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Prosumer-to-customer exchange in the sharing economy: Evidence from the P2P accommodation context



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ABSTRACT

Numerous prosumers who share their spare resources have contributed significantly to sharing economy development in recent years. Existing research on the sharing economy has primarily focused on the service demand side of consumers, thus neglecting the service supply side of individual prosumers. Understanding of the service exchange between prosumers and customers in the peer-to-peer (P2P) sharing economy remains limited. Drawing on the motivation, opportunity, and ability (MOA) model and social exchange theory, we developed a conceptual framework to explore how prosumers' service attributes influence consumers in a P2P accommodation sharing context. Using 313 questionnaires and 112 paired objective data points from prosumers in one popular P2P accommodation platform (i.e., Xiaozhu.com), this research found that prosumers' economic motivation, service flexibility, and service knowledge level have distinct effects on consumers' transactional-based and relational-based participation. We also found a moderating role of prosumers' shared property management on these effects.

1. Introduction

Considerable development of digital technology has dramatically increased peer-to-peer (P2P) sharing economy service operations globally (Kozlenkova et al., 2021). Practically, sharing economy platforms such as Airbnb (a P2P accommodation platform) have been utilizing individual peers' spare resources (e.g., tangible resources, such as real estate, and intangible resources, such as knowledge and skills) in the access-based consumer service (Duggan et al., 2020; Eckhardt et al., 2019). The importance of these individuals' (i.e., labeled "prosumers") service provision is becoming increasingly prominent for sharing economy development, such as service innovation (Abhari et al., 2019; Lang et al., 2021).

Unlike individual service employees in a conventional organization, prosumers show uniqueness in service practice. Typically, there has been a series of HR practices regarding recruiting, training, and supporting employees in the traditional industry (Panagopoulos et al., 2020). However, the requirements for being a prosumer in the sharing economy have dramatically changed. The qualifications for being a prosumer are low; each individual with spare resources could easily

register on a sharing economy platform (Breidbach & Brodie, 2017). Thus, due to the limited requirements, prosumer groups might show great individual heterogeneity regarding service attributes.

Moreover, prosumers are predominantly in charge of how to exchange with consumers because sharing economy platforms engage minimally in their service activities. For example, prosumers dominate the online responses and offline hospitality in the P2P accommodation sharing context (Gunter, 2018; Pappas, 2019). Thus, prosumers take great responsibility for providing services and managing their properties independently. These phenomena raise a practical question: how do prosumers utilize personal intangible resources (e.g., time, efforts) and tangible property into their service provision activities?

Our review of prior literature on prosumer service in P2P accommodation sharing suggests two research gaps. First, the research is scant about the prosumers' service attributes, indicating how to utilize intangible resources. Prosumers' service attributes especially deserve more examination because a better understanding of the service attributes important to consumer responses contributes to service improvement (Bacon, 2012). For example, it is beneficial for promoting a successful prosumer–consumer exchange when identifying the

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overriding attribute that exerts considerable impact on consumer responses. However, though scholars shed light on the uniqueness of these individual service providers (e.g., Lin et al., 2019), little research offers a rationale about whether and how prosumers' service attributes (e.g., motivation, service knowledge) lead to various consumers' responses.

Second, regarding utilizing tangible resources, although prior studies have explored the variance of prosumers' shared property management (e.g., whether one focal prosumer devotes multiple properties) in the P2P accommodation context, little is known about how prosumers' property management interacts with their service attributes. Specifically, there is a critical "quantity-quality" dilemma in shared property management practice. For instance, in the P2P accommodation context multiple-listing (i.e., investing multiple properties) prosumers' performance is better than single-listing prosumers' performance because they have the advantage of the amount, whereas single-listing prosumers could strive for excellence and enhanced personalization service visà-vis quality (e.g., Kwok & Xie, 2019; Xie & Mao, 2017). Neglecting the integration mechanisms of prosumers' service attributes and shared property management means we cannot precisely predict how prosumers' intangible and tangible resources are configured in the prosumer-consumer service exchange.

To address the gaps, we investigated the following two substantive research questions in the P2P accommodation context: First, how do different prosumers' service attributes influence consumers' responses? Second, do prosumers' shared property management moderate the effects if impact occurs?

This study investigates the research questions through two theoretical lenses and generates three relevant contributions. First, drawing on the motivation, opportunity, and ability (MOA) model (MacInnis et al., 1991), we provide a comprehensive theoretical framework of how prosumer service attributes influence consumer responses. Specifically, in the P2P accommodation context, prosumers input their personal resources (e.g., tangible properties and intangible efforts) as the cost of service. Thus, in the first dimension of motivation, we theorize the economic motivation, which indicates prosumers' tendency to earn money as a payoff (Benoit et al., 2017). The second was the dimension of opportunity. Unlike traditional workers' fixed work schedules, prosumers have considerable flexibility in their service activities (Zhang et al., 2019b); therefore, we considered the service flexibility of opportunity. It indicates the extent of freedom for prosumers to schedule and arrange their service activities (Zhang et al., 2019b). The third dimension was ability. In practice, prosumers' service knowledge determines whether they can provide satisfying service to consumers (Younger, 2016). We therefore investigate prosumers' service knowledge level, which refers to whether service providers are familiar with consumers and service provision, indicating the level of service ability (Bettencourt et al., 2001).

Second, according to the tenet of exchange patterns in the social exchange theory (Blau, 1964), we posit that consumer responses in the exchange with prosumers are varied. Some consumers value prosumers' service and economically respond to their business; for example, some studies shed light on the response of consumer purchasing (e.g., Liang et al., 2018; Mao & Lyu, 2017). At the same time, other recent research shows that consumers might anticipate reciprocal responses that are relatively rare in a traditional hotel setting, such as voluntary cleaning behaviors in the P2P accommodation (Ma et al., 2020; Wang et al., 2019). Therefore, to further investigate whether and why consumers variously respond to prosumer service, we theorize that two exchange routes coexist in the prosumer-consumer exchange. Economic exchange, driving consumers' transactional-based responses, refers to consumers' purchases behaviors with prosumers. Social exchange, leading consumers' relational-based responses, indicates consumers' civility in harmonious relationships with prosumers.

Third, we enunciate the combined effects of prosumers' service provision on consumers' response by bifurcating it into personal service attributes that indicate the usage of intangible resources and shared property management, which reflects the utilization of tangible resources (i.e., investing single property or multiple properties). This is a silent perspective that has been ignored in previous sharing economy research. We explicitly clarify how prosumers employ their resources to encourage different consumer responses.

2. Literature review

2.1. Prosumers in the P2P accommodation

"Prosumer" in the sharing economy refers to the individuals who offer P2P services, and they can switch their roles between consumers and service providers (Eckhardt et al., 2019; Lang et al., 2021). In P2P accommodation sharing service, prosumers utilize their private spare assets (e.g., apartment) in service provision to create value (Zhang et al., 2019b) and gain expected rewards (e.g., money, friendship). They anticipate a fluid lifestyle (Bardhi & Eckhardt, 2017) and serve as critical value cocreators, which is regarded as one of the unique features that differentiate prosumers from traditional employees in the service network of the sharing economy (Cova & Dalli, 2009; Dann et al., 2019; Dellaert, 2019). Moreover, although the relationship among sharing economy actors (i.e., platform, prosumer, consumer) is triadic (Benoit et al., 2017), platforms are not fully involved in the actual service delivery process. Numerous prosumers primarily act as the leading service providers (Havas Media Group, 2021). Though prosumers featured with both uniqueness and distinctiveness in service practice, they contribute markedly to sharing economy service innovation. For example, consumers may experience intimate relationships and novel events (Tussyadiah & Pesonen, 2016), such as activities occurring in a given locale that engenders a consumer feeling of his/her being at home (Xu et al., 2019; Zhu et al., 2019). These phenomena show that prosumers' engagement in P2P accommodation leads to their anticipating innovation service delivery and provides new experiential value for consumers.

