Does Online Group Buying Benefit or Destroy Retail Businesses?

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Abstract

Before adopting a group buying strategy, retailers need to recognize the role of group buying and whether this strategy is beneficial or detrimental. Our data are a product of surveys from over 200 customers. The results revealed that group buying agent is beneficial to retailers. They supported our hypotheses that group buying is an effective promotion tool for retailers in expanding their customer base. Our research also showed that customer satisfaction positively influences repeated purchases through group buying agents and future purchases with retailers at regular price.

Key words: customer satisfaction; group buying; retail

JEL classification: M100; M19; M30

1. Introduction

Through technological advancements, retail business is not limited to physical stores, and e-commerce has proliferated—a disruptive innovation that radically changes the traditional way of running business (Lee, 2001). The convergence of content sites and social networks has resulted in emerging e-commerce business models, including online shopping and online group buying. Online shopping is a form of e-commerce that allows consumers to buy goods or services directly from a

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seller over the Internet (Koyuncu and Bhattachary, 2004). Online group buying connects the retailers and customers through an online group buying agent.

Online group buying refers to a group of customers agreeing to purchase a product or service over an online platform from which they obtain a special discount based on a relatively large quantity purchasing, via a group buying agent (e.g., Groupon). Through collective bargaining, individuals can leverage to obtain daily deals on local products and services (Gridley & Company, 2011). Online group buying is so convenient that consumers can send group buying invitations via their websites to their friends (Jing and Xie, 2011). A group of customers often needs to wait before receiving the product or service ordered (Tai et al., 2012).

There are two types of online group buying mechanisms: dynamic pricing and static pricing. Within the dynamic pricing mechanism, discount rates and prices are determined by the sellers. A larger size of customers helps achieve a lower price. The dynamic pricing mechanism is very common in Europe and the US. The static pricing mechanism involves a product or service at a fixed discount rate. A condition under which static pricing works is that the total number of buyers must be greater than the predetermined number of products sold (Xiong and Hu, 2011). The group buying scheme becomes unavailable when a pre-determined number of products has been sold (Erdoğmus and Çiçek, 2011). This fixed discount rate mechanism is prevalent in Hong Kong. Most group buying platforms have adopted this approach in Hong Kong (e.g. Groupon, Beecrazy, and Yahoo Deals).

Online group buying is a fast-growing shopping trend. In the first quarter of 2011, the Local Offer Report showed 117 new deal sites in the US. The number of group buying doubled that in the previous year (Schonfeld, 2011). Evidence can be found that some group buying agents have focused on the global market. For instance, Groupon provides services across 500 cities in the US, Germany, and Australia. Between 2009 and 2012, Groupon's sales revenue increased by 163-fold, from USD 14 million to 2.3 billion. In 2012, its international segment gross billings increased by USD 583.5 million (24%) and gross billings in North America increased by USD 811.2 million (52%) compared to 2011 (MorningStar, 2012).

Several factors account for its rapid growth, such as technological advancement, the shift of bargaining power (Luo et al., 2012) and the benefits of multiple sale channels to manufacturers (compared to the single channel) (Dumrongsiri et al., 2008). Online group buying provides customers with more flexibility due to its lower time constraints (e.g., the specific opening hours of high-street stores). Group buying agent acts as a bridge between customers and retailers.

Although online group buying has grown rapidly in recent years, we know little about the relationship among the three parties: retailers, customers, and group buying agents. Past studies discussed the advantages of group buying, such as helping promotion and reducing inventory levels. One of the disadvantages is that retailers need to share revenue with the group buying agent and this scheme may only attract low-end customers (Moon et al., 2005; Wang et al., 2013). What role does group buying agent play? Specifically, this study investigates the effects of online group buying on retailers by addressing whether it is beneficial or damaging

to retailers. This research provides insights into how retailers and group buying agent retain (or even increase) the customers.

