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Digital and Mobile Commerce

Dec 11th, 12:00 AM

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Short Paper

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Abstract

The social commerce platform engages users in an agent-led network, leveraging local ties and communal trust. Agents are neighborhood influencers facilitating user referral, community engagement, and product marketing. We study the economic value of the agents to the platform based on their native endowed network externality and the trust formulated from the interaction with the users. Using detailed performance and referral data from a leading social commerce platform in Indonesia, we find that (1) agents with a higher level of endowed network externality outperform the ones with a lower level; (2) a more trustworthy and, surprisingly, less connected agent produces higher community sales; and (3) user's perceived benevolence of the agent positively moderates the referral effect. The results suggest that the platform faces a trade-off between capitalizing on agents' social connections and nurturing community trust.

Keywords: Social commerce, trust, network externality, influencer economy, referral marketing

Introduction

Social commerce platforms leverage users' social connections to facilitate interaction, enhance engagement and boost sales, promoting an engaging and interactive experience compared to conventional e-commerce platforms. Social commerce platforms grow rapidly in the US with a market value of $80 billion and Chinese consumers spent $352 billion in social commerce e.g., Douyin (Camilo et al., 2022). In emerging Southeast Asia markets, the gross merchandise value of social commerce platforms has grown three-fold since 2019 (IKala, 2020). There has been a growing interest in the success of novel social commerce platforms such as Meituan in China and Webuy in Singapore. These platforms engage with users through an agent-led platform network, where individual agents establish and maintain connections with users in the platform. An agent, as both a community leader and neighborhood influencer plays a key role in promoting the platform through user referrals, community interactions, and product marketing.

The agents are the backbone of social commerce and influencer marketing. The platform's revenue and the effectiveness of the agent's referrals hinge on the agent's endowed native network and trust formulated in the interaction between agents and users. On the one hand, agents are valuable to the platform because the

platform's network is continuously expanding due to agents' referral efforts from their endowed social networks, i.e., an agent's native social connections in their extraneous networks. For example, frequent customers of a grocery store may become users of a platform if the store owner becomes a platform agent and refers his/her customers to the platform. Agents' endowed networks produce a positive externality that helps the platform expand the user base by exploiting agents' existing connections in the local community. We study such *endowed network externality* of an agent and its value to platform's network-in-built. On the other hand, mutual trust is formulated between users and the agent, based on shared tastes, the agent's expertise, and the agent's inclination to act for the user's benefit. Trust formation creates personal attachments and quality connections in the platform's network, improving sales performance and user retention. Prior research mainly focuses on the platform's design issues of social commerce, vendor's reputation management, and user's usage motivations, trust formation towards platform and vendors (Lin et al., 2017). However, the role of the agent in social commerce as a community influencer is understudied. We fill this gap by examining the value of an agent's endowed network and trust formulated with users. We investigate an agent's endowed network size and factors determine the trust formed between the agent and users, as well as the trade-off between the referral size and trust-building on community sale performance.

The emerging social commerce platform presents an opportunity to closely study the implications of community-based agent's user referral and retention efforts in social commerce. We posit the following research questions: (1) What are the values of the agent's existing social ties in the endowed network in the platform's network? (2) How is the agent's referral effect moderated by the interplay between the agent's platform network and the trust formulated between the agent and the users? We build upon prior works in trust formation in e-commerce platform (Gefen et al., 2003) and measure trust in multiple dimensions, including homophily between agent and users, agent's expertise as well as highlighting the role of the user's perceived benevolence towards the agent.