2.2. One MOA model of prosumers

According to MacInnis et al. (1991), the MOA variables ultimately determine individuals' behaviors toward specific tasks. Specifically, motivation refers to individuals' inner drivers, opportunity represents the external contextual factors that constrain or facilitate individuals' behaviors, and ability embodies the knowledge or skills that could be used to take a specific action. This study utilized the preceding theoretical basis for investigating prosumers' service attributes in a P2P accommodation context.

Service motivation of prosumers. Motivation is a stimulus that prompts individuals' actions toward their goals (Gruen et al., 2007). The antecedents of one's motivation directly affect his/her behaviors and performance. In prosumer service practice, motivation could indicate a prosumer's readiness or reasons to share his/her assets with and provide peer service for economic (e.g., purchase orders) and social (e.g., personal reputation) benefits for consumers (Benoit et al., 2017). Similar to the various individual motivations for driving consumer engagement in the P2P sharing context (Hawlitschek et al., 2018), these individual prosumers' motives for engaging in P2P accommodation are also varied. For instance, financial interests (Renuka, 2019; Zhang et al., 2019a), enhanced flexible social interactions (Benoit et al., 2017), environmental protection (Dann et al., 2019; Gazzola et al., 2019), entrepreneurial freedom (Benoit et al., 2017; Karlsson et al., 2017), and a sharing philosophy (Renuka, 2019). Although prosumers' motives for bestowing service vary from social and pecuniary benefits to environmental and even entrepreneurial benefits, the economic motivation is likely the paramount motive because prosumers invest their personal properties and generate personal costs that need payoffs (Benoit et al., 2017; Zhang et al., 2019a); otherwise, this may lead to high economic stressors (Xu et al., 2021). Though previous studies have discussed how prosumers' motivation influences their service behaviors (Bucher et al., 2016), and

limited empiricism has verified their influences on consumers' participation—a critical service outcome that determines the success of a prosumer–consumer exchange.

Service opportunity of prosumers. The opportunity dimension in the MOA model refers to the situation that is conducive (or not) for an individual to implement a behavior (Gruen et al., 2005). In the P2P accommodation, prosumers' flexibility is a unique feature that differentiates it from the traditional economy (Moon et al., 2019). It might enhance or impede prosumers' participation as a situational factor (Benoit et al., 2017). More specifically, prosumers can plan and design their service provision without the typical necessity where a firm monitors its employees; after all, they are free to decide their service provision activities (Zhang et al., 2019b).

The above phenomenon, though, can be a double-edged sword. From a positive perspective, flexibility offers prosumers virtually total freedom that fosters their passion and potential in the service provision process (Zhang et al., 2019b). They have the autonomy to decide whether to acquiesce to a consumer's request and provide services mainly dependent on prosumers' preferences when providing accommodation sharing services (Karlsson et al., 2017). From the opposing point of view, though, prosumers might disperse their efforts (e.g., a prosumer host provides accommodation sharing services without faceto-face interaction with consumers) in the service and provide more than when a firm relies on traditional employees full-time working in service contexts. Besides, prosumers' absence of a service company's standardized long-term training and supervision inevitably leads to uncontrollability and divergent outcomes in service competence and service performance (Xie & Mao, 2017). Despite this situation, the potential effects of prosumers' flexibility on consumers' responses are essentially ignored in prior research.

Service ability of prosumers. According to the MOA model, ability in service refers to the extent to which service providers have the required proficiencies to reach their goals (Gruen et al., 2007; Zhang et al., 2019b). Previous work in the P2P sharing economy has identified the importance of prosumers' service ability in the service delivery process (Zhang et al., 2019a). For instance, some prosumers hosting with professional skills in P2P accommodation could receive high ratings and consumer satisfaction (Gunter, 2018).

Moreover, research from the consumer perspective also has determined that consumers consider prosumers' abilities, such as competence and empathy, to be important factors when deciding whether to participate in the sharing economy (Agag & Eid, 2019). However, the group of prosumers is a highly heterogeneous population with unpredictable and uncontrollable service abilities in practice (Li et al., 2020). The first reason is that the entry barriers to being a prosumer in the sharing economy are low (Breidbach & Brodie, 2017), though individuals who may not have sufficient service ability but have spare houses could readily register as prosumers on P2P accommodation sharing platforms. Second, platforms are typically not interested in offering systematic preemployment training to guide prosumers' inservice practice (Bucher et al., 2020). Thus, different prosumers should have specific qualifications and skills that might exert distinctive impacts on consumers' evaluations and subsequent responses (Zervas et al., 2017).

To conclude, compared to the thriving research on consumer behaviors in P2P accommodation sharing, prosumer research, especially for the empirical study on prosumers' service attributes, is absent. More specifically, no work has investigated the impacts of prosumers' service attributes in a full MOA model; as such, whether the three MOA dimensions show similar or different effects on consumers' responses remains an empirical question. Shown in Table 1 is a key summary of a sampling of pertinent studies and whether they examined the fundamental factors of the MOA model.

2.3. Consumers' responses in the prosumer-consumer exchange

Under the evolution of service-dominant logic, marketing has gradually shifted from pure product marketing to relationship marketing (Hultman, 2003). Furthermore, relationship marketing refers to "longterm ... committed, trusting, and co-operative relationships with consumers" (Bennett, 1996, p. 418). This transformative change confirms the tenet of the social exchange theory: when making transactions, individuals pursue satisfying, tangible financial needs and particular social and esteem needs (Bagozzi, 1975). Coincidentally, the sharing economy entails a type of transaction that is centered on both assetoriented nonownership transactional exchanges and relation-oriented, reciprocal connections (e.g., Belk, 2014; Yang et al., 2017). For instance, one stream of existing studies has found that the consumer transactional response (e.g., purchase) is affected by prosumers' service provision-related factors (Benoit et al., 2017). Another thread of extant work explored the relational response (e.g., civility, reciprocity) influenced by prosumers' service attributes (Ceptureanu et al., 2020; Ma et al., 2020; Wang et al., 2019). According to the assumptions of exchange patterns in social exchange theory (Bagozzi, 1975), we posit that economic and social exchange coexist in the prosumer-consumer relationship.

When pursuing economic exchange, we assume that consumers are guided by utilitarian principles and self-interest (Bagozzi, 1975). Sensible benefits (e.g., satisfaction about marketing delivery) are predominant in the transaction marketing paradigm (Coviello et al., 2002). Previous service research has shown that consumers' transactional responses have been ascertained as being triggered chiefly by qualityrelated perceptions (Chiappa et al., 2021; Parasuraman et al., 1988; Priporas et al., 2017a). This assumption also drives consumer engagement in the P2P accommodation service context. For instance, prosumers' service attitude (e.g., sincerity, benevolence, empathy; Agag & Eid, 2019; Mody et al., 2019; Priporas et al., 2017b) and relationship construction with consumers (e.g., high-quality relationship, face-toface interpersonal interaction) determine consumers' transactional attitude and intentions (Moon et al., 2019; Wang & Jeong, 2018). Furthermore, scholars have discerned that being sympathetic with the prosumer is also an important antecedent of consumers' transactional participation response (Huarng & Yu, 2019; Wu et al., 2017). For example, dyadic trust between prosumers and consumers (Amaro et al., 2019; Mahadevan, 2018) as well as prosumers' hospitality (Priporas et al., 2017b) and social interactions (So et al., 2018) positively affect consumers' participation. However, encountering awful service might impede consumers' future purchases (Griffith et al., 2018). Hence, the preceding discussion suggests that economic exchange between prosumers and consumers is associated with consumers' transactionalbased responses.