2. Literature Review

2.1 Characteristics of Retail Shop and Online Group Buying

Traditionally, retailers make use of retail channels to sell the goods, which they purchase from manufacturers directly in large quantities, to customers in smaller quantities and higher prices. Retail channels are defined as physical stores such as specialty stores and non-specialty stores. Specialty stores focus on their own branded products, and non-specialty stores are owned and operated by third party. Due to the geographical constraints, retail shops target local residents and tourists. A retail store allows for staff communicating with consumers and directly selling products and services to consumers (Dumrongsiri et al., 2008).

Online group buying is a collective buying over the internet, and it usually offers products and services at significantly reduced prices when a minimum number of buyers would make the purchase (Xiong and Hu, 2011). The target of online group buying is mostly local residents within certain areas. Customers can access to website without geographical boundaries (Chen, 2009), but the interactions with the group buying agent is limited.

Table 1. Comparisons among the Three Retail Channels

	Retail Shops	Online Store	Online Group Buying
1. Physical Store	Yes	No	No
2. Pricing	Expensive	Medium, with shipping fees	Cheap
3. Interaction	High	Medium	Low
4. Forecasting	Least Accurate	Medium	Most Accurate
5. Operational Cost	High	Medium	Low
6. Distribution	Surrounding areas	Global	District
7. Inventory Control	Make to stock	Make to stock / order	Make to order
8. Marketing	Limited to window display	Global, but not targeted	Targeted customers

The characteristics of group buying agents, retail shops, and online shops are different. Based on the past literature, they are summarized in Table 1. In terms of pricing, online group buying usually provides lower price while retail shop tends to offer products or services at a higher price due to a higher operating cost. As many online shops do not own a physical store, this allows them to provide more discounts for customers. However, customers may have to pay for shipping fees (Anand and Aron, 2003). For interaction, retail shops provide a personalized interaction with

customers, and a better understanding of consumers' preferences and product improvements (Chen and Roma, 2011). Online group buying allows for more accurate demand forecast from retailers and group buying agents, because the type(s) of products and their corresponding quantities are often pre-determined in a group buying scheme. It is often the case that customers receive their orders sometime between two and four weeks after the group period is closed. Customers may also buy the products nearer the end of group buying period. Traditional retailers and online stores cannot adopt such an approach because most customers using these channels are not willing to wait. For product marketing, online group buying and online shops help retail shops to boost sales because they increase the exposure of products by promoting the use of non-traditional boundaries (Chung and Rust, 2006). Compared to online shops, online group buying delivers its core competence by targeting customers more effectively. It is able to focus on promoting specific items, strengthening the company's image.

2.2 Company Performance and Customers Satisfaction

The success of retail business relies primarily on customer satisfaction. Under traditional channels, customers often take into account several factors before making a purchase. These are deliverability, perceived quality, perceived price, and marketing activities (Dubrovski, 2001). Customer service and reputation of retailers also influence the purchase decision (Akbar and James, 2013; Gunasekaran and Kobu, 2007). Customer satisfaction involves two stages, pre-buying and post-buying phases. In pre-buying phase, there are four factors contributing to a buying decision: deliverability, perceived quality, perceived price, and marketing activities. Deliverability refers to how convenient it is for customers to receive the products or services. In the post-buying phase, customers will be satisfied with their purchases if the perceived value is higher than the expected value in pre-buying phase. This leads to repeated purchases and increases the number of regular customers (Dubrovski, 2001).

Studies on online group buying activities argue that the key factors influencing customers' participations are online word-of mouth, website quality, reputation, and trust (Cheng and Huang, 2013; Kauffman et al., 2010; Tsai et al., 2011). However, it is unclear as to whether the same six factors in traditional market channels play a role in customers' decisions in group buying. In group buying context, both retailer and group buying agent determine price of products and define the quality of customer services. However, we speculate that when customers make purchase decisions in group buying, it is difficult for them to distinguish the roles and responsibilities of retailer and group buying agent. Instead, customers may take product-related and service-related attributes into consideration when making a purchase decision. To explore this possibility, the current study examines whether service-related attributes (i.e., customer services, reputation of retailers and marketing activities) affect customers' purchase decision. Also, we will test whether product-related attributes (i.e., price, quality, and deliverability) are considered relevant by customers.