We collect detailed transaction and referral data from a major social commerce platform in Indonesia from Feb 2020 to Jan 2022 since the platform started its online grocery shopping business. We observe the platform's community network formation, agents' daytime professions, and referral relationships between agents and users. Users join the platform either through agent referral or self-registration (natural inflow) and make online grocery purchases via platform's mobile app and website. When a user completes an online purchase, the platform coordinates the community orders and bulk-shipping to the agent, who subsequently delivers the items to the user. Before finalizing an online order, all users should select an agent for delivery and opt-in to the agent's chat group. Agents are tasked with distributing products to all users within their communities during the final stage of delivery. The division of communities is based on geographic location. We compare transaction data with agents who have different number of referred users using the instrumental variable approach to answer the first research question. For the second question, we compare agents' network externality, expertise, agent-user homophily, and benevolence to evaluate the value of agents and heterogeneity effect on the main referral effect. Notable findings show that referred users result in higher user transactions than natural inflow users. A more trustworthy and less locally connected agent produces higher community sales, which means there exists a tradeoff effect of choosing agents who have a larger endowed network or are more trustworthy. In addition, the positive effect of agent referral is stronger if the agent has a larger native network size and higher benevolence levels.

Our study informs literature in two folds. First, this study adds to the marketing literature concerning the effectiveness of user referral efforts. Prior studies found that referral marketing converts social capital into economic capital, which has positive effects on consumer purchases and retention (Garnefeld et al., 2013). These studies mainly examine the one-shot referral program in that new users are referred to a product-driven platform at the start and the referrer plays no role thereafter. Our study examines the outcome of referral programs when referrers and referees form a long-term bond through repeated interactions and unveils the sources for the agent's economic value to the platform. Second, this study provides valuable insights into the value of influencers in social commerce. Prior studies in social commerce focus on websites, sellers, and users but give little attention to the role of influencers, especially in influencers' social characteristics and the trust between market participants (Lin et al., 2017). Extant literature on influencer marketing explored the effects of influencers on user engagement and purchase intention in social media (Vrontis et al., 2021) without exploring their value in social commerce. The present study addresses this gap by elucidating the powerful role of influencers in expanding audience reach, building trust, and driving sales. It also delves into how influencers' attributes, such as homophily with users and expertise, can impact trust-building and lead to increased economic transactions while exploring the underlying mechanisms.

Our result suggests that the platform faces a trade-off between capitalizing agent's endowed social connections and nurturing community trust. The study highlights the importance of careful agent selection by platforms. Given that all users in a particular region frequently interact with the same local agent, it is crucial to make informed decisions regarding agent assignments at different stages. Building enduring connections between agents and users can lead to more repurchase behavior, higher life-long value per user, and longer retention probabilities. In the initial stages, platforms can benefit from agents with more local connections to expand the user base quickly. In the long run, other attributes of agents like their expertise and benevolence are more crucial to build a trustworthy relationship with them.

The rest of the paper is organized as follows. We first review related prior works and then propose the hypotheses. The data and empirical strategy are detailed in the section of empirical design, followed by a discussion of the results. The paper concludes with the managerial implications and future research plan.

Literature Review: Social Commerce and Influencer Marketing

Social commerce is a web-based commercial application that utilizes social media to facilitate social interaction and user-generated content to aid consumers in their decision-making processes and the acquisition of goods and services within online marketplaces and communities (Huang & Benyoucef, 2013). Users can buy products endorsed by individuals or influencers they trust without the need to access external websites. Practitioners have attached increasing attention to its potential to facilitate shopping behavior using influencer strategies in social commerce (Penny, 2023). However, theoretical understanding or empirical investigation on the impact of influencers on consumers' social commerce intention is limited.

Prior studies in influencer marketing have explored the influence of various influencer characteristics such as credibility, attractiveness, expertise, and popularity on users' brand attitude, engagement, or purchase intention in social media (Hughes et al., 2019). However, there are only a limited number of studies that have investigated how influencers affect consumers' engagement and purchase intention in social commerce platforms. Only one study explores how influencers' social power affects consumer satisfaction or engagement level and boosts their intention to conduct social commerce activities (Wang et al., 2020). Even still, the above study has ignored the nature of trust in social commerce, which is an essential foundation on which e-commerce is built (Gefen et al., 2003). Trust means the confidence of the trustor's perception that the trustee (the agent or influencer) has attributes that are beneficial to the trustor, which has three key components (honesty, benevolence, and competence) (McKnight et al., 2002).