In P2P accommodation services, interactions between consumers and prosumers are also redolent of those of two individual strangers (Xie et al., 2019) rather than firm–consumer or employee–consumer interactions. In this vein, therefore, consumers and prosumers might have the desire to anticipate social exchange that facilitate reciprocity and prompts relational-based responses (Coviello et al., 2002). For example, Wang et al. (2019) found that social factors positively influence consumers' reciprocal behaviors, such as helping prosumers clean their rooms. Thus, we assume that social exchange between prosumers and consumers is associated with relational-based responses. Shown in Table 1 is a sampling of studies that have investigated consumers' response from a service perspective and their key findings.

3. Hypothesis development

Our work investigated how prosumers' service attributes (i.e., economic motivation, service flexibility, service knowledge level) affected consumers' responses. We did so by using the MOA model to illustrate prosumers' service attributes (motivation, opportunity, and ability) and

Representative Empirical Research on Prosumer Service Provision and Consumer Responses in the P2P Accommodation.

References	Prosu	mer service attrib	utes	Consideration of tangible		r response quences	Theo	ory foundations	Key findings
	Service motivation	Service opportunity	Service ability	resources	Response type	Metric of consumer response	Theory for framing prosumers' service attributes	Theory for exploring prosumer–consumer exchange	
Li et al. (2020)	Better interpersonal relations, ease of operations, better work–life balance, setting the cost of living.	Extra burden, market demand, competition, government regulations, guest issues, platform constraints, etc.	Personal capacity	Business scale	×	×	The theory of planned behavior	×	Constraints inhibit prosumers' intention to continue their business, and motivators heighten their continued intention. Multiple business scales could mitigate the negative relationships between constraints and prosumers' intention to continue.
Renuka (2019)	Earning extra money, social interaction, sharing economy philosophy	Service convenience	X	×	×	×	×	×	Monetary incentive and convenience are the main factors stimulating individuals to b prosumers.
Ceptureanu et al. (2020)	×	×	×	Service portfolio complexity	Relational	Sustainable behavior (Objective)	×	×	Service portfoli complexity promotes consumers' sustainable
Agag & Eid (2019)	x	Others' trust of the buyer, third-party recognition	Ability	×	Transactional	Intention to book (Subjective)	×	Social network theory	behavior. Consumer natural propensity to trust and third- party recognitic positively affect consumers' booking
Xie & Mao (2017)	x	×	×	Host quantity attribute	Transactional	Listing performance (Objective)	×	Signaling theory	intention. Prosumers' quality attribut (e.g., super hoss significantly affect their financial return However, the effects would b weakened wher more service resources are invested.
Xie & Chen (2019)	Financial benefits, online social interaction, membership seniority	×	×	Multiple- listing behavior	×	×	Two-sides market model	×	Three incentive determine whether prosumers anticipate multiple-listing behaviors.
Wang et al. (2019)	×	×	×	x	Relational	Consumer sustainable consumption behavior (Objective)	x	Social exchange theory	pricing and rating significantly affect consumer sustainable consumption

(continued on next page)

References	Pros	umer service attrib	outes	Consideration of tangible		r response uences	Theo	ory foundations	Key findings
	Service motivation	Service opportunity	Service ability	resources	Response type	Metric of consumer response	Theory for framing prosumers' service attributes	Theory for exploring prosumer-consumer exchange	
									behaviors; response rate and reputation are the critical
Karlsson et al. (2017)	×	Prosumer permission	X	x	Transactional	Likelihood of getting permission to book (Subjective)	×	x	boundaries. This study validates that prosumers have the right to accept or refuse consumers'
Chiappa et al. (2021)	×	x	×	×	Transactional	Booking intention (Subjective)	×	×	requests. Distrust, perceived risk, and lack of efficacy are thre main constraint that prevent consumers from using P2P
Wu et al. (2017)	×	×	×	Number of listings	Transactional	Reservation of the listings (Objective)	×	Social exchange theory	accommodation Host service factors (e.g., acceptance rate play critical role in promoting consumers
Lee et al. (2019)	×	Attachment	×	×	x	×	×	Affective events theory	reservations. Prosumer attachments to Airbnb and pee hosts play critical roles in promoting thein organizational citizenship behavior towar Airbnb and pee hosts.
Ku & Schrier (2019)	X	×	X	x	Transactional	Booking intention (Subjective)	×	X	Perceived website aesthetics and ease of navigation positively affect consumers' search convenience, stimulating consumers to browse more relevant information and enhancing the willingness of booking intention.
Kwok & Xie (2018)	×	×	×	Host capacity	Transactional	Transaction (Objective)	×	Similarity/attraction theory	The similarity between prosumers and consumers in demographic aspects positively affec achieving a transaction. Besides, renter experience and host capacity a:

(continued on next page)

Table 1 (continued)

References Prosumer service attributes Consideration Consumer response Theory foundations Key findings of tangible consequences resources Theory for exploring Service Service Service Response Metric of Theory for motivation opportunity ability type consumer framing prosumer-consumer response prosumers' exchange service attributes critical boundary conditions. Ma et al. Relational Customer Social exchange Consumers' × × × × × (2020) civility theory experience (Subjective) positively affects their civility behavior in a P2P accommodation context. Amaro et al. Transactional Intention to × × × × Economic × × (2019)book on benefits, subject Airbnb norms, attitude, (Subjective) and desire for a unique experience drive consumers' adoption of sharing economy services. Liang et al. Transactional Repurchase Perceived risk × × × × × × (2018) intention negatively affects (Subjective) consumers' repurchase intention, whereas perceived value positively affects the intention. So et al. Transactional Participation The sense of × × × × × × (2018)intention enjoyment, (Subjective) home benefits, and security are important factors affecting consumers attitudes and behavioral intentions. Wang & × Transactional Intentions × × A good (Subjective) host-guest Jeong (2018) relationship prompts high customer satisfaction, enhancing consumer intention to adopt service. Bae et al. × × Transactional Purchase × Consumers × × perception of the (2017)intention information's (Subjective) usefulness will significantly affect their adoption of the information, supporting their decision-making. Mao & Lyu × × × Transactional Repurchase Consumer × × (2017) intention attitudes and (Subjective) subjective norms are critical drivers for facilitating repurchase intention. The MOA Social exchange Using the MOA This study Service Shared Both Mixed Economic motivation flexibility property transactional approach: model theory model to fully (continued on next page)

Table 1 (continued)

References	Pros	umer service attril	outes	Consideration of tangible		Consumer response consequences		Theory foundations	
	Service motivation	Service opportunity	Service ability	resources	Response type	Metric of consumer response	Theory for framing prosumers' service attributes	Theory for exploring prosumer–consumer exchange	
			Service knowledge level	management (Single vs. multiple)	and relational	consumers' booking orders (Objective), consumers' civility behavior (Subjective)			map prosumer service provision attributes, and based on the social exchange theory, this study validates that different prosumer service attributes show distinct impacts on various consumer responses. Besides, shared property management alters these effects.

social exchange theory as the theoretical lens to explore how consumers respond to prosumer service in the P2P accommodation context.