H_{1a}: Customers take customer services, marketing activity, and reputation of retailers into consideration before they make purchase decisions in group buying.

H_{1b}: Customers take price, quality, and deliverability into consideration before they make purchase decisions in group buying.

Extant literature on retail business and marketing has shown that customers' satisfaction has direct effects on loyalty (Dubrovski, 2001; Rechinhheld and Sasser, 1990; Shiau and Luo, 2012). If customers are satisfied with the buying experience, they are more likely to become long-term customers. Satisfied customers may bring in new customers through positive word of mouth, resulting in an increase in retailers' profitability (Reichheld, 1990; Wei et al., 2011). Finkelman (1993) also found that sellers attained superior economic return through high customer satisfaction. A satisfied customer expressed his/her satisfaction to 10 of his/her friends, who later became customers for the product. In contrast, 13% of unsatisfied customers, on average, expressed their dissatisfaction to more than 20 people (Homburg et al., 2005). These findings attest to the importance of customer satisfaction in retailers' performance. To explore the importance of customers' satisfaction with group buying, we consider how satisfaction affects their tendency to use group buying in the future. We contend that this relationship between satisfaction and repeated use of group buying may work in a similar way as in traditional retail businesses.

H_2: Customer satisfaction with prior group buying experience is positively related to the likelihood of future use of group buying.

2.3 How Group Buying May Benefit or Hurt Retailers

One school of thought contends that a group buying agent benefits retailers. First, customer heterogeneity in product knowledge determines the profit advantage. Generally, a moderate level of buyer information heterogeneity is required. Retailers may benefit from employing a dynamic strategy during different stages of a product's life cycle. Then, price discounts are used to induce sales from the less informed customers when its products become mature (Jing and Xie, 2011; Brown, 2011). Second, group buying allows retailers to expand to a larger market. This leads to a higher profit margin as the valuation of the less informed customer is increased from spreading information (Jing and Xie, 2011). Online group buying is considered as an effective promotion tool for products (Erdoğmus and Ç içek, 2011).

In addition, inventory levels of low turnover products could be reduced by selling them at a discounted price. Group buying therefore helps improve sales volume and inventory turnover rate (Brown, 2011). Furthermore, group buying creates opportunities for retailers to build their reputation. For retailers with limited physical stores at a particular area, using group buying websites advertises their products more efficiently (Wang et al., 2013).

Another school of thought argues that group buying destroys the market of retailers in several ways. It is difficult for retailers to gain profits from group buying,

as they have to offer great discount and share some revenues with the group buying agent. For example, Groupon offers a 50% discount on a product, service, of which Groupon takes about half the profit (Del Rey, 2010). Research showed that 32% of retailers could not make profit from group buying schemes (Ruth, 2010). In addition, in cases where the group buying agent fails to deliver the products, the corresponding retailers may have poor images in the long-run (Hughes and Beukes, 2012).

Next, customers are used to waiting for discounts and buying through group buying, resulting in lowering retailers' profitability (Del Rey, 2010). Customers who purchase products only through group buying are unlikely to become long-term customers. They are considered low-end bargain seekers who are unwilling to pay more than the discounted price from group buying. These customers are willing to wait for more discounts and to purchase with coupons. This may erode retailers' profitability (Del Rey, 2010; Brown, 2011).

Conversely, group buying platforms can bring numerous products or services to the attention of online communities and can attract potential consumers. After purchasing via group buying, the product information is directly transferred to customers beyond those descriptions online. Consumers are able to test and review those products more accurately than those who have not tried them. The products sold via group buying might draw consumers' attention and group buying might increase the chance of new customers turning into regular customers (Brown, 2011). That is, customers are more willing to continue to purchase from the retailers and the customer base will become larger. We speculate that customers who are satisfied in their prior group buying experience are willing to return to retailers, even when same products are no longer available through group buying.

