instructions. After removing 4 invalid samples, 236 valid samples remained. The demographic information of the participants is presented in Table 3.

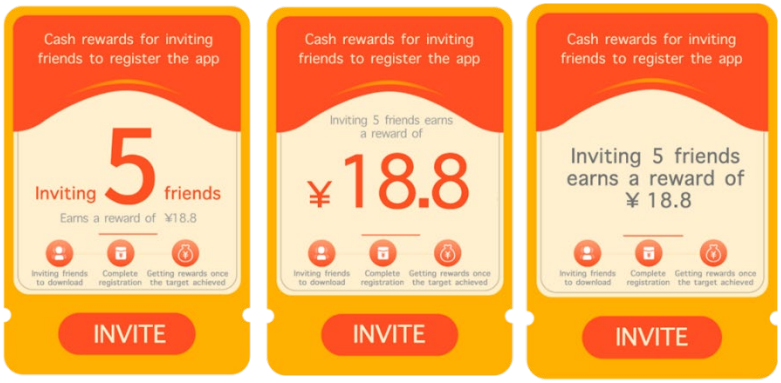


Figure 5: Three treatment conditions (Study 2)

Table 3: Descriptive Statistics of Participants (Study 2)

Basic characteristics		**Sample size**	**Percentage**
Gender	Male	104	44.1%
	Female	132	55.9%
Age	18-25	38	16.1%
	26-30	74	31.4%
	31-40	107	45.3%
	41 and above	17	7.2%
Income (¥)	2000 and less	18	7.6%
	2000-6000	66	28%
	6000-10000	101	42.8%
	10000 and above	51	21.6%

4.2.2. Measures and Results

The measurements for referral intention were the same as those used in Study 1, with all scales demonstrating good reliability and validity.

Manipulation checks: T-test results showed a significant difference between three groups, regarding their focus on rewards and tasks ($p < 0.001$). Thus, our manipulation on information presentation was effective.

Hypothesis testing: A homogeneity of variance test yielded $p = 0.264 > 0.05$, indicating no violation of variance homogeneity and supporting the null hypothesis. After controlling for gender, age, and income, an ANOVA analysis of participants' referral intention revealed a significant main effect of information presentation (F (2, 8.194), $p < 0.000$). Post-hoc comparisons showed that the referral intention of the reward-oriented presentation group ($N = 78$, $M = 4.56$, SD=1.718) was significantly higher than that of the task-oriented presentation group ($N = 77$, $M = 4.06$, $SD = 1.688$, $p < 0.05$), and much higher than the control group (N =81, $M = 3.49$, $SD = 1.704$, $p < 0.000$). There was no significant difference between the control group and the task-oriented group (See Figure 6).

Table 4: ANOVA Test Results (Study 2)

Variables		**Task-oriented**	**Reward-oriented**	**Control group**
Referral intentions	Sample size	n=77	n=78	n=91
	Mean	4.06	4.56	3.49
	SD	1.69	1.72	1.70
F-value	8.194			
P	0.000			
Note: ***p<0.001,**p<0.01, *p<0.05				

4.2.3. Discussions

Compared to LSRPs, TSRPs impose greater cognitive and social demands on referrers, requiring them to carefully weigh the trade-offs between effort and reward. Our findings indicate that information presentation plays a crucial

role in guiding consumers' attention and shaping their referral decisions. Specifically, in the TSRP scenario, participants exposed to reward-oriented presentations demonstrated higher referral intentions compared to those in task-oriented and control conditions. Interestingly, unlike in LSRPs where information presentation did not significantly affect referral intentions, the TSRP context led to a reversal of the referral intention patterns among the three treatment conditions.

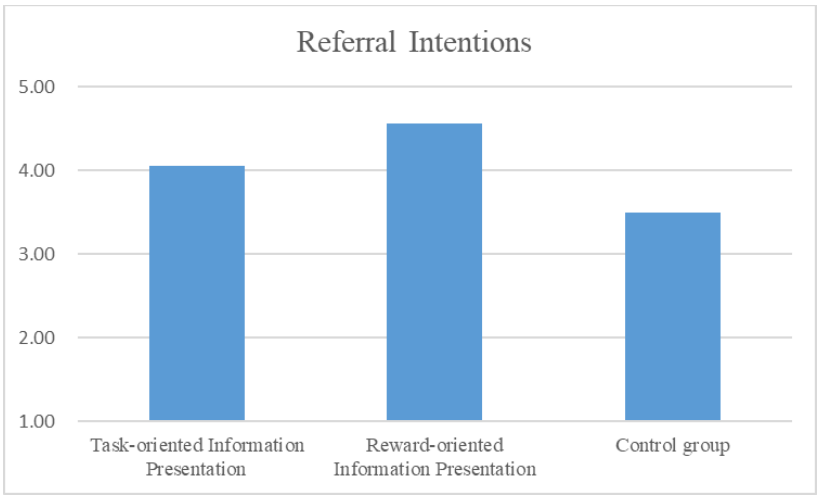


Figure 6: Referral intentions in different presentation format (Study 2)