Precisely, according to the social exchange theory, both exchange parties measure their resource investment based on the balance of "value-cost" estimation, aimed at achieving mutual value in transactions (Boateng et al., 2019). For prosumers, these resources—including material resources (e.g., a spare house) and immaterial resources (e.g., time, energy; Miles, 2012)—facilitate them to build a good customer relationship and help lead to mutual value creation or realization in P2P accommodation (Tussyadiah, 2016). Further, regarding the value in the prosumer–consumer exchange, both economic value expectation (e.g., pecuniary remuneration for prosumers; Renuka, 2019; Zhang et al., 2019a; cost savings for consumers; Roos & Hahn, 2019) and social value expectation (e.g., friendship-seeking for prosumers and consumers; Belarmino et al., 2019; Gazzola et al., 2019; Tussyadiah & Zach, 2017) are involved. As a result, consumers' responses depend on the exchange orchestration (economic or/and social) in the prosumer–consumer exchange. Specifically, according to previous P2P accommodation

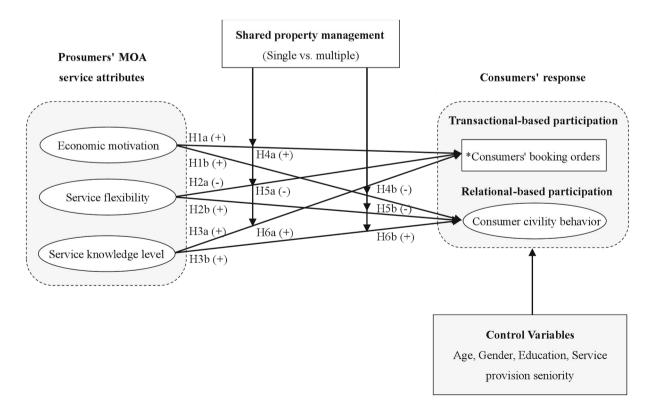


Fig. 1. Research Framework * indicate that paired objective measure.

research, consumers' participation behaviors in the sharing economy are both transactional (e.g., consumers' purchase intention; Bae et al., 2017; Wang & Jeong, 2018) and relational (e.g., consumer civility behavior; Ma et al., 2020). Thus, we develop this framework (Fig. 1) to explore the influence of prosumers' service attributes on transactional-based and relational-based consumer participation in the P2P accommodation context.

3.1. Prosumers' economic motivation and consumers' responses

As one dimension of the MOA model, motivation is an intrinsic psychological factor that prompts an individual to exhibit a particular behavior and that explains why a behavior is exhibited (Schmitz, 2013). In the P2P sharing economy, social interaction, recreational activities, and environmental protection are key factors affecting individuals' participation (Jones & Wynn, 2019; Parguel et al., 2017). However, the prerequisite for prosumers to engage in P2P service is ownership of resources (e.g., room, time, energy), and recouping the cost is their primary goal (Gazzola et al., 2019; Renuka, 2019; Zhang et al., 2019a). Thus, the economic incentive should be the strongest stimulus in driving prosumers to host their accommodation sharing service (Renuka, 2019; Zhang et al., 2019a). As Benoit et al. (2017) demonstrated, earning extra money plays a vital part in prosumers' sharing intention, whereas costsaving services is seemingly the primary consideration for consumers. Besides, according to the social exchange theory, both parties are willing to devote their resources in the exchange when they want to achieve common values (Miles, 2012). As such, in our research context of P2P accommodation, the economic interests are influential for developing an exchange between prosumer and consumer.

Specifically, prosumers share personal tangible (e.g., room, space) and intangible (e.g., time, knowledge) resources that represent personal costs, so they should desire to receive financial benefits to offset the costs. Therefore, prosumers with high economic motivation will likely have a high level of service investment (Xie & Chen, 2019). For example, they will devote efforts to understanding consumers' demands and provide high-quality service for attracting their prospects and retaining guests. As such, consumers may be tempted by prosumers' diligent service and willingness to pay, reflecting consumers' transactional participation. The preceding disquisition leads to the following:.

H1a: Prosumers' economic motivation positively influences consumers' transactional-based participation.

According to social exchange theory, individuals are sometimes not only concerned about financial benefits but also desire to build social connections and seek to realize nonmonetary rewards (e.g., psychological pleasure, social gains) from a peer exchange, indicating social value expectations (Bagozzi, 1975; Blau, 1964). Accordingly, people usually adopt the mutual benefit principle to develop and maintain a favorable relationship to obtain augmented profit and reach a high level of shared values. Such phenomena are particularly recognizable in the P2P accommodations because prosumers offer premium services, and consumers might exhibit reciprocal behavior in the peer exchange (Boateng et al., 2019). Therefore, consumers may perceive genuine hospitality from prosumers' service and have a sense of belonging and psychological ownership, enhancing their self-esteem and relational participation behavior (Jami et al., 2021; Lee et al., 2019). Therefore, we posit that consumers might have additional societal value expectations in a peer exchange context, with prosumers' high-effort investment derived from their economic motivation in services that will reflect amicable signals or premium relational benefits to consumers in the equivalent P2P exchange. This will stimulate social exchange mechanisms for building and promoting a relationship. The preceding dialectic thus leads to the following:.

H1b: Prosumers' economic motivation positively influences consumers' relational-based participation.

3.2. Prosumers' service flexibility and Consumers' responses

In our research context of P2P accommodation, prosumers' flexibility refers to an individual being their own boss and having control of their time, energy, and resources (Zhang et al., 2019b). Practically, prosumers can independently decide whether to offer a service according to their schedule; for example, prosumers can reject consumers' requests according to their personal preferences in the P2P accommodation context (Karlsson et al., 2017). This pliability is markedly dissimilar from professional full-time hotel attendants (Benoit et al., 2017). Because service flexibility serves as a critical endowment for prosumers' services that might either enhance or impede their service consequences, we use it to reflect the opportunity dimension of the MOA model. A growing number of individuals are attracted by this kind of tractability and choose to join the prosumer group (Zhang et al., 2019b).

However, flexible work arrangements are not always promising. Specifically, flexibility allows prosumers to arrange their time, work, and energy to balance life and work; they do not need to hew to the fulltime service job that might constitute stressors, as in the traditional industry (Crosno et al., 2009). Thus, prosumers do not anticipate receiving standardized service as they putatively would from conventional employees. Prosumers embracing pliability may allocate more time to other life aspects instead of professional service provision. For example, prosumers can still provide accommodation sharing services even when traveling (Zhang et al., 2019b). Thus, high flexibility might reduce prosumers' efforts on providing standardized service as do traditional hotels. As such, the actual service quality of flexible prosumers might be lower than consumers' quality expectations in their traditional beliefs. This could result in consumers' not engaging in the transactional-oriented value exchange (Sierra & McQuitty, 2005).

Further, absence from service encounters might deliver a signal of a terrible service provider, leading to consumers' negative inferences (Xie & Mao, 2017). In the economic exchange route, consumers valued the service quality indicators (e.g., response rate, time duration for confirmation) in accordance with what they paid (Wu et al., 2017). Taken together, we reckon that a highly flexible prosumer might not anticipate all-inclusive service activities like professional employees, thus attenuating consumers' positive perception of service quality and resulting in hindering consumers' transactional participation. Therefore, we offer the following:.

H2a: Prosumer's service flexibility negatively influences consumers' transactional-based participation.

In a relationship view, the equal peer exchange between the prosumer and consumer induces a personal friendship (Jones et al., 2008; Kwok & Xie, 2018). Specifically, the exchange process is more likely to indicate the "customer is a friend" rather than the "customer is God." In this vein, prosumers could provide consumers with new and even unique value (Priporas et al., 2017b). For example, in P2P accommodations, prosumers' hosts might seek to create a feeling of the consumers being at "home" (Liu & Mattila, 2017).