H_3: Customers' satisfaction with prior group buying experience positively influences repeated purchases with the retailers.

H_4: Dissatisfaction with group buying service reduces the likelihood that customers make repeated purchases with retailers in the future.

3. Method

Figure 1 illustrates our model that demonstrates how the likelihoods of using group buying and returning to the same retailer are affected. This study explores the relationships among customers, group buying agents, and retailers. Our speculation is that customer service provided by the group buying agent determines the success of business and repeated purchases from customers. As the group buying agent acts as a representative of the retailer, good customer service increases customer loyalty to both group buying agents and retailers. If a customer is satisfied with prior group buying experience, this will lead to repeated purchases. Therefore, customer satisfaction is essential to increasing the customer base.

Data were collected through questionnaires from customers in Hong Kong. The data used in our study are the product of an online survey and a face-to-face survey.

Questionnaires were sent out through different channels, such as in an online survey or by e-mail. Face-to-face surveys were conducted with approximately one third of our respondents. A total of 1,500 questionnaires were sent out. 226 questionnaires were received, including 120 from the online survey and 106 from face-to-face surveys. The response rate was 15.1%. Twenty-six questionnaires were excluded from analyses because of invalid responses. Since 116 respondents (out of 226) indicated that they had purchased through group buying, the remaining responses were also excluded.

53% of respondents (out of 200) were female. 51% of respondents were between 18 and 25 years old, 12% were between 26 to 35 years old, 27% were between 36 to 45 years old, and 12% were over 45 years old. Apart from daily necessity spending, such as food and transportation, half (50%) of the respondents shopped 2 to 4 times in a week, 21% of respondents shopped fewer than twice a week. 58% of them indicated that they had used group buying before.

Figure 1. Proposed Research Model
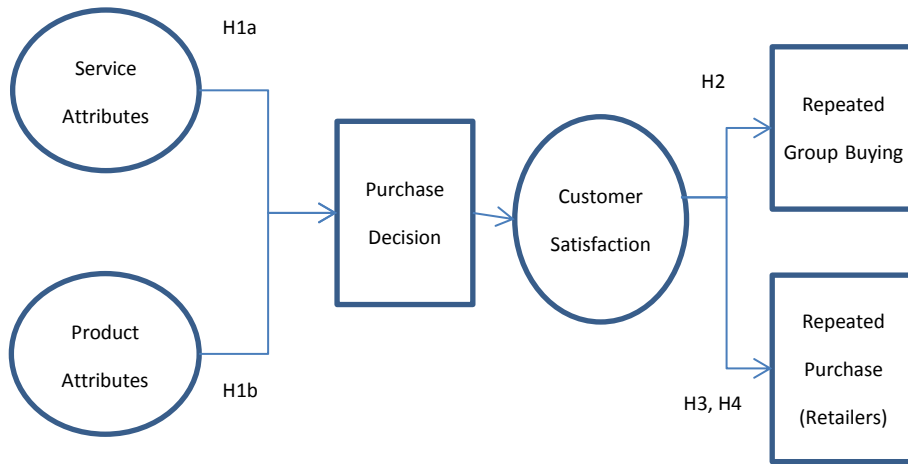
We performed a principal component analysis to examine the reliability of measurement scales for the constructs. The first construct used three items relating to the quality of service provided, whereas the second construct was formed by another three items measuring the importance of product quality. Table 2 shows the correlation matrix and Table 3 shows the rotated component matrix. All items have a correlation of at least 0.3 with another item (Table 3), suggesting reasonable factorability. The Kaiser-Meyer-Olkin measure was calculated to ensure that the sample size was adequate for factor analysis, yielding the value of 0.713. This value falls into the range of "being good" for factor analysis (Dziuban and Shirkey, 1974; Verma, 2013), and Bartlett's test of sphericity was significant ($\chi^2(142.448)$,

$p < 0.05$). The communalities were all above 0.5, confirming that each item shared some common variance with other items.