This reversal can be attributed to the increased complexity and uncertainty inherent in TSRPs, which amplifies the importance of perceived benefits in decision-making. In LSRPs, the straightforward cost-benefit structure allows referrers to make decisions with minimal cognitive effort, thereby reducing the influence of how information is presented. However, in TSRPs, where referrers must meet a threshold requirement before receiving rewards, the salience of reward-related information becomes more critical in motivating participation. Participants in the reward-oriented group may have perceived the promised incentives as more attainable and attractive, leading to increased engagement, whereas the task-oriented presentation might have emphasized the complexity and effort required, potentially deterring referrers.

Furthermore, the lack of significant differences between the task-oriented and control groups suggests that emphasizing the task aspects alone may not be sufficient to drive referral engagement. This finding highlights the importance of balancing task-related information with motivational cues to optimize referral participation.

To further explore the psychological mechanisms underlying these effects, Study 3 was conducted to investigate the mediating roles of perceived costs and benefits in shaping referrers' intentions. By examining these factors, we aim to provide a deeper understanding of how information presentation can be strategically designed to enhance referral outcomes in TSRPs.

4.3. Study 3

To validate the findings from Study 2 and explore the underlying mechanism, Study 3 replicates the TSRP scenario while refining the experimental design to minimize potential confounders. Specifically, this study introduces perceived benefits and perceived costs as mediating variables, aiming to test whether the observed differences in referral intentions are indeed driven by changes in consumers' cost-benefit perceptions. By using a more controlled setting and incorporating validated measurement scales, Study 3 strengthens the internal validity of the findings and explains how information presentation influences referral behavior through psychological processing pathways.

4.3.1. Design and Procedure

Study 3 employed a between-subject experimental design with three treatment conditions (information presentation: task-oriented, reward-oriented, and control group). Based on the participants' responses, we selected a reward of RMB 18.8 and a task of inviting 5 friends as the scenario settings for the social referral activity in our experiment.

At the beginning of the experiment, participants were asked to imagine browsing a social referral discount activity on an e-commerce shopping platform app on their mobile phones. They were randomly assigned to the three treatment conditions of information presentation (i.e., task-oriented, reward-oriented, and control group). Then, participants were asked to complete scales measuring perceived benefits, perceived costs, and referral intentions, followed by providing their demographic information. Finally, participants were debriefed, thanked, and dismissed. After the experiment, all valid participants who completed the task received an RMB 3 (approximately US $0.5) as

compensation. This payment was provided solely as a gesture of appreciation for their participation and was unrelated to the incentives offered for completing referral tasks during the experiment. 124 participants from wjx.com were recruited for financial compensation. After excluding 16 invalid responses due to timeouts, failure to pass attention checks, or lack of referral experience, 108 valid samples were retained. The basic characteristics of the sample are shown in Table 5. The sample's age distribution is relatively balanced, with most participants being employed consumers, making it a representative sample.

Table 5: Descriptive Statistics of Participants (Study 3)

Basic characteristics		**Sample size**	**Percentage**
Gender	Male	46	43%
	Female	62	57%
Age	18-25	21	19.4%
	26-30	32	29.7%
	31-40	52	48.1%
	41 and above	3	2.8%
Income (¥)	2000 and less	8	7.4%
	2000-6000	27	25%
	6000-10000	47	43.5%
	10000 and above	26	24.1%

4.3.2. Measures and Results

Perceived benefits and costs were measured by a 12-item scale adapted from Kankanhalli (2005). All measurement items in this experiment followed the 7-point Likert scale, where “1” indicates “strongly disagree” and “7” indicates “strongly agree” and referral intentions was measured by a 5-item scale developed by Carroll (2006). Table 6 gives the detailed descriptions and measurements of these variables.