Antecedents of trust in social commerce in prior research include website design (website ease of use, transaction safety, website service quality, and social presence of the website), vendor characteristics (vendor reputation, information quality), user/customer characteristics (trust disposition, familiarity towards website or vendors, perceived closeness with the community), and shared characteristics between users (Cheng et al., 2019; Liu & Goodhue, 2012; Ng, 2013). Despite the existing literature examining social factors that affect trust in online commerce, scant attention has been given to user's trust perception of influencers. When a satisfied user shares their positive experience with their social connections, it can lead to increased visibility and sales for the seller. Furthermore, influencers possess a substantial following, with varying degrees of relationship strength existing between influencers and their followers. Wies et al. (2023) found that there is a contradiction between high reach and weak tie strength in influencer marketing campaigns. Influencers with a higher number of followers may have a lower inclination to engage with them, leading to weaker ties and reduced user participation. Moreover, the aims of influencer marketing in social media and social commerce platforms differ, with social commerce platforms focusing more on economic metrics such as sales and net benefits instead of user engagement. Thus, influencers with significant connections may not necessarily build trustworthy relationships that can convert their network capacity into economic value. We suggest that influencers with varying degrees of connection quantity and quality will have different economic benefits, with connection quality attributed to varying levels of trust.

Hypothesis Development

Agents' Network Externality and Social Commerce Platforms

In an agent-led social commerce platform, a part of the agent's value to the platform comes from their ability to project their existing social connections to the platform's network, which is referred as endowed

network externality. Agents who have larger native networks and stronger connection strength can refer more individuals to become users of the platform, thus leading to more transactions within the community of the corresponding agents. In addition, users who are referred to the platform tend to have closer relationships with the inviting agents, who can provide valuable resources, such as purchase suggestions or logistics tips, to reduce the users' cognitive load. Social exchange theory suggests that social behavior is viewed as a process of exchanging goods and resources, which may include both material and non-material resources such as symbols of approval or prestige (Homans, 1958). Individuals who receive valuable resources from others may feel a sense of obligation to reciprocate the exchange. The personalized service and more attention given to users create a sense of reciprocity, leading to more purchases and commission fees for agents. In addition, social enrichment also indicates that it is easier for a user to establish an initial bond with the firm (Schmitt et al., 2011), and the relationship is strengthened when the referrer is also a user of the firm (Castilla, 2005). This implies that agents with a higher level of endowed network externality will have better sales performance. Therefore, we have the following hypothesis.

H1: The sales performance of agents is positively related to agents' endowed network externality.

Platform Network and Trustworthiness of Agents

On the one hand, agents can attract new users, especially in the initial phase since agents are endowed with existing social connections with different relationships, from the same religious groups to the next-door neighbor. Those endowed social bonds help to proliferate the platform's network and establish initial trust between users and the platform via the referring agent. On the other hand, the quality of an agent's link with users in the platform's network is enhanced through interactions during the purchasing process which builds further trust. A higher level of trust between agents and users establishes a stronger connection, leading to increased transaction frequency, lower churning, and higher sales volumes. We develop our hypothesis by exploiting these two pillars that define the agent's economic value to the platforms and how they interplay with the effect of the agent's referral on the social commerce platform's market success.

The platform network of agents. Social commerce platforms can benefit from agents' native network externality, as their connections have a positive spillover on the platform's business network. However, agents with a larger community size in the platform will likely run into a limitation of their personal service capacity (Kumar, 2021). This decreases their service quality and interaction frequency with community members. However, users in social commerce platforms typically seek interactive and communal relationships that foster a sense of connection (De Veirman et al., 2017). Weaker ties between agents of larger network size and users reduce their purchasing likelihood, resulting in a decline in the efficacy of large networks in generating more transactions (Wies et al., 2023). Therefore, we have the following hypothesis.

H2: The positive effect of the agents' endowed network externality on the user's sales performance is weaker when the agent has a larger platform network size.