Though highly flexible prosumers might not perform well in providing high-quality standardized service, they have great freedom to offer various individualized services for consumers (Benoit et al., 2017). This feature prompts prosumers to anticipate innovative value cocreation activities with consumers (Zhang et al., 2019b). According to Lawler's (2001) assumptions on social exchange, this kind of relationship might promote joint control, indicating a sense of shared responsibility that evokes positive emotions about the relationships (Sierra & McQuitty, 2005). Further, according to the reciprocity tenet of social exchange, reciprocity is a social expectation and a norm; individuals believe they will get the benefits they deserve if they comply with the rules and assume the responsibility (Cropanzano & Mitchell, 2005; Lawler, 2001). Therefore, in our P2P accommodation context, we reason that prosumers' service flexibility will facilitate social exchange with consumers. Consequently, consumers' relational-based participation will be actuated. The above logic leads to the following:.

H2b: Prosumers' service flexibility positively influences consumers' relational-based participation.

3.3. Prosumers' service knowledge level and Consumers' responses

Service knowledge level refers to service personnel's awareness of consumers' consumption behavior and environmental context surrounding a transaction; it helps service providers understand customers and adopt a relevant interaction strategy (Bettencourt et al., 2001). We considered prosumers' service knowledge at their level of understanding consumers in the context of P2P accommodation and their familiarity with the P2P accommodation service. Unlike the firms in a traditional economy, the P2P sharing economy platform mainly plays the role of market intermediary rather than a supervisor (Kathan et al., 2016). Prosumers generally are bereft of systematic training and standard management practices. Moreover, their service ability might vary across unpredictable individual backgrounds (e.g., service skills). However, the level of service knowledge about understanding consumers in P2P accommodation determines whether prosumers can provide service of sufficient quality that helps lead to a successful prosumer-consumer exchange. Prosumers with rich service knowledge can utilize such knowhow to offer highly efficient service (Priporas et al., 2017a). Moreover, prosumers with high level of expertise might manifest great empathy, which could be especially attractive to consumers (Pera et al., 2019).

Practically, because the P2P accommodation sharing service requires prosumer participation in online and offline services, the actual service activities in practice are singularly complex (Pappas, 2017). Thus, sufficient knowledge about providing service in P2P accommodation likely determines whether a given prosumer can provide service that will satisfy consumers. Airbnb—a famous P2P accommodation platform—realizes the importance of prosumers' knowledge in fostering a high level of platform service quality; it has created online communities to facilitate knowledge sharing among prosumers (Chiappa et al., 2021). Thus, we claim that prosumers' service knowledge level can promote consumers' responses. Hence, the following is posited:.

H3a: Prosumers' service knowledge level positively influences consumers' transactional-based participation.

H3b: Prosumers' service knowledge level positively influences consumers' relational-based participation.

3.4. The moderating effect of Prosumers' shared property management

In P2P accommodation, some prosumers show multilisting behavior, which refers to their managing various properties to capitalize on shortterm rentals (Xie & Chen, 2019). Our work examined the moderator of prosumers' shared property management, which pertains to whether they invest and manage a single property or multiple properties (Xie & Mao, 2017). In general, prosumers should provide essential physical resources and a certain number of intangible resources: for example, fixed assets, such as an entire house or a single room and the configuration of the house and room, and intangible assets, such as energy, time, and knowledge. However, personally, prosumers' resources are limited (Xie & Mao, 2017), and therefore, their resource endowments and investments are heterogeneous. More specifically, the number of properties managed by prosumers on a common P2P accommodation platform is diverse in practice (Xie & Chen, 2019). Thus, different management and service cost levels are presented, which might lead to considerable influence on prosumer-consumer exchange.

In fact, the shared property management of multiple properties and single properties reflects a trade-off between "quality" and "quantity" in the prosumer service (Xie & Mao, 2017). Practically, both "quality" and "quantity" are important regarding service productivity (Drucker, 1991). Specifically, prosumers investing multiple properties in their service activities would acquire more sales opportunities than single property prosumers. For example, multiple online listing of properties means a broad audience and would attract more prospects seeking a

sharing accommodation, thus facilitating sales (Wu et al., 2017). This advantage of "quantity" matches the economic motivation goals on getting consumer orders. As the economic motivation reflects the prosumer's monetary interests and tends to realize the unfulfilled monetary needs, the great sales opportunities are conducive to executing this kind of motivation. Thus, we propose the following:.

H4a: When prosumers manage multiple properties, the positive effect of economic motivation on consumers' transactional-based participation would be enhanced.

However, though managing multiple properties may bring in more orders (Wu et al., 2017), they also raise management costs regarding the exchange with each consumer. According to social exchange theory, people devote their resources and exchange for mutual benefit (Miles, 2012). Hence, multilisting prosumers in the P2P accommodation require increased resource investment (e.g., energy, time), leading to augmented cost. Compared to conventional industry service providers with organization resources, individual prosumers' resources are typically more constrained. This condition may decrease the frequency and quality of interactions with each consumer (Kwok & Xie, 2018). As a result, this indicates the disadvantage of "quantity" that fails in relationship building with each consumer, such as signaling an irresponsible service provider. Thus, we believe that although prosumers with strong economic motivation may invest more resources in service activity, the effects may decrease because they have to manage many listings that distract their attention.

H4b: When prosumers manage multiple properties, the positive effect of economic motivation on consumers' relational-based participation would be attenuated.

Flexibility in the P2P accommodation means agile time scheduling. Prosumers typically do not need to work on a fixed time clock as do employees in traditional hotels. Besides, they have the authority to decide the type of their decorating style, the service they provide, and the attitude they exhibit in their communications, which vividly reflect their personal characteristics (Benoit et al., 2017). However, the more properties that prosumers manage, the greater the likelihood they will be confronted with more challenges regarding work arrangements. For example, managing multiple properties can decrease a prosumer's endeavor for each consumer and probably tend to be less personalized or friendly, which is a strong expectation for P2P accommodation services (Newlands et al., 2019).

Furthermore, consumers may not wish to feel that they are an alternative to another prosumer's potential customer; if they do, this may generate the feeling of being discriminated against and thus not engaging in the transaction (Dann et al., 2019). This distraction of prosumers' efforts will reduce service quality and signify an irresponsible image to consumers. Thus, we posit that the prosumer service with multiple properties augments the negative effect of service flexibility on consumers' relational-based participation. Hence, we suggest the following:.

H5a: When prosumers manage multiple properties, the negative effect of service flexibility on consumers' transactional-based participation would be enhanced.

H5b: When prosumers manage multiple properties, the positive effect of service flexibility on consumers' relational-based participation would be attenuated.

The higher the level of knowledge prosumers have, the more efficient their service will perform (Priporas et al., 2017a). Previous studies have shown that the condition of prosumers managing multiple properties is similar to firms with a large business scale, which has the advantage of accessing and allocating resources and thus maximizing efficiency (Li et al., 2020). As such, the value of knowledge would be pronounced because prosumers could exploit their knowledge for effective service. However, prosumers are practically facing an intractable problem: lack of professional training and external supervision (Buhalis et al., 2020; Kumar et al., 2018). Taken together, managing multiple properties

Descriptive Statistics of Prosumers.

Respondent characteristics	Category	Frequency (n)	Percentage (%)
Gender	Male	150	47.9%
	Female	163	52.1%
Age	0–25	49	15.7%
	26-35	163	52.1%
	36–45	69	22.0%
	> 45	32	10.2%
Education	Secondary school and below	9	2.9%
	High school	40	12.8%
	Junior college	101	32.3%
	College/university diploma or degree	143	45.7%
	Postgraduate or PhD degree	20	6.4%
Service provision seniority	Less than one year	58	18.5%
	1 year	54	17.3%
	2 years	96	30.7%
	3 years	70	22.4%
	4 years and above	35	11.2%

brings both challenges and opportunities. The knowledge about prosumer service is imperative and prominent regarding a successful exchange with each prospect and guest.