Table 6: Variables and measurement (Study 3)

Variables	Measurement items	Reference
Perception of the benefits	I believe participating in this activity can benefit me. I believe participating in this activity can bring me monetary rewards. I believe participating in this activity can increase my interactions with others. I believe participating in this activity can enhance others' impressions of me. I believe participating in this activity can improve others' efficiency in obtaining information.	(Kankanhalli 2005)
Perception of the costs	I don't have time to participate in this activity. I believe participating in this activity is strenuous. I believe participating in this activity requires too much effort. I worry that participating in this activity will be questioned by my friends. I worry that participating in this activity will be misunderstood by my friends. I worry that participating in this activity will be disliked by my friends. I need to bear the consequences for the accuracy and authenticity of the activity information.	(Kankanhalli 2005)
Referral intention	Your intention to participate in this activity. I would recommend this activity to others. I would encourage others to join this activity. I would enthusiastically share this activity with others. I would make an effort to share this activity.	(Carroll 2006)

Reliability and manipulation checks: The internal consistency coefficient (i.e., Cronbach's α) was used to ensure the reliability of our measures. The Cronbach's α coefficients for the perceived benefits, perceived costs, and referral intention were 0.928, 0.904, and 0.891, respectively. All of them exceeding 0.8, indicating a high level of reliability. The KMO value for factor analysis was 0.824 (greater than 0.6), suggesting that the research data is suitable for information extraction.

At the end of the study, we asked participants to rate the following item: Which information on the referral activity page did you focus on the most? (0 = 'Focus on the number of tasks,' 7 = 'Focus on the amount of the reward'). T-test results showed a significant difference between the three groups regarding their focus on rewards and tasks ($p < 0.01$). Thus, our manipulation on information presentation was effective.

Hypothesis testing: A homogeneity of variance test yielded $p = 0.083 > 0.05$, indicating no violation of variance homogeneity and supporting the null hypothesis. After controlling for gender, age, and income, an ANOVA conducted on participants' referral intentions revealed a significant main effect of information presentation ($p < 0.05$), as is shown in Table 7. Post-hoc multiple comparison test results are shown in Table 8. Participants in the reward-oriented presentation group had significantly higher referral intentions ($M = 4.758$, $SD = 1.517$) compared to the task-oriented presentation group ($M = 3.818$, $SD = 1.817$, $p = 0.031 < 0.05$). Additionally, the reward-oriented group showed a highly significant difference compared to the control group ($M = 3.03$, $SD = 1.404$, $p = 0.000 < 0.001$), supporting hypotheses H1. Meanwhile, the task-oriented group also showed a highly significant difference compared to the control group ($p = 0.036 < 0.05$) (see Table 8).

Table 7: ANOVA Test Results (Study 3)

Variables		**Task-oriented**	**Reward-oriented**	**Control group**
Referral intentions	Sample size	*n*=34	*n*=37	*n*=37
	Mean	3.82	4.76	3.03
	SD	1.82	1.52	1.40
F-value	11.083			
P	0.000*			
Note: ***p<0.001,**p<0.01, *p<0.05				

Table 8: Post-Hoc Multiple Comparison Test Results (Study 3)

Groups	**Groups**	**Mean difference**	***P***
Task	Reward	-0.933	0.031*
Task	Control	0.797	0.036*
Reward	Control	1.730	0.000***
Note: ***p<0.001,**p<0.01, *p<0.05			

To further validate the mediating effect of referral information presentation on consumers' referral intentions, we used the PROCESS SPSS macro (Model 4; 5000 iterations) (Hayes, 2013). In this analysis, the control group – where neither reward information nor task information was visually emphasized – served as the reference group. This setup allowed us to isolate and compare the effects of the task-oriented and reward-oriented information presentation formats relative to a neutral baseline. Results showed that when using the control group as a reference, there was no significant difference between the task-oriented information presentation group and the control group ($\beta = 0.1955$, t (104) = 3.2388, p= 0.1576, 95% *CI* [−1.326, 0.8067]). However, the path from reward-oriented information presentation to referral intentions was significant ($\beta = 0.4520$, t (104) = 3.2388, p= 0.0016, 95% *CI* [0.3022, 1.2568]) and the mediators perceived benefit ($\beta = 0.7488$, $p < 0.001$, 95% *CI* [0.7743, 1.0555]) and perceived cost ($\beta = -0.6940$, $p <$ 0.001, 95% *CI* [−0.8802, −0.5078]) showed a significant effect on referral intentions, suggesting that perceived benefits and perceived costs play a crucial role in mediating the relationship between information presentation and referral intentions.