The expertise of agents. Expertise in social commerce platforms involves knowledge of both products and user preferences, which contributes to lower search costs and effective matching. For example, an expert agent should know which products would meet consumers' needs, deliver timely promotional information, and come up with recommendations for users to try new products. Prior research has shown that a salesperson with more expertise is more trustworthy and reduces uncertainty (Doney & Cannon, 1997; Swan et al., 1985). Trust is derived from someone who is perceived as competent, knowledgeable, and skilled in a particular domain (McKnight et al., 2002). Expert agents can make users develop trust and build satisfaction, which finally affects a consumer's purchase decision and loyalty (Kim et al., 2009). Therefore, we have the following hypothesis.

H3: The positive effect of agents' endowed network externality on the user's sales performance is stronger when the agent has a higher expertise level.

Homophily between agents and users. Similarity-attraction theory suggests that individuals possessing comparable traits, such as gender, age, values, and personalities, often presume shared perspectives, languages, interests, working styles, and expectations, thereby fostering a sense of perceived similarity to one another and people tend to engage in more positive social interactions with those who are similar to them (Berscheid et al., 1969; Byrne, 1971). Social exchange theory indicated that when individuals perceive others as similar to themselves, they tend to be more willing to trust them, as they assume that the

other person is more likely to share their values and have good intentions (McPherson et al., 2001). This leads to more favorable exchange outcomes, including higher levels of cooperation, reciprocity, and overall satisfaction (Blau, 1964; Molm, 2010). In social commerce, the presence of homophily between the agent and user will enhance the development of a strong social bond, facilitating more favorable exchange outcomes. Users will be more likely to trust the agent's recommendations and make purchases, resulting in higher levels of transactions. Therefore, we have the following hypothesis.

H4: The positive effect of the agents' endowed network externality on the user's sales performance is stronger when the agent-user has a higher level of homophily.

Benevolence of agents. Benevolence is one of the three main dimensions of interpersonal trust, along with ability and integrity, and is a crucial factor in the development of social capital and social networks. Benevolence is the extent to which an individual is believed to want to do good to others (aside from an egocentric profit motive) (Mayer et al., 1995). Benevolence suggests the trustee has some specific attachment to the trustor. Social exchange theory indicates individuals are more likely to engage in positive social exchanges when they perceive the other party as being trustworthy and that such positive social exchanges can lead to beneficial outcomes for both parties involved (Choi et al., 2015). Thus, if an agent is perceived as being benevolent, users will actively engage in positive social exchanges with the agent, leading to stronger relationships and more trust. The enhanced relationship and trust finally lead to increased transactions. Therefore, we have the following hypothesis.

H5: The positive effect of agents' endowed network externality on the user's sales performance is stronger when the agent has a higher level of benevolence.

Empirical Design

Data Description

We collaborate with a Southeast Asian leading social commerce platform on daily fresh grocery shopping in both major cities and rural areas in Indonesia. Users form local communities in proximity and purchase fresh groceries and personal care products via the platform's shopping app. Agents in the platform are responsible for community management, last-mile delivery, user networking, and marketing campaigns. One agent is appointed by the platform for each community. The agent's commission fees depend on the total purchase of the community (i.e. community sales). We collected spatiotemporal community network and transaction data, including user and agent demographics, referral and transaction relations, and marketing campaign logs between Feb 2020 and Jan 2022, a period marked by the platform's swift initiation and development. We aggregate the data at the agent-community level and compare transaction data among agents with different numbers of referred users in their communities.

Outcome variable. The main outcome variable we are interested in is the community sales performance *CommunitySales$_{it}$*, which is measured as the total purchase amount by the community i in month t.