H6a: When prosumers manage multiple properties, the positive effect of their service knowledge level on consumers' transactional-based participation would be enhanced.

H6b: When prosumers manage multiple properties, the positive effect of their service knowledge level on consumers' relational-based participation would be enhanced.

4. Methodology development

4.1. Samples

We collected data from a P2P accommodation platform, Xiaozhu (Xi aozhu.com), which has expanded to>400 cities in China. >50 million active users joined this platform for accommodation share service (Xiaozhu, 2021). Like Airbnb in the United States, it offers short-term rental services for prosumer hosts and consumers (Reuters, 2018). Two stages of data collection were adopted. First, we contacted and asked for assistance from one platform manager of Xiaozhu. With his agreement, we designed a questionnaire through Wjx (a popular Chinese professional survey website, https://www.wjx.cn/). The questionnaire was directly sent to several prosumers' WeChat groups (the most prevalently used mobile app community in China) nested in the platform with the assistance of a manager from Xiaozhu. The prosumers in these groups are from different provinces of China, which indicates a random sampling approach regarding prosumers' locations. To motivate people to complete the questionnaire, we provided a monetary honorarium of 5-10 RMB (about 0.7-1.6 dollars) for each respondent. Second, we designed one open-ended question, asking prosumers to provide their host ID or the linkage of their properties. As such, according to the information respondents reported and with the assistance of the platform manager, we obtained their online objective data of the number of consumer orders accordingly.

We collected 369 prosumers' questionnaires from November 2019 to January 2020. First, 34 invalid samples who reported replicated values (for example, all 3 in 5 points) were omitted. Then, in practice, because some prosumers who have spare properties might hire other people to provide actual service, to eliminate potential impacts of the delegation, we used one question to scrutinize our respondent, "Do you manage the sharing asset by yourself or use a hired manager?" Respondents who chose to hire others were not included in this study. As a result, 22 questionnaires were removed, leading to 313 valid prosumers' questionnaires. Furthermore, we then retrieved respondents' records of the number of past orders according to disclosed host ID or linkage. Ultimately, we obtained 112 paired objective consumer orders.¹ The respondent demographic characteristic is summarized in Table 2.

4.2. Measures

Except for the measurement of transactional-based participation captured by the objective consumer orders, all other variables were measured using a 5-point Likert scale and adopted from the previous literature (See Table 3). We translated the items into Chinese and invited scholars in the sharing economy field to evaluate the translation and identify problems. Specifically, the items in this study were adopted from previous studies to measure prosumers' service attributes. For instance, we used scales from extant work to assess prosumers' economic motivation (Benoit et al., 2017), service knowledge level (Bettencourt et al., 2001; Kwok & Xie, 2018), and service flexibility (Benoit et al., 2017; Zhang et al., 2019b). For consumer relational-based participation, we adapted the scales of consumer civility behavior (Ma et al., 2020). Shared property management was measured by a dummy variable indicating whether one given prosumer provides service with multiple properties (Xie & Mao, 2017).

5. Analysis and results

5.1. Measurement model

To evaluate the validity and reliability of the measurement model, a confirmatory factor analysis (CFA) was conducted by using the maximum likelihood estimation with AMOS 24.0. We displayed the factor loading of each item, calculated the construct reliability (CR) and average variance extracted (AVE), and showed correlations of constructs in Table 4. The CFA results indicate a good fit to the data ($\chi^2 = 135.682$, $\chi^2/df = 2.423 < 3$, RMSEA = 0.068 < 0.08, GFI = 0.939 > 0.9, AGFI = 0.9, TLI = 0.946 > 0.9, CFI = 0.961 > 0.9). The construct reliability was above 0.7, and the AVE was above 0.5 (see Table 4). Furthermore, we examined discriminant validity using correlation analysis with all the variables. The square root of the variance of the AVE (0.747, 0.840, 0.791, 0.730) was larger than the correlation coefficients. Thus, the discriminant validity between the variables is good.

To avoid the influence of common method variance (CMV), we used the actual number of consumer orders to measure consumers'

¹ Some prosumer hosts refused to report this information due to privacy concerns or just forgot the IDs.

Variable Definitions and Measures.

Variables	Definition	Items		
Prosumers' servic	e attributes			
Economic Motivation	To what extent prosumers want to get monetary rewards from participating in sharing economy activities (Bucher et al., 2016).	 (M1) I want to become a landlord of Xiaozhu because it is a well-paid job. (M2) Whether I can make money by joining Xiaozhu is very important. (M3) Becoming a landlord of Xiaozhu is a great opportunity to earn extra money. 		
Service flexibility	Prosumer service flexibility refers to the freedom to autonomously arrange and manage their service activities under a transaction (Golembiewski et al., 1975).	 (F1) Being a landlord of Xiaozhu makes it easier to operate my own business. (F2) Being a landlord of Xiaozhu gives me a lot of flexibility to arrange my work. (F3) Becoming a landlord of Xiaozhu enables me a lot more freedom to respond to unplanned gatherings with friends. 		
Service knowledge	Prosumers' service knowledge level refers to	(K1) I know a lot about different types of renters.		
level	prosumers' awareness of different consumers and the basic understanding of sharing economy service provision, reflecting their service provision ability (Bettencourt et al., 2001; Kwok & Xie, 2018).	(K2) I can easily identify the characteristics of the renters according to my extensive experience.(K3) I know a lot about shared accommodation services.		
Consumers' respo Transactional- based participation	nse Transactional participation behavior refers to consumers' transaction-based purchasing behavior and demonstrates prosumers' service performance (Bae et al., 2017; Xie et al., 2019).	(TP1) Objective data: actual number of customer orders obtained from Xiaozhu platform (using logarithmic transformations).		
Relational-based participation	Relational participation behavior refers to consumers' reciprocal action and civility behavior in the sharing economy activities based on the relationship interaction, which belongs to nontransactional behavior (Ma et al., 2020).	 (RP1) Renters living in my house voluntarily clean their rooms. (RP2) Renters living in my house usually give me positive advice. (RP3) Renters living in my house generally leave a positive review of this property. (RP4) Renters living in a P2P short-term rental house usually exhibit resource-saving behavior (save water, electricity, etc.). 		
Shared property management	Shared property management refers to how many properties one prosumer invested in and managed in the process of sharing economy services (Xie & Mao, 2017).	The property supply provided by the landlord is single or multiple (single codes as 0, multiple codes as 1).		

transactional participation behavior. Moreover, we conducted a marked variable approach (Lindell & Whitney, 2001; Okazaki et al., 2021; Podsakoff et al., 2003). We choose a variable that measures role overload, which is not theoretically related to our research variables. Besides, the data of marker variables were gathered with dependent and independent variables in the same questionnaire. Our results show that the marker variable item was not a major problem in this study. As Chisquare declined 0.461, p = 0.493 > 0.05 (baseline model: $\chi^2 = 215.042$, $\chi^2/df = 2.688$, RMSEA = 0.74, CFI = 0.942; CMV model: $\chi^2 = 214.571$, $\chi^2/df = 2.716$, RMSEA = 0.74, CFI = 0.943).

5.2. Structural model

The structural model was analyzed using AMOS 24.0, and the result indicated an acceptable model fit. According to the results of fit indices, $\chi^2 = 145.703$, $\chi^2/df = 1.224$, which is smaller than 3. RMSEA = 0.045, which is smaller than 0.05, corresponding to a good fit (McDonald & Ho, 2002). CFI = 0.960, TLI = 0.948. GFI = 0.883, AGFI = 0.832, which is acceptable (MacCallum & Hong, 1997). Furthermore, we summarized the detailed list of standardized path coefficients with their respective t-values and R-square (See table 5).