A significant indirect effect of the reward-oriented information presentation on consumers' referral intentions was observed through the mediator of perceived benefits (95% *CI* [1.0005, 2.4589]) (see Table 9, Figure 7). After adding perceived benefits as a mediating variable, both the direct effect (95% *CI* [0.3022, 1.2568]) and the indirect effect (95% *CI* [0.3794, 1.4954]) of the reward-oriented information presentation group on consumers' referral intentions remained significant. Similarly, after including perceived costs as a mediator, both the direct effect (95% *CI* [0.2682, 1.5353]) and the indirect effect (95% *CI* [0.3649, 1.3266]) remained significant. These results suggest that both perceived benefits and perceived costs partially mediate the relationship between information presentation and consumers'

referral intentions, supporting hypotheses H2.

Table 9: Mediation Effect Test Results (Study 3)

	Effect	se	t	p	LLCI	ULCI
Mediators: perceived benefit						
Total effect: reward-oriented	1.7297*	0.3678	4.7034	0.0000	1.0005	2.4589
Direct effect: reward-oriented	0.7795*	0.2407	3.2388	0.0016	0.3022	1.2568
Indirect effect: reward-oriented	0.9502*	0.2860	/	/	0.3794	1.4954
Total effect: task-oriented	0.7965*	0.3758	2.1195	0.0364	0.0514	1.5416
Direct effect: task-oriented	0.3371	0.2368	1.4233	0.1576	-0.1326	0.8067
Indirect effect: task-oriented	0.4594	0.3099	/	/	-0.1617	1.0631
Mediators: perceived cost						
Total effect: reward-oriented	1.7297*	0.3678	4.7034	0.0000	1.0005	2.4589
Direct effect: reward-oriented	0.9018*	0.3195	2.8227	0.0057	0.2682	1.5353
Indirect effect: reward-oriented	0.8280*	0.2428	/	/	0.3649	1.3266
Total effect: task-oriented	0.7965*	0.3758	2.1195	0.0364	0.0514	1.5416
Direct effect: task-oriented	0.5907	0.3070	1.9240	0.0571	-0.0181	1.1994
Indirect effect: task-oriented	0.2058	0.2141	/	/	-0.2153	0.6351

Note: * indicates a significant effect.

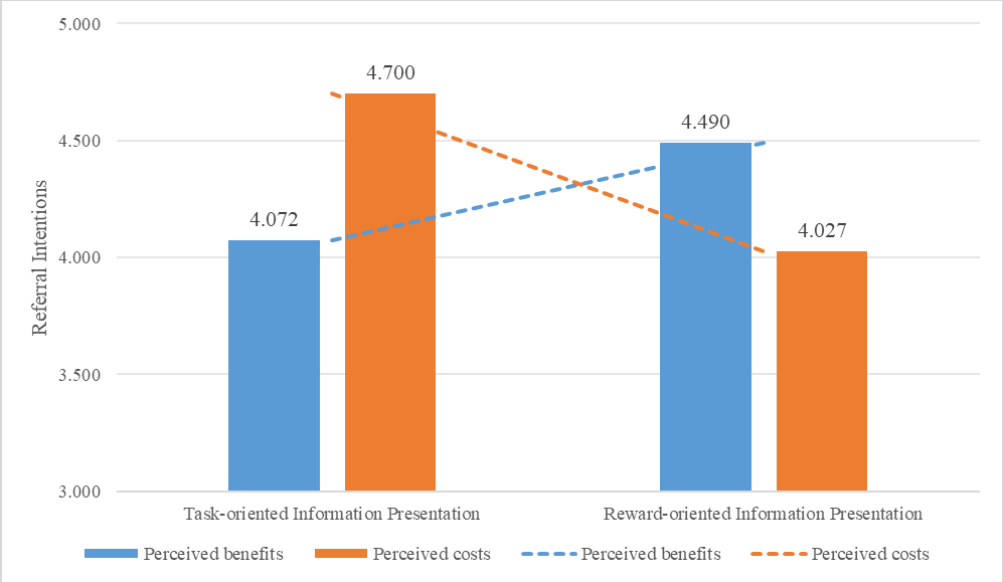


Figure 7: Perceived benefit and perceived cost in different presentation format (Study 3)

4.3.3. Discussions

Study 3 provided further validation of the findings from Study 2, offering additional insights into the mechanisms underlying the relationship between information presentation and consumers' referral intentions. By replicating the TSRP scenario, this study aimed to minimize potential experimental confounds and examine the mediating roles of perceived benefits and perceived costs in shaping referral decisions. The results confirmed that reward-oriented information presentation effectively enhances referral intentions by increasing perceived benefits while simultaneously mitigating perceived costs. These findings suggest that in TSRPs, consumers are more motivated to

participate when they perceive the potential rewards to be compelling and attainable, and the associated costs to be manageable.