Key variables of interests. The key independent variable is the acquisition number of users by agent i at time t, *Invited$_{it}$*. It is measured by the number of users who are referred to join the platforms and have at least one transaction record in month t in agent i's community. In addition, we are interested in variables measuring the network size of the agent *PastInvites$_{it}$* and the trustworthiness of agent i. Specifically, we use agent's expertise level measured by purchasing history of the agent from the platform *PastOrderDiversity$_{it}$* and *PastOrders$_{it}$*, gender homophily between users and their agent *GenderHomophily$_{it}$*, and agent's benevolence which is approximated by the agent's intention to provide users with sharable promotion codes *CouponShare$_{it}$*. The rationale for this is that agents are provided with discount codes by the platform, giving them the autonomy to determine the allocation between personal use and distribution to their community members. Coupons within the platform are not restricted to specific product categories and individuals; they are applicable across all categories and sent to the whole community. We also include several control variables such as order discount amounts, platform's marketing campaign intensity, a focal agent's acquisition source, gender, city of residence, profession, and performance level (Diamond, Gold, Silver, and Bronze) awarded by the platform to incentivize the agent. The descriptions and summary statistics of the main variables used in our analysis are in Table 1 and Table 2.

	Variable Name	Description
Community sales performance	*CommunitySales$_{it}$*	The sum of the agent i's sales in month t, in USD.
Endowed network externality	*Invited$_{it}$*	The number of users acquired by agent i in month t. Here users denote unique users with at least 1 transaction in the community in the month t.
Agent's platform network size	*PastInvites$_{it}$*	The cumulative number of unique users that agent i has invited to join the platform up to month t.
Agent's expertise	*PastOrderDiversity$_{it}$*	The cumulative unique product categories that agent i purchased on the platform up to month t.
	PastOrders$_{it}$	The cumulative number of orders which agent i has purchased on the platform up to month t.
Homophily	*GenderHomophily$_{it}$*	The proportion of users who are of the same gender as agent i in month t with at least one transaction in the community in month t.
Agent's Benevolence	*CouponShare$_{it}$*	The proportion of promotion codes (discount codes) which agent i shared with his community in month t.

Table 1. Description of Main Variables

Variable	Mean	S.D.	Min	Max	Skewness
CommunitySales$_{it}$	174.6	1744.8	0.1	253021.1	102.7
Invited$_{it}$	7.0	18.1	0	1359	15.5
PastInvites$_{it}$	12.8	39.0	0	2884	25.3
PastOrderDiversity$_{it}$	7.2	4.5	0	17	0.2
PastOrders$_{it}$	64.6	169.7	0	3140	7.0
GenderHomophily$_{it}$	0.4	0.3	0	1	0.3
CouponShare$_{it}$	0.8	0.3	0	1	-1.2

Table 2. Descriptive Statistics of Main Variables

Empirical Model

We use a fixed effect (FE) model at agent i and month t level to test our hypothesis. The fixed effect model successfully controls unobserved community and agent-level heterogeneities that are often major concerns in marketing and e-commerce settings. Our benchmark model is specified below:

$$\text{CommunitySales}_{it} = \beta_0 + \beta_1 \text{Invited}_{it} + \beta_2 \text{PastInvites}_{it} + \beta_3 \text{PastOrders}_{i,t-1} + \beta_4 \text{PastOrderDiversity}_{i,t-1} + \beta_5 \text{GenderHomophily}_{it} + \beta_6 \text{CouponShare}_{i,t-1} + \mathbf{M}_{it}^T \boldsymbol{\gamma} + \mathbf{X}_{it}^T \boldsymbol{\delta} + \alpha_i + \varepsilon_{it}$$

We use lag term *CouponShare$_{i,t-1}$* in the model as users' perception of their agent' benevolence level on month t is based on agent's codes sharing behavior on month $t-1$. We apply log transformation on *CommunitySales$_{it}$, Invited$_{it}$, PastInvites$_{it}$,* and *PastOrders$_{it}$* for comparable scaling and better interpretation. $\mathbf{M}_{it}$ refers to interaction terms of *Invited$_{it}$* and moderators including *PastInvites$_{it}$, PastOrders$_{i,t-1}$, PastOrderDiversity $_{i,t-1}$,* and GenderHomophily$_{it}$. $\mathbf{X}_{it}$ is control variables, including order characteristics, platform's marketing campaign intensity, and agent characteristics.