Table 2. Correlation Matrix: Factors Affecting Customer's Group Buying Decision

	Price	Deliverability	Customer service of retailer	Reputation of retailer	Marketing activity	Product quality
Price	1.000	0.375	0.216	0.123	0.023	0.345
Deliverability		1.000	0.406	0.168	0.299	0.385
Customer service of retailer			1.000	0.406	0.455	0.282
Reputation of retailer				1.000	0.430	0.409
Marketing activity					1.000	0.286
Product quality						1.000
Price		0.000*	0.010*	0.095	0.402	0.000*
Deliverability			0.000*	0.036*	0.001*	0.000*
Customer service of retailer				0.000*	0.000*	0.001*
Reputation of retailer					0.000*	0.000*
Marketing activity						0.001*
Product quality						

Table 3. Rotated Loadings from a Two-factor Model

	Component	
	Service-oriented Component	Product-oriented Component
Price	−0.094	0.860
Deliverability	0.281	0.713
Customer service	0.682	0.320
Reputation of retailer	0.766	0.113
Marketing activity	0.826	0.034
Product quality	0.406	0.600

Two factors accounted for a total of 62% of the variance in the dataset. Due to the high loadings of the items relating to customer service of the group buying agent,

reputation of retailer and marketing activity, Factor 1 appeared to be the attributes of perceived image of both the group buying agent and retailer, a service-oriented factor. It explained 33% of variance. Factor 2 regarded the product itself, as supported by the high loadings of the price, deliverability, and product quality, a product-oriented factor. The product-oriented factor accounted for 29% of the variance. As illustrated in Table 3, these two factors have high positive loadings on three service-related and other three product-related variables, respectively.

To establish discriminant validity, the average variance extracted (AVE) was computed and the AVEs were 0.59 (service-oriented factor) and 0.52 (product-oriented factor). All values were greater than 0.5 the threshold (Hair et al., 2010). Furthermore, the squared correlation between the two constructs was 0.127 ($<$ AVE), thus showing discriminant validity (Fornell and Larcker, 1981).

7-point Likert scales were used to measure the degree to which customers were satisfied with their prior group buying experience (1="strongly disagree" to 7="strongly agree"). Respondents were asked the extent to which they agreed with the statements "I am satisfied with the previous group buying experience" and "I am disappointed with the prior group buying experience." A Cronbach's alpha of 0.76 showed an acceptable level of internal consistency of scale.

4. Results

4.1 Variables Affecting Customer's Group Buying Decision

Respondents with group buying experience were asked to show the importance of six different factors that they took into account when considering the use of group buying. Again, these were quality, reputation, deliverability, price, customer services, and marketing activities. They were required to indicate their perceived importance of these six factors on a 7-point Likert scale (1="not at all important" to 7="very important"). One sample *t*-tests were performed to examine if customers considered each of the six variables (three relating to product attributes and the other three relating to service attributes) when they used group buying. As can be seen in Table 4, the mean scores for these six factors were significantly higher than 4 (the neutral category), $p_s < 0.01$. Our findings lend support to Hypotheses 1a and 1b.

4.2 Customer Satisfaction and Repeated Use of Group Buying

Hypothesis 2 considered the relationship between customers' satisfaction and the likelihood of repeated use of group buying. Respondents' willingness to use group buying again in the future was measured as a dichotomous variable. Illustrated in Table 5 are the results of logistic regression analysis. A unit increase in customers' satisfaction with prior group buying experience increased the log odds of repeated use of group buying by 0.43, $p < 0.05$. The odds increased by 53% for every unit increase in satisfaction score. Therefore, Hypothesis 2 is supported.