A key contribution of Study 3 lies in its demonstration of how the interplay between perceived benefits and costs influences referral behavior within the TSRP context. Unlike linear referral programs, where decision-making tends to be straightforward, TSRPs introduce greater complexity, making the balance between expected gains and perceived effort a critical determinant of participation. The results indicate that reward-oriented presentations successfully shift consumer attention toward potential gains, creating a psychological perception of a favorable cost-benefit trade-off that encourages engagement. Conversely, task-oriented presentations may emphasize the effort required, which could lead to an increased perception of costs and dampen referral intentions.

Moreover, while Study 3 provided valuable insights into the cognitive mechanisms driving referral behavior, it also raised new questions regarding the role of social relationship contexts. Referral decisions do not occur in isolation but are embedded within consumers' social networks, where relationships with referees may introduce additional psychological considerations such as trust, reciprocity, and social pressure (Hong et al., 2017). It remains unclear whether the effectiveness of different information presentation formats varies depending on the closeness of the social relationship between referrer and referee. To address this gap, Study 4 was conducted to explore how varying social relationships moderate the influence of information presentation on referral intentions.

4.4. Study 4

While Study 3 identifies the mediating pathway, Study 4 extends the research by investigating how the effect of information presentation varies across different social relationship contexts. Grounded in social distance theory, this study examines whether the persuasive power of reward- versus task-oriented information presentation depends on the closeness between the referrer and referee. This study introduces social distance as a moderating variable and tests its interaction with information presentation formats.

4.4.1. Design and Procedure

We used the same scenario as in Study 2, focusing on the TSRPs by "inviting new consumers to download and register". The information presentation included both task-oriented and reward-oriented designs. In the task-oriented presentation, the focus was on the number of referees the consumer required to invite successfully, while in the reward-oriented presentation, the emphasis was on the bonus information.

To manipulate social distance, we adopted the approach of Hong (2017) and categorized seven types of social relationships into two categories: large social distance and small social distance. Close family members and intimate friends were classified as having a small social distance, while neighbors, colleagues, and acquaintances were categorized as having a large social distance. At the beginning of the experiment, participants were randomly assigned to one of four groups in a 2 (information presentation: task-oriented vs. reward-oriented) × 2 (social distance: large vs. small) between-subjects design. Participants were asked to imagine browsing a social referral discount activity on an e-commerce shopping platform app on their mobile phones.

To implement the manipulation, participants in the small social distance group were instructed to imagine sending the referral activity to a family member or a close friend. In contrast, those in the large social distance group were asked to imagine sending the activity to a neighbor, colleague, or online acquaintance. To enhance the realism and ecological validity of the manipulation, participants were asked to provide the social media username (e.g., WeChat ID or nickname) of the intended recipient, following prior studies that adopted projective role-playing methods (Wirtz et al., 2013; Ryu & Feick, 2007). This procedure encouraged participants to mentally simulate the referral behavior with a specific recipient, thereby reinforcing the salience of the assigned social distance condition.

After completing the manipulation, participants were asked to fill out a perceived social distance scale to assess the effectiveness of the manipulation. They then completed the measures of referral intentions, followed by demographic questions. In total, 218 participants from wjx.com were recruited, and after excluding 11 invalid responses, 207 valid responses were retained for analysis. All valid participants received an RMB 3 (approximately US $0.5) reward upon completion. The sample demographics are shown in Table 10. The age distribution of the sample was relatively balanced, with the majority being working consumers, making the sample quite representative.

Table 10: Descriptive Statistics of Participants (Study 4)

Basic characteristics		Sample size	Percentage
Gender	Male	78	37.7%
	Female	129	62.3%
Age	18-25	33	15.9%
	26-30	62	30.0%
	31-40	90	43.5%
	41 and above	22	10.6%
Income (¥)	2000 and less	16	7.7%
	2000-6000	51	24.7%
	6000-10000	93	44.9%
	10000 and above	47	22.7%

4.4.2. Measures and Results

Social distance was measured with Bogardus Social Distance Scale (Hong et al., 2017) which has demonstrated good reliability and validity (see Table 11). A pretest was conducted to refine the items before formal data collection. The results of the social distance manipulation showed that the social distance between the participants and the referees was significantly correlated with the manipulated social distance groups at the $p < 0.01$ level.