Endogeneity and Robustness

Fixed-effect analysis eliminates time-invariant confounding factors. However, even after explicitly controlling for the agent's native network size and trust-related covariates that drive agent-user referral decisions, the observed main effects might be spurious due to time-variant factors that are unobserved to the econometricians such as community development or neighborhood-specific events, etc. We introduce instrumental variables (IVs) and apply a two-staged least square (2SLS) approach for our key variable of interest *Invited$_{it}$*. We propose the lagged referred numbers in each agent's community as an instrument for

the current-period referred numbers, including *Invited$_{i,t-1}$, Invited$_{i,t-6}$, Invited$_{i,t-12}$*. The underlying assumption is that the lagged period referral user numbers are not systematically correlated with unexpected changes in current-period unobserved referral user number changes. In addition, we include a pooled ordinary least squares (OLS) model and a random effects model for a further robustness check.

CommunitySales	(1)FE	(2)FE	(3)FE	(4)2SLS	(5)2SLS	(6)2SLS	(7)Pooled	(8)RE
Invited	0.967***	0.320***	0.561***	0.039	0.441***	0.298***	0.354***	0.411***
	(0.009)	(0.009)	(0.020)	(0.044)	(0.100)	(0.098)	(0.017)	(0.017)
PastInvites	0.056***	-0.058***	-0.008	-0.074***	-0.036*	0.029	-0.043***	0.017
	(0.014)	(0.011)	(0.014)	(0.014)	(0.022)	(0.027)	(0.010)	(0.011)
PastOrderDiveristy$_{(t-1)}$	0.006*	0.008***	0.006	0.031***	-0.018*	0.025*	0.030***	0.015***
	(0.003)	(0.003)	(0.005)	(0.006)	(0.010)	(0.014)	(0.005)	(0.005)
PastOrders$_{(t-1)}$	-0.010	0.006	0.086***	0.197***	0.371***	0.198***	0.190***	0.141***
	(0.010)	(0.007)	(0.015)	(0.018)	(0.030)	(0.038)	(0.014)	(0.015)
GenderHomophily	0.062***	0.010	0.023	-0.058	-0.189***	-0.089	0.022	0.044
	(0.023)	(0.017)	(0.029)	(0.039)	(0.070)	(0.079)	(0.026)	(0.027)
CouponShare$_{(t-1)}$	0.022	0.033***	-0.090***	-0.518***	-0.378***	-0.178*	-0.155***	-0.114***
	(0.014)	(0.011)	(0.025)	(0.050)	(0.078)	(0.091)	(0.026)	(0.025)
Invited ×PastInvites			-0.043***	0.028***	0.016	-0.016	-0.001	-0.022***
			(0.005)	(0.006)	(0.011)	(0.013)	(0.004)	(0.004)
Invited ×PastOrderDiveristy$_{(t-1)}$			-0.003	-0.010***	0.007*	-0.003	-0.012***	-0.006***
			(0.002)	(0.002)	(0.004)	(0.005)	(0.002)	(0.002)
Invite ×PastOrders$_{(t-1)}$			-0.025***	-0.051***	-0.108***	-0.037**	-0.049***	-0.043***
			(0.005)	(0.007)	(0.012)	(0.015)	(0.005)	(0.006)
Invited ×GenderHomophily			-0.010	0.020	0.048	-0.005	-0.022	-0.027
			(0.017)	(0.022)	(0.038)	(0.039)	(0.015)	(0.017)
Invited ×CouponShare$_{(t-1)}$			0.049***	0.182***	0.105***	0.049	0.058***	0.075***
			(0.010)	(0.019)	(0.029)	(0.032)	(0.011)	(0.010)
Control	×	√	√	√	√	√	√	√
Observations	25,348	25,348	25,348	19,905	7,751	3,184	25,348	25,348
R²	0.540	0.726	0.732	0.839	0.879	0.903	0.836	0.737

1. Column (4), (5), (6) present results of 2SLS models utilizing *Invited$_{i,t-1}$, Invited$_{i,t-6}$, Invited$_{i,t-12}$* as IVs, respectively.
2. ***Significant at the 1 percent level. **Significant at the 5 percent level. *Significant at the 10 percent level.