Table 4. One-Sample t-Test Results for the Six Factors

Statements	Mean (Standard Deviation)	t	*d.f.*
Price is an important factor when considering a group buying decision	6.38** (0.96)	26.85	115
Deliverability is an important factor when considering a group buying decision	5.85** (0.99)	20.03	115
Group buying agent's customer service is an important factor when considering a group buying decision	5.07** (1.18)	9.84	115
Retailer's reputation is an important factor when considering a group buying decision	5.94** (1.09)	19.17	115
Marketing activity is an important factor when considering a group buying decision	5.13** (1.24)	9.80	115
Product quality is an important factor when considering a group buying decision	6.41** (0.76)	34.21	115

Notes: Sample means were tested against the neutral category using 1-tailed tests. ** denotes significance at the 1% level.

Table 5. Logistic Regressions: Satisfaction and the Likelihood of Repeated Use of Group Buying and Repeated Purchase with Retailers

Factor	Repeated Use or Purchase	
	with Group Guying Agent	with Retailers
Sex (female)	0.168	−0.005
Age Group (26–35)	1.065	0.323
Age Group (36–45)	−0.432	0.018
Age Group (above 45)	0.472	−1.183
Number of Purchases per week (2–4 times)	−0.029	0.840
Number of Purchases per week (5–7 times)	0.518	0.333
Number of Purchases per week (8 times or above)	−0.238	0.707
Customers' Satisfaction with Group Buying Experience	0.428*	1.361**

Notes: All terms except model diagnostics are regression coefficients. The reference category for age group is 18–25. The reference category for number of purchases is 0–1. All tests are two-tailed. * and ** denote significance at the 5% and 1% levels, respectively.

4.3 Customer Satisfaction (Dissatisfaction) and Repeated Purchases with Retailers

As predicted by Hypothesis 3, customer satisfaction with group buying also increased the likelihood of making future purchases from retailers when group buying was no longer available. Table 6 shows the result of binary logistic regression. We measured respondents' willingness to make repeated purchases with the same retailers when group buying would not be available.

A unit increase in customers' satisfaction would increase the log odds of repeated purchases by 1.361, $p < 0.01$. This was a 390% increase in the odds. The more satisfied respondents were, the more likely they would make repeated purchase with the retailers in future. The results lend support to Hypothesis 3.

Hypothesis 4 explored the detrimental effect of customers' dissatisfaction with group buying on repeated purchases with the retailers. Dissatisfaction was measured using the statement "I am disappointed with the prior group buying experience". Responses were coded in a reverse order. Higher scores indicated higher levels of dissatisfaction. A unit increase in customers' dissatisfaction would decrease the log odds of repeated purchases by 0.752, $p < 0.01$. This was a 53% reduction in the odds. Dissatisfaction with the service provided by the group buying agent adversely affected the likelihood that customers made repeated purchases with the retailers in the future. The results lend support to Hypothesis 4.

Table 6. Logistic Regression: Dissatisfaction and the Likelihood of Repeated Purchases with Retailers

Factor	Repeated Purchases with Retailers
Sex (female)	−0.050
Age Group (26–35)	0.653
Age Group (36–45)	−0.212
Age Group (above 45)	−0.041
Number of Purchases per week (2–4 times)	0.781
Number of Purchases per week (5–7 times)	0.180
Number of Purchases per week (8 times or above)	0.105
Disappointment with Group Buying Service	0.752[*]

Notes: All terms except model diagnostics are exponential regression coefficients. The reference category for age group is 18–25. The reference category for number of purchases is 0–1. All tests are two-tailed. * denotes significance at the 5% level.

5. Discussion

As discussed earlier, there are a growing number of customers using group buying, but we know little about what factors they perceived important and the extent to which customers' repeated purchases from the retailers is affected by the prior group buying experience. Our research refined the relationships among

customers' satisfaction, repeated use of group buying, and direct purchase with retailers in future. We clarified this relationship by testing whether the factors that were shown to be important in traditional retail channels are also important in group buying schemes (Akbar and James, 2013; Gunasekaran and Kobu, 2007). It was found that, when making a group buying purchase decision, customers were concerned with six different dimensions, including product quality, price, deliverability, reputation of retailers, and customer service of the group buying agent. This finding is consistent with past studies that illustrate how customers' satisfaction is formed in a traditional retail channel (Dubrovski, 2001; Shiau and Luo, 2012).