Table 11: Social distance measurement (Study 4)

Variables	Items	Reference
Social distance	He/She and I follow each other on social media. I value my relationship with him/her on social media. I share personal content with him/her on social media. I discuss personal topics with him/her on social media. He/She and I belong to the same discussion group on social media. I would recommend friends and family to follow him/her on social media. He/She and I use the same language on social media.	(Hong 2017)

We conducted an ANCOVA analysis with referral intentions as the dependent variable, information presentation as the independent variable, and social distance as the moderating variable to test the moderating effect. After controlling for the effects of age ($p = 0.245$) and experience in participating in activities ($p = 0.229$), the referral intentions of participants in the small social distance group ($N = 97$, $M = 4.932$, $SD = 1.771$) was significantly higher than that of participants in the large social distance group ($N = 110$, $M = 3.824$, $SD = 1.535$, $p = 0.000$).

The interaction effect between information presentation and social distance was significant ($F(1) = 4.210$, $p = 0.041$). As shown in Figure 8, in the scenario of large social distance, the effect of information presentation on referral intentions was more pronounced, with reward-oriented information having a more positive impact on consumers' referral intentions ($M_{task} = 3.721$, $M_{reward} = 3.930$, $p = 0.025$). However, in the scenario of small social distance, there was no significant difference in referral intention between the different information presentation ($M_{task} = 4.956$, $M_{reward} = 4.906$, $p = 0.091$). Therefore, hypothesis H3 was supported.

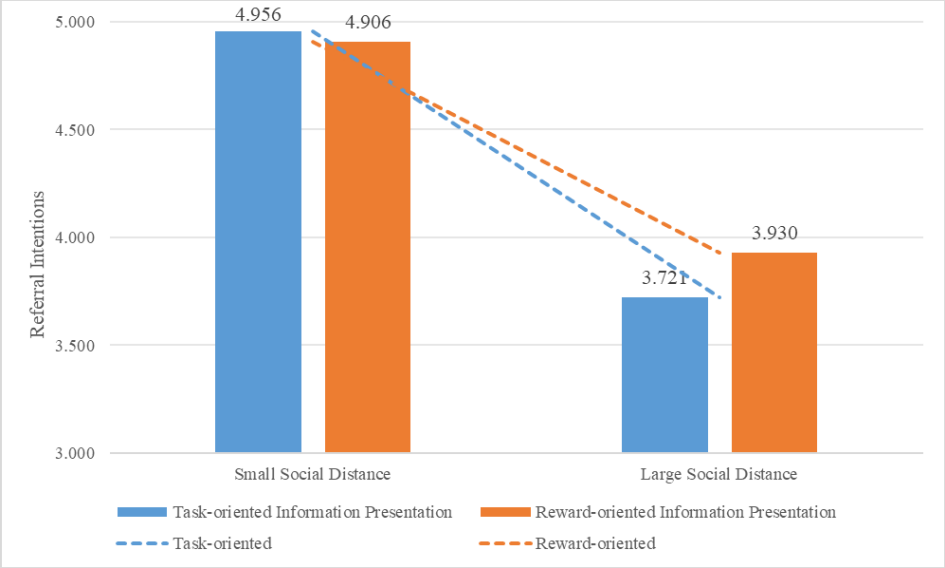


Figure 8: The interaction of social distance and information presentation format (Study 4)

4.4.3. Discussions

The results of Study 4 demonstrate that social distance moderates the effect of information presentation on consumers' referral intentions in TSRPs. When referrer is asked to refer to the large distance referees, the impact of information presentation is more evident.

When the social distance between the referrer and referee is large, reward-oriented information presentation leads to significantly higher referral intentions compared to task-oriented information presentation. Conversely, in small social distance contexts, no significant difference in referral intentions was observed between the two information presentation formats. This finding suggests that the influence of information presentation on referral intentions becomes more pronounced as the social distance increases.

Moreover, consistent with prior research (Hong et al., 2017), consumers exhibited a general preference for making referrals to those with closer social ties, regardless of the information presentation format. This reinforces the idea that social distance not only moderates the effect of information presentation but also plays a critical role in shaping referral behaviors in TSRPs.