Table 3. Estimation of Panel Data Model

Results

Table 3 summarizes the estimation results. Column (1) investigates the effect of the main variables in a fixed-effect model, column (2) adds control variables to the model, and column (3) further includes moderators. Columns (4), (5), (6) present results of 2SLS models using *Invited$_{i,t-1}$, Invited$_{i,t-6}$, Invited$_{i,t-12}$* as IVs, respectively. The results are largely consistent across 3 models with different IVs. As expected, the coefficients of the variable of interest *Invited$_{it}$* are positive and statistically significant across FE and 2SLS models. This shows that agents who have a higher level of endowed network externality are likely to perform better. Hypothesis 1 is thus supported. In addition, the coefficients of *Log.PastInvites$_{it}$* are negative, which indicates that an agent with a larger platform network does not translate to greater community sales, contradicting intuition in influencer marketing that the more connected agents perform better. The coefficients of *PastOrderDiversity$_{i,t-1}$* and *Log.PastOrders$_{i,t-1}$* are positive, implying that agents with more product expertise tend to have better sales performance. The coefficients of *GenderHomophily$_{it}$* are not significant, showing that agent and users having the same gender or not does not have an impact on sales. The coefficients of *CouponShare$_{it-1}$* are negative. Surprisingly, agents sharing more promotion codes have smaller community transactions, which we will further explore in our ongoing work.

For moderating effects, the coefficient of *Log.Invited$_{it}$×Log.PastInvites$_{it}$* in column (4) is significantly positive, providing strong evidence that agents with a larger platform network sizetend to perform better among referred users than agents with a small local network. The result is in contrast to Hypothesis 2.

Secondly, the coefficients of $Log.Invited_{it} \times PastOrderDiversity_{i,t-1}$ and $Log.Invited_{it} \times Log.PastOrders_{i,t-1}$ are significantly negative, which is not consistent with our expectation that agents who have more expertise with products should have better sales performance among referred users. We believe that this could be due to the crowding-out effect from the platform rule that agents have the incentive to fulfill monthly agent's tier requirement for total transaction amount. Therefore, more agent purchases reduce the proportion of community purchase, giving rise to the negative result. Thirdly, $Log.Invited_{it} \times GenderHomophily_{it}$ are positive but not significant, and we don't yet see evidence to support Hypothesis 3 and 4 with our data. Lastly, the coefficients of $Log.Invited_{it} \times CouponShare_{i-1t}$ are positive and significant. This supports the idea that agents benefiting their community perform better with referred users compared to more selfish agents, aligning with Hypothesis 5. In addition, we present the outcomes of a pooled ordinary least squares model and a random effects model in Columns (7) and (8) respectively, consisting with our benchmark results.

Discussion

Managerial Insights. Our findings provide valuable insights for social commerce platforms in selecting and managing agents to maximize user satisfaction, and platform performance. The study suggests that social commerce platforms can benefit from agent selection based on both the agent's endowed network size and trust-building capacity. In the short term, platforms can benefit from agents who have a larger local network to expand the user base quickly. However, in the long run, platforms should prioritize agents who have higher levels of expertise and good-will to build trust and strengthen ties with users. The study also reveals that agent's referral activities result in increased value creation for social commerce platforms and this is further enhanced by the user's continuous trust in their agents. This is a good indication that social commerce platforms should invest in incentive or training programs for agents to enhance their "trust and bonding" with users in addition to service-oriented metrics. This is especially true for agents with large local networks as shown in our analysis.

Ongoing work. To improve reliability of our study and gain more insights, we are conducting a follow-up survey of platform users. This survey will provide more precise measurements of agents' expertise, benevolence, and homophily, given agents' gender, age, profession and other demographic information. We will also assess user-perceived trust toward agents to gain a comprehensive understanding of how moderators impact trust. In addition, network metrics of users and agents such as betweenness and clustering will also be measured. We will also examine how the proposed effects change over time to gain valuable insights into platform dynamics. Finally, we will conduct a user-level analysis to investigate effective policies in user retention on social commerce platform.

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