This finding has an important implication. Although past studies have demonstrated that group buying could destroy retail businesses (Hughes and Beukes, 2012; Del Rey, 2010; Ruth, 2010), our findings have suggested otherwise. In particular, we found that group buying scheme expanded retailers' customer base. If customers were satisfied with the prior group buying experience, they were more likely to become long-term customers. Our findings indicated that customer satisfaction towards group buying agent affects the tendency of repeated use of group buying. Moreover, satisfied customers reported that they were willing to make future purchases directly with the retailers even when the group buying discount would no longer be available.

The current study has important theoretical contributions in several ways. First, a group buying agent is a double-edged sword. The service quality provided by a group buying agent is the key to the success of both itself and retailers. Customers' dissatisfaction with their prior group buying experience not only hurts the group buying agent but also the retailers. Implicit in our findings is that, although the group buying agent provides a platform bridging retailers and customers, the retailers need to ensure that the customer service by the group buying agent is sufficiently high.

Traditionally, retailers relied on advertisement in media to promote their products (Ailawadi et al., 2009). This increased their marginal cost and consumers consequently needed to pay a higher price. With online group buying, new products are sold with discounts. The profit to be shared with the group buying agent is relatively less than the cost of advertisement. Group buying can be considered as an effective targeted marketing approach, resulting in reaching a larger customer base.

Our findings revealed that the two underlying factors considered to be important were related to reputation and the products themselves. It was found that price, deliverability, and product quality accounted for the product-related factor. Customer satisfaction may be strengthened if the group buying agent offers value-for-money and high quality products. Since product quality is primarily controlled by the retailers, the group buying agent must work closely with them. If possible, the group buying agent should focus on collaborating with retailers that produce high quality products and good reputation. The deliverability, on the other hand, requires efforts from both the group buying agent and the retailer. This study reveals that customer satisfaction does not only influence the return to the group

buying agent but also the return to the retailer. Satisfied customers in their prior experience would become loyal to both group buying agents and retailers.

Customers view group buying as a channel to try new products or services. If the products bought in group buying suit their preferences, they are less concerned about price and are more willing to return to the product or service provider directly without group buying and retailer benefits on it. As a result, the relationship between group buying and retailers are mutually beneficial to each other. However, our results have practical implications in the role of retailers with the presence of the group buying agent. Customers' dissatisfaction with the service provided by the group buying agent damages the benefits to both group buying agent and retailers.

We have clarified the relationships among the retailer, the group buying agent, and the customer. Group buying agents and retailers should co-operate to develop long-term relationships where retailers could promote their new products using group buying platforms. Retailers can make effective use of this new channel to promote the products and expand the customer base as it provides potential customers with an opportunity to try new products. Managers need to be clear about the goal of adopting group buying. From the perspective of customers, customer satisfaction with the worthiness of products and product quality are closely related to the return to the group buying company. Therefore, the retailer and group buying agent are advised to provide good customer services to enhance customer satisfaction. This increases the possibility of customers' return to both parties.

If both parties can work together to improve information transfer and quality control, they are able to enlarge the market. Considering from the perspective of the group buying agent, we advise that the group buying agent should explore the reason(s) why some retailers are sceptical of group buying. For instance, if the profit-sharing ratio is too high for some potentially good retailers (i.e., those who are well-known for excellent product quality), it will be worthwhile for the group buying agent to help cut their costs. This is because product quality is one of the important attributes in group buying customers' satisfaction. Satisfied customers are more likely to continue to take part in group buying activities in the future.

Several limitations and potential avenues for future research have been identified. First, the respondents were drawn from the Hong Kong population. It is uncertain as to whether the same pattern of findings holds true for respondents from other countries. More research is necessary to examine customers' attitude towards group buying in other countries. Second, we only learned about the roles of group buying agents from customers and retailers' perspectives. Interviews with group buying agents may be conducted to understand their perspective directly.

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