4.5. General Discussions

The comprehensive analysis of the four studies elucidated the pivotal role of information presentation as an influence on consumer referral behavior within TSRPs. By examining the effects of task- versus reward-oriented information presentations, the mediating roles of perceived benefits and costs, and the moderating influence of social distance, we offer nuanced insights into consumer decision-making processes in TSRPs. Our findings indicate that in simple social referral programs (LSRPs), where referral tasks are straightforward and cognitive effort is minimal, the format of information presentation does not significantly affect referral intentions. This aligns with prior research suggesting that consumers rely on intrinsic motivations rather than external information cues in less complex decision-making scenarios (Jerath et al., 2021). Conversely, in TSRPs characterized by higher complexity and uncertainty, a reward-oriented information presentation substantially enhances referral intentions compared to task-oriented or non-highlighted presentations. This observation is consistent with HSM, which posits that emphasizing potential gains can effectively motivate consumers' information processing and decision-making in complex contexts (Fu et al., 2020).

The studies further revealed that perceived benefits and costs are critical mediators in the relationship between information presentation and referral intentions. Reward-oriented presentations amplify perceived benefits and diminish perceived costs, thereby fostering higher referral intentions. This finding corroborates the prospect theory, which asserts that consumers' adoption decisions are significantly influenced by their assessments of benefits and sacrifices (Tversky & Kahneman, 1981). In the context of TSRPs, highlighting rewards appears to simplify consumers' cost-benefit analyses, thus leading to increased participation intentions.

Finally, social distance emerged as a significant moderator in the efficacy of information presentation formats. When referrers perceived a greater social distance from potential referees, a reward-oriented presentation had a more pronounced positive effect on referral intentions. This phenomenon can be attributed to the reduced influence of social concerns in distant relationships, which makes tangible rewards a more decisive factor (Gershon & Cryder, 2020). In contrast, with close social ties, the inherent trust and relational dynamics mitigate the impact of information

presentation boosting, as decisions are more influenced by relational factors than by how information is presented.

Theoretically, this research enriches the understanding of consumer behavior in TSRPs by integrating the anchoring effect, HSM, and social distance. It underscores the necessity of considering cognitive and relational factors when designing effective referral programs. Practically, the findings suggest that marketers should tailor information presentation formats based on the complexity of the referral task and the targeted social context. For complex TSRPs, emphasizing rewards can effectively enhance participation rates, especially when targeting consumers with weaker social ties to potential referees.

5. Conclusions

Drawing upon HSM, this paper explored how different formats of information presentation affect consumers' referral intentions in online TSRPs. Given the complexity of task requirements and the uncertainty of rewards in TSRPs, we identified two presentation formats: task-oriented and reward-oriented. The experimental findings demonstrated that even with same task and reward allocations, different information presentation formats significantly affect consumers' attention allocation and referral intentions. It also provides evidence that perceptions of benefits and costs mediate this process, while social relationships moderate the association between information presentation format and referral intention. Notably, aligning information presentation format with social distance enhances consumers' referral intentions.

5.1. Theoretical Implications

This paper makes several contributions to the literature on the online reward referral programs. First, this research introduces information presentation format as a factor influencing consumer behavioral intentions in online TSRPs and provides a novel perspective for studies in this field. Our findings revealed that adjusting the information presentation format of the system's interface - without altering the platform's marketing costs - can significantly influence consumers' referral decisions regarding TSRPs. Existing research on social referrals has predominantly focused on the design of reward mechanisms (Brien et al., 2020; Jin et al., 2024), the influence of intrinsic consumer motivations (Melnyk et al., 2022), and the impact of product price information and advertising presentation on consumer decisions (Davis & Bagchi, 2018). The role of information presentation format in TSRPs has received limited attention. Building on existing research findings, this paper examined how information presentation format influences consumers' referral decisions and informs future research. Specifically, to enhance the efficiency of social referral activities, it is crucial to incorporate information presentation as a significant variable within the overall theoretical framework, alongside factors such as reward mechanisms.

Second, the research indicates that, compared to task-oriented information presentation format, reward-oriented presentation format is more effective in enhancing consumers' referral intentions. This result highlights the critical role of information presentation format in TSRPs and provides novel insights into decision-making mechanisms across diverse information structures. Previous research has demonstrated that referral reward schemes shape consumers' perceptions of benefits and costs (Li et al., 2024a), which then influence their referral intentions and behaviors. The findings further revealed that the decision-making environment in online TSRPs is even more complex: The complex interaction between task and reward structures hinders consumers' ability to assess benefits and costs objectively, which often leads them to rely more heavily on previous experiences. In this context, we find that merely altering how reward information is presented affects consumers' heuristic thinking, thereby affecting their judgments of expected benefits and costs, and ultimately affecting their referral decisions. This finding is further validated within the context of TSRPs. Our results align with the perspective proposed by Rey et al. (2020), which suggests that complex digital communication environments increase the difficulty users experience in evaluating information value. In such contexts, the order in which information is presented is a crucial factor for simplifying decision-making and information selection. Our research further validates this conclusion within the specific context of TSRPs.