Table 5 shows the results of the analysis. We tested for the impact of the MOA factors (prosumers' economic motivation, service flexibility, and service knowledge level) on consumers' responses. The results showed that all MOA service attributes significantly affected consumers' transactional-based participation, whereas only prosumers' service flexibility influenced consumers' relational-based participation. In detail, for consumers' transactional-based participation, prosumers' economic motivation had a significant positive effect ($\beta = 0.323$, p < 0.05), prosumers' service flexibility had a significant negative effect (β = -0.288, p < 0.05), and prosumers' service knowledge level had a significant positive effect ($\beta = 0.288$, p < 0.05). Thus, H1a, H2a, and H3a were supported. As for consumers' relational-based participation, the findings revealed that prosumers' economic motivation ($\beta = 0.155$, p > 0.05) and prosumers' service knowledge level ($\beta = -0.205$, p > 0.05) both had a nonsignificant impact, and service flexibility had a significant positive effect ($\beta = 0.524$, p < 0.001). Thus, H2b was supported, and H1b and H3b were rejected. Control variables (prosumers' age, gender, education) had no significant effects on consumers' responses. However, we found that one of our controls of prosumers' service provision seniority positively influences consumers' transactional-based participation ($\beta = 0.374$, p < 0.001). This reflects the truth that prosumers could accumulate consumer orders over time in their service practice.

5.3. Moderation test

After examining the main effects, we tested the interaction effects of shared property management. The independent variables of economic motivation, service flexibility, service knowledge level, and the moderating variable shared property management were transferred through mean centering, then three interactive terms were created. The dependent variable was regressed on the independent variables, the moderating variable, and the interactive term. The results revealed that shared property management moderates the significant association between prosumers' service attributes and consumers' transactional-based participation.

However, shared property management had no moderating impacts regarding facilitating consumers' relational-based participation. The shared property management strengthened the positive relationship between prosumers' economic motivation and consumers' transactional-based participation ($\beta = 0.163$, p < 0.05), intensified the negative relationship between prosumers' service flexibility and consumers' transactional-based participation ($\beta = -0.254$, p < 0.05), and strengthened the positive relationship between prosumers' service knowledge level and consumers' transactional-based participation ($\beta =$ 0.151, p < 0.05). Thus, H4a, H5a, and H6a received support, as illustrated in Figs. 2, 3, and 4. However, no significant moderating effect was found in the relationship of prosumers' economic motivation (β = -0.008, p > 0.05), service flexibility (β = -0.009, p > 0.05), and service knowledge level ($\beta = 0.168$, p > 0.05) on consumers' relational-based participation. Thus, H4b, H5b, and H6b were not supported (see Table 6).

6. Discussion

Existing sharing economy research has tended to center on consumers' engagement on the demand side (e.g., Akbar et al., 2016;

Validity and Variable Reliability Measures.

Variables	Factor loading	CR	AVE	Economic motivation	Service flexibility	Service knowledge level	Customer civility behavior
Economic motivation	0.760	0.7908	0.5576	1			
	0.732						
	0.748						
Service flexibility	0.827	0.8782	0.7063	0.689	1		
	0.844						
	0.850						
Service knowledge level	0.711	0.8333	0.6263	0.544	0.660	1	
	0.794						
	0.862						
Customer civility behavior	0.673	0.8200	0.5333	0.585	0.705	0.559	1
	0.759						
	0.781						
	0.703						

Note: CR - Construct Reliability; AVE - Average Variance Extracted.

The number of consumer orders and shared property management is not in this chart because the number of consumer orders is objective data, and shared property management is a dummy variable without a computable AVE.

Table 5

Structural Equation Modeling (SEM) Results.

Variables		Transactional-based participation (Number of consumer orders)				Relational-based participation (Consumer civility behavior		
		Coefficient	t-value	R ²		Coefficient	t-value	R ²
Main effect								
Economic motivation	H1a	0.323* (0.248)	2.541	0.299	H1b	0.155 (0.147)	1.125	0.353
Service flexibility	H2a	-0.288* (0.209)	-2.237		H2b	0.524***(0.132)	3.502	
Service knowledge level	H3a	0.288* (0.303)	2.211		H3b	-0.205 (0.181)	-1.438	
Control variables								
Age		0.082(0.014)	0.972			-0.011(0.009)	-0.117	
Gender		-0.05(0.284)	-0.058			-0.181(0.176)	-1.824	
Education		0.018(0.178)	0.208			0.016(0.110)	0.164	
Service provision seniority		0.374(0.106) ****	4.444			-0.177(0.065)	-1.860	

Note: (1) The values of the regression coefficients in the table are standardized coefficients; the values in parentheses are standard errors. (2) * p < 0.05, ** p < 0.01, ***p < 0.001.

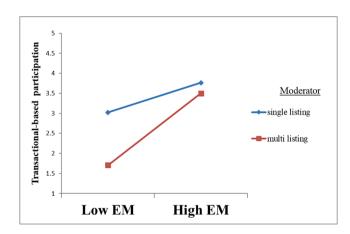


Fig. 2. Moderation Effect of Shared Property Management on the Relationship between Economic Motivation (abbreviated as EM in the above figure) and Consumer transactional-based participation.

Boateng et al., 2019; Chu & Manchanda, 2016). As such, relatively scant work has been devoted to exploring prosumers on the supply side. Furthermore, although practitioners have acknowledged the critical role of prosumers in sharing economy service, there has been limited empiricism on how prosumers' service attributes led to consumer response outcomes in the prosumer–consumer exchange. We, therefore, used the MOA model as the theoretical lens to investigate the effect of prosumers' economic motivation, service flexibility, and service knowledge level on consumer responses. The results revealed that

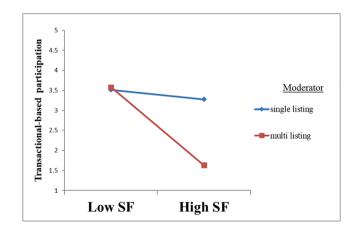


Fig. 3. Moderation Effect of Shared Property Management on the Relationship between Service Flexibility (abbreviated as SF in the above figure) and Consumer transactional-based participation.

different prosumers' service attributes had distinct impacts on consumers' transactional-based and relational-based participation. The shared property management moderates these effects. Our undertaking could thus serve as a benchmark for future empirical efforts on sharing economy prosumers.

7. Theoretical contributions

We enrich the research of prosumers' service in a P2P

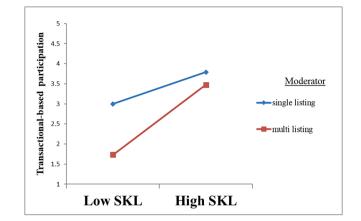


Fig. 4. Moderation Effect of Shared Property Management on the Relationship between Service Knowledge Level (abbreviated as SKL in the above figure) and Consumer transactional-based participation.

Results of the Interaction Effects.