Our research also integrated HSM and the anchoring effect to examine the impact of information presentation format on consumer decision-making for online TSRPs. The findings indicate that different formats of information presentation influence consumers' decision-making processes. Specifically, compared to task-oriented presentation format, reward-oriented presentation format is more likely to encourage consumers to adopt heuristic information processing, thereby simplifying the decision-making process and reducing their attention to key elements of the choices. This expands the understanding of the factors influencing information processing. Previous studies have predominantly focused on how factors such as processing capacity, motivation, and decision time pressure affect information processing (Fu et al., 2020; Martín & Valiña, 2023). We highlighted the role of information presentation format in shaping information processing within online TSRPs, which complements and extends existing research on visual cues in information presentation and the dual-process theory. These findings provide guidance for the future design of social referral reward strategies by elucidating how information presentation format influences consumers' psychological responses and behavioral choices.

Lastly, the results highlight that social distance plays a pivotal role in amplifying the effect of information presentation format on consumers' referral intentions, with the influence becoming particularly pronounced in cases involving large social distance. Our study elucidates the boundary conditions for the interaction between information presentation format and consumers' social relationships in online TSRPs. While previous research on referral intentions has primarily focused on the interplay between referral motivations (Jung et al., 2020) and referrer characteristics (Jin et al., 2024), by introducing social distance as a variable that reflects consumers' social relationships, we were able to examine the boundary for the effectiveness of information presentation format under the influence of social factors. Our findings are consistent with previous research showing that "small social distance promotes social referrals" (Qiu et al., 2020). However, we further revealed that the facilitation effect of information presentation format is more significant under conditions of large social distance. In such cases, consumers are more likely to engage in heuristic decision-making, which better guides them toward making positive social referral decisions. This finding clarifies the intricate relationship between consumers' social connections and their decision-making processing in the context of social referrals, and the results provide crucial theoretical insights into the influence of social distance on information presentation design for future social referral reward strategies.

5.2. Practical Implications

Based upon the findings from this research, several points should be considered in marketing strategy design when companies implement online TSRPs for low-cost flow generation and broadly disseminate commercial information. Platforms should focus not only on the effectiveness of the referral reward scheme but also on the design and sequencing of how information about the TSRP is presented. This is particularly important in complex information environments that use extensive digital technologies, where additional information noise increases the difficulty consumers experience in evaluating the value of information. Consequently, how information is presented becomes a critical factor in simplifying decision-making and information selection processes. Reward-oriented presentations are more effective in enhancing consumers' participation intentions. When designing referral activities, platforms and businesses should emphasize the direct benefits of participation (e.g., coupons, points, gifts) while de-emphasizing task-oriented details (e.g., completion time, project execution process). Clearly presenting these benefits can alleviate the psychological burden related to task complexity and increase consumers' enthusiasm for participation.

In TSRPs, task goals should be clearly defined to avoid obscuring details or increasing referral complexity, particularly in reducing the uncertainty around earning referral rewards. Consumers tend to share referral information with close contacts, but when tasks are complex and rewards are uncertain, their referral intentions decrease. Inappropriate formats for presenting information should therefore be avoided to prevent referral anxiety. To expand e-commerce platform's user base, it is crucial to strengthen consumers' trust and positive feelings toward the brand, because this trust and emotional connection would encourage consumers to share referral information with a broader audience. Platforms and businesses can attract and motivate consumers to share information with distant social circles (e.g., colleagues or online acquaintances) through innovative presentation strategies.

5.3. Limitations and Future Directions

This study has several limitations, which also provide directions for future research. First, we recruited participants through an online data platform and conducted simulated scenario experiments. While this approach provided representative samples and results, future research could incorporate offline experiments to enhance the generalizability and robustness of the findings. Second, the effects of different information presentation formats were measured using self-reported measures. Future research could collaborate with e-commerce platforms that employ TSRPs to test these effects in real-world settings. Finally, HSM involves consumer information adoption and processing characteristics that were not considered in this study. Future research should further explore these variables, with particular emphasis on how consumers' personality traits influence their choice of information processing formats. Additionally, we intend to investigate whether consumers' preferences for information presentation remain consistent when group characteristics are similar, thereby refining the application of related theories.

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