Hypothesis	Paths	Focal Model						
		Standardized regression weights	t-value	Model R ²				
H4a	Economic motivation × shared property management → transactional-based participation	0.163*	2.176*	0.422				
H5a	Service flexibility × shared property management → transactional-based participation	-0.254***	-3.390***					
Нба	Service knowledge level × shared property management → transactional-based participation	0.151*	2.013*					
H4b	Economic motivation × shared property management → relational-based participation	-0.008	-0.084	0.378				
H5b	Service flexibility × shared property management → relational-based participation	-0.009	-0.104					
H6b	Service knowledge level × shared property management → relational-based participation	0.168	1.835					

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

accommodation-sharing context, which is imperative for future sharing economy research (Kuhzady et al., 2021). More precisely, our work consists of three theoretical contributions. First, for the emerging prosumer service in sharing economy literature stream, we provide the first theoretical understanding of the dimensions and effects of prosumers' service attributes. Most of the existing recent research either has explored finite attributes (Xie & Chen, 2019), lacking a theoretical view on a systematic exploration of the service attributes, or has validated the effects of service attributes on prosumer' engagement in service (Li et al., 2020), lacking consideration about prosumer–consumer exchange. Drawing on the MOA model, we initially identified important factors of motivation, opportunity, and ability dimensions. Our study provided an MOA model-based framework to analyze prosumers' service attributes and revealed that various prosumers' service attributes drive consumers' responses in a P2P accommodation context differently. Theoretically, though previous research on the MOA model explores the impacts of MOA factors on consumers' know-how to exchange (e.g., Gruen et al., 2007), no prior research validates the MOA model in the prosumer–consumer exchange context. We enhance the understanding of the theory by demonstrating that not all the three dimensions of the MOA model exert similar impacts in a prosumer–consumer exchange context. Accordingly, we were thus able to reinforce the importance of examining prosumers' heterogeneity—a domain that has been largely ignored.

Second, the current sharing economy research complements prior research that either focused on consumer transactional participation (Agag & Eid, 2019; Chiappa et al., 2021) or relational participation (Ceptureanu et al., 2020; Ma et al., 2020), which reflects that two exchange patterns of economic exchange and social exchange coexist in prosumer service in the sharing economy. However, no research has distinguished the different mechanisms in exchanging prosumer and consumer. Instead, we explored prosumer-consumer exchange in a twodimensional view: economic and social exchange coexist and exert different impacts simultaneously. Thus, our research enriched the marketing exchange literature by exploring the prosumer-consumer exchange in the P2P accommodation sharing service (Farmaki et al., 2020). Further, extant work on marketing exchange has shed light on firm or employee service providers and consumers (Jones et al., 2008; Lee et al., 2018). Prosumers tend to have equal social status as peers with consumers and thus do not need to adopt the perspective that the "consumer is God." The prosumer to consumer exchange prompts many equal peer interactions (Kwok & Xie, 2018). Our undertaking provided evidence of how prosumers' service attributes affected different consumer responses (i.e., transactional-based and relational-based participation) in the service exchange.

Third, though prosumers input both metal and tangible resources in their service activities, previous studies on tangible property management (i.e., single vs. multiple properties) have explored either its effects on service performance (Kwok & Xie, 2019) or the reason for prosumers' engaging in multiple listing behaviors (Xie & Mao, 2017). Scant research has explored the interplay of service provision attributes and tangible properties; thus, we lack knowledge about how prosumers leverage and employ their resources. We contributed empirical insights into prosumers' service management (e.g., resource allocation) by verifying that the shared property management could amplify and attenuate the effects of prosumer service attributes in the MOA framework, enhancing the understanding of the tension of "quantity" and "quality" in prosumer service. The empirical evidence indicates that ignoring the consideration of tangible resources in prosumer service research might lead to a significant misjudgment about the effects of prosumer service attributes.

7.1. Practical implications

Our findings provide several practical suggestions for sharing platforms and prosumers in the P2P accommodation sector. Because prosumers manifest heterogeneity due to low entry barriers (Breidbach & Brodie, 2017), their motivation, qualifications, and skills cannot be easily screened and managed. Thus, the P2P accommodation platform tends to guide prosumers' services rather than manage them. This is a "how-to-guide" issue. We provide a useful reference framework for prosumers' motivation, opportunity, and ability dimensions to stimulate consumers' participation. Platforms could utilize it to analyze and direct prosumers' service activities. For instance, prosumers have economic motivations as resource vendors and service providers. Platforms should discern whether they should evaluate prosumers' services excessively. However, if they opt to do so, prosumers might switch to alternative P2P accommodation platforms.

Moreover, because prosumers have marked flexibility, sufficiently

monitoring their efforts and in-service activities is challenging for platforms. Indeed, using a series of evaluating systems or policies that mete out inimical "rewards" may be necessary to keep prosumers providing an acceptable level of service. Otherwise, consumer complaints and service failures might arise and pose problems for platforms. Also, the overall prosumer service knowledge level in a given platform will likely determine the reputation of the platform's capacity to provide proficient, desirable service to consumers. Because that situation is linked to the issue of how to scrutinize the heterogenous prosumer group, platforms need to ensure that prosumers have sufficient qualifications so as not to besmirch the platform's image. We suggest that P2P accommodation platforms establish multiple interactive communities for their prosumers—both offline and online; doing so might enhance prosumers' ability and desire to share service knowledge and increase their sense of belongingness and commitment to their platforms.

For P2P accommodation platforms, discerning how to deal with the interaction between prosumers and consumers is crucial. We identified two kinds of consumer participation in the prosumer–consumer exchange: transactional-based and relational-based participation. Platform enterprises should acknowledge the unique value both kinds of participation have on prosumers and consumers. This is associated with value creation and the realization of a high level of accommodation service; it contrasts with merely providing the standard service that competes with traditional hospitality service provider firms (Zervas et al., 2017).

Thus, we suggest that P2P accommodation platforms facilitate a value cocreation climate; they could provide monetary (e.g., coupons) and nonmonetary (e.g., badges) rewards to encourage consumers to adopt further relational-based participation—for example, sustainable consumption behavior (Wang et al., 2019). Also, additional policies, regulations, and incentives should be formulated to motivate consumers' awareness of value cocreation. Such cognizance is indispensable in establishing the value cocreation system of a sharing economy and promoting further development of service ecology.

From prosumers' perspective in a P2P accommodation context, our work revealed tension between offering multiple properties in the service with accompanying dispersed service efforts and providing single properties in the service attendant with focused service efforts. Consistent with prosumers' personal resource endowments (i.e., the number of properties they possess), prosumers should be aware that having many listed properties might attract more consumers but attenuate the effectiveness of their services owing to their marked dispersion of time and energy. Thus, prosumers owning many properties might consider recruiting intermediaries (Moatti, 2015) to help manage and provide the needed services.

7.2. Limitations and future research

Given the constraints of our research context, we could only study a representative set of P2P accommodation service providers using a limited prosumer sample. For example, we could not track prosumers' service longitudinally. However, to identify the potential effects of prosumers' service attributes, we surveyed prosumers and matched their online disclosed objective consumer order data. Future research could explore prosumers' service attributes in a large data set to verify the generalizability of our findings and examine the prosumer–consumer exchange in a dynamic view. Furthermore, the concept of prosumers' service ability is multidimensional; we mainly considered knowledge level—a critical aspect in prosumer service. Thus, scholars should subsequently explore other critical aspects within the MOA model. Finally, the connections of prosumers' MOA factors with price, profile design, and subsequent ratings in service practice need to be further explored, which were not considered in current research.

Another limitation is that we only used consumer orders to assess transaction-based participation and consumer civility to indicate relational-based participation. Extant work on consumer engagement in the sharing economy has shown that consumer word of mouth (Ju et al., 2019; Pera et al., 2019), ratings (Gunter, 2018; Proserpio et al., 2018), evaluations (Lalicic & Weismayer, 2018) are also important consequences in such a context. Therefore, researchers could explore the effects of prosumers' service attributes on these other kinds of consumer engagement. Finally, as the COVID-19 pandemic might greatly affect individuals' behaviors, research on prosumer–consumer exchange in this context is also imperative.

CRediT authorship contribution statement

Diandian Xiang: Writing – review & editing, Writing – original draft, Project administration, Conceptualization. **Guanzhe Jiao:** Writing – original draft, Data curation. **Bin Sun:** Writing – review & editing. **Chenming Peng:** Writing – review & editing. **Yaxuan Ran:** Writing – review & editing, Funding acquisition.

Declaration of Competing Interